

**Abstract no.: 33520**

**ROLE OF CERVICAL EPIDURAL STEROID INJECTION FOR THE MANAGEMENT OF CERVICAL SPONDYLOTIC RADICULOPATHY**

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Introduction: Chronic neck pain is one of the common problem in our elderly population, the most common cause of which is cervical spondylosis .Some of them are relieved with conservative measures like activity modification ,NSAIDS or physical therapy of but in majority of them, there is no symptomatic improvement.In these patients cervical epidural injection may be helpful choice. Purpose : To deliver corticosteroid close to the site of pathology presumably onto an inflamed nerve root ,based on the principle that the local concentration over an inflamed nerve root and will be more effective than steroid administration either orally or by intramuscular injection. Epidural steroid acts by inhibiting phospholipase A2 activity thus reducing symptoms, decreases capillary permeability and inhibit neural transmission in nociceptive C fibers thus reducing pain. Study: We are presenting a pilot study of 20 patients diagnosed as cervical spondylotic radiculopathy managed with epidural steroid injection at our institute. All the routine investigations with x-ray and MRI of cervical spine were done to confirm diagnosis. Initially they were treated conservatively for 3weeks. After failure of conservative management for 3weeks, cervical epidural steroid injection were administrated. Inclusion criteria: Patient complaining of neck pain with radiculopathy not responding to NSAIDs or physiotherapy. Outcome analysis: it was done on the basis of Neck disability index (Vernon and Mior index) and would be discussed during the conference. Of all patients, 50% had excellent symptomatic relief, 30% were moderately relieved while 20% patients had no relief in short and medium term.

**Abstract no.: 33521**

**CASE STUDY-CHRONIC OSTEOMYELITIS MASQUERADING AS TIBIAL HEMIMELIA**

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**INTRODUCTION-** Osteomyelitis is a commonly neglected disease in rural population of India. Despite its common prevalence, a number of cases still present in advanced stages of the disease. Here we are presenting a case of chronic osteomyelitis of tibia in a child which masqueraded on initial presentation as tibial hemimelia. **CASE REPORT-**An 8 years old male patient was admitted in our institute with complaint of deformity and shortening of right lower limb since 7 years. As narrated by his mother, birth history was normal. There was history of trauma at the age of 1 year sustaining injury to right lower limb which was managed conservatively. After few days, patient developed swelling and discharging sinus over right leg which was associated with fever. Patient was admitted in some private hospital and diagnosed as acute osteomyelitis for which he was managed with IV antibiotics and was discharged under satisfactory conditions as narrated by parents. However, patient started having progressive deformity and shortening over right leg. There was history of extrusion of bone pieces through sinus. On examination, deformity was present over right leg with 6 cm of shortening, there was scar of healed sinus without any discharge. On x ray right knee with leg AP and LAT view there was complete resorption of middle portion of tibia. **MANAGEMENT-**Patient was managed with fibular osteotomy with Ilizarov external fixator application which was subsequently removed and centralisation of fibula with rush nail was done. Rush nail was also removed after some follow ups as deformity got corrected and there was no difficulty in walking.

**Abstract no.: 33522**

**OPERATIVE TREATMENT OF FRACTURES OF THE SCAPULA**

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Introduction: SF are an increasingly common occurrence at large trauma centers. Objective: To present our results with operative treatment of scapular fractures. Material and Method: For a period of 10 years, 26 patients with 27 scapular fractures have been treated operatively and followed up. 22 fractures were result of high energy trauma – 11 MVA, 9 motorcycle accidents, 2 falls from height. According to Goss classification, fracture spread was: 14 intra-articular (type 1-2, type2-5, type3-1, type4-1, type5- 3, type-6-2) and 13 extra-articular (5 with translation, 7 with an angular dislocation and 1 with a bony “Goss ring” disruption). 11 patients were diagnosed with a floating shoulder – 5(19%) clavicle fractures, 3(11%) proximal humerus fractures, 3 (11%) acromio-clavicular joint dislocation. 22(81% )patients were treated for chest trauma, there were 15(56%) lung contusions, 18(67%) cases of pneumothorax, and same side rib fractures in 17(63%) of the cases. In 21 patients dorsal approach according to Judet were used, 3 with a limited posterior and 3 through a deltopectoral. Results: All fractures healed. There were 10(37%) excellent, 12(45%) good, 3(11%) fair and 2(7%) poor results according to Constance. Complications: In 2(7%) patients screws penetrated GHJ. Prominent plate was found in 2(7%) patients and joint incongruity in 2(7%) cases. Conclusion: Scapular fractures indicated to ORIF in intra-articular fractures with a gap/step of more than 3mm, extra-articular fractures with translation of more than 10mm and angulation exceeding 40deg. or GPA of less than 20deg and in cases of “floating shoulder” and associated upper extremity fracture,

**Abstract no.: 33525**

**ROLE OF TOTAL HIP REPLACEMENT IN ACETABULAR FRACTURES**

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Background: Post-traumatic arthritis is the commonest complication following acetabular fractures needing total hip arthroplasty when the pain limits daily functioning. Multiple factors creating a major challenge during total hip arthroplasty in acetabular fractures include retained implants, bone defects, non-union, impaired musculature, heterotopic ossification, infection and old scarred soft tissues. Methodology: A retrospective study was performed including 14 patients with an average follow up of 1 year 4 months, ranging from 6 months to two years. Various challenges during total hip arthroplasty in acetabular fractures and their management were identified. The outcome was assessed by measuring Harris hip score at 3 months, 6 months and one year. Results: Among 14 patients, 5 had undergone surgery and 9 had been managed conservatively. Nine cases had significantly large bone defects which required structural bone grafting in three cases and impaction bone grafting in six cases. Uncemented acetabular cup component augmented with screws was used in all cases. Femoral component was uncemented in thirteen cases and cemented in one case. All cases were operated more than one year after initial injury except one case in which THR was done 06 weeks after injury. All cases showed excellent outcome except one persistent postoperative infection. Conclusion: For successful total hip arthroplasty in acetabular fractures, detailed pre-operative planning is essential for identifying bone defects and exclude infection through CT scans, bone scans and inflammatory markers. The surgical team requires familiarity with multiple surgical approaches, have access to bone grafts and have availability of multiple implant options.

**Abstract no.: 33526**

**OPEN REDUCTION, FEMORAL SHORTENING VDRO AND ACETABULAR AUGMENTATION FOR SPASTIC DISLOCATED HIP- EARLY RESULTS**

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**Introduction-**The goals of hip surgery in cerebral palsy are to maintain adequate reduction of the femoral head, prevent pain, improve sitting balance and maintain motion and the ambulatory status of the patient. It is now well accepted that soft tissue release, open reduction and femoral shortening were necessary for a stable hip along with some type of pelvic osteotomy. Many types of pelvic osteotomies has been described for femoral head coverage. Decisions for this osteotomies depends upon the fusion of triradiate cartilage. Complications like intraarticular extension of osteotomy have been described from good centers. Achieving adequate acetabular coverage and femoral correction ensures a favourable outcome at surgery. Acetabular augmentation after open reduction provides good coverage and stability. We present our experience along with short term follow up of managing spastic dislocated hip **Methods-**We performed the OPEN REDUCTION, FEMORAL SHORTENING VDRO AND ACETABULAR AUGMENTATION for spastic dislocated hip in one stage in twenty seven children with forty seven hips. There were twenty bilateral and seven unilateral dislocations. There were mean follow up of 48 months. **Results-**The migration percentage reduced from a mean of 70% to 10% post operatively. All the hips except one were stable and caregivers were satisfied with the outcome in the latest follow up.

**Abstract no.: 33527**

**TREATMENT OF ANEURYSMAL BONE CYST WITH ASPIRATION AND BONE MARROW INJECTION IN CHILDREN**

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Background: Aneurysmal bone cysts (ABCs) are benign lesions that are usually treated with intralesional procedures. The clinical behaviour of ABCs is reported to be more aggressive in younger patients, with high recurrence rates after surgical treatment by several authors. The purpose of this study was to review the results of a relatively non-invasive protocol with aspiration of cyst along with osteoinductive autogenic bone marrow injection. Methods: Nine patients confirmed by FNAC as ABCs were taken up for study. The cyst was aspirated completely and aspirated bone marrow from the iliac crest was injected into the cavity. Follow up ranged from 18 to 45 months. Results: Three patients were younger than 5 years, 4 were between 5 and 10 years old, and 2 were older than 10 years. The most frequent location of the lesion was the humerus (5 cases) followed by proximal femur and tibia. Cases were followed in every 6 months and X-ray were taken. A centripetal pattern of bone healing was observed in which an ossification front advanced from the periphery to the centre of the cavity. There was not a single case of recurrence in our series. Conclusions: We conclude that aspiration and autologous bone marrow injection is a simple means of treating ABC. The procedure avoids the morbidity and cost of alternatives of bone grafting.

**Abstract no.: 33528**

**EIGHT PLATE DISTAL ANTERIOR TIBIAL HEMIEPIPHYSIODESIS FOR PREVENTION OF FRACTURE IN ANTERIOR ANGULATION OF TIBIA**

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Introduction- Anterior tibia bowing, medullary canal sclerosis and diaphysial constrictions are conditions known as prefractures that may or may not be associated with congenital pseudoarthrosis of tibia. Congenital anterior bowing of tibia has also been discussed in the literature. Osteotomy to correct the deformity in childhood leads to pseudoarthrosis. (Anderson, JBJS, 1976). Prophylactic bone grafting has been suggested by Llyod-roberts and Saw(1969) to prevent increase in fracture, angulations and pseudoarthrosis. Van Nes(1966) used plasters, protective brace and on lay grafts for weak tibia for same purpose. Curettage and bone grafting has been advocated by Van Nes also. Osteotomy is delayed until the patient is old enough to generate sufficient bone graft and delay leads to fracture. Anterior bowing of tibia predisposes to stress fractures which needs protection. In the skeletally immature patient with angular deformity correction using a less invasive eight plate hemiepiphyodesis is a good option. It restricts growth on one side and permits growth on opposite side. The goal is realignment through growth. Materials and Methods- Seven cases of anterior bowing of tibia treated with hemiepiphyodesis of distal anterior tibia physis. Results- There was significant improvement in all the outcome measures including the correction of mechanical axis of tibia. So, this treatment is an effective means of preventing anterior angulations of tibia leading to fracture.

**Abstract no.: 33537**

**METAL ALLERGY SCREENING PRIOR TO JOINT ARTHROPLASTY. A DELPHI CONSENSUS STUDY AMONGST ORTHOPAEDIC SURGEONS IN THE UNITED KINGDOM**

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Metal allergy screening prior to joint arthroplasty can cause surgical delays and additional costs. This study was undertaken to try and obtain a consensus amongst joint arthroplasty experts with regards to metal allergy screening prior to joint arthroplasty and the choice of implant in patients with potential metal allergy. A web based Delphi consensus study was used including orthopaedic surgeons that had previously published on the topic of hip, knee or shoulder arthroplasty. Two rounds of questionnaires were sent via electronic mail. Consensus was considered if agreement was 60% or higher. 18 surgeons responded to the first and 17 to the second round of questionnaires. There was consensus that patients having metal arthroplasty surgery should not be routinely questioned about metal allergy prior to surgery. There was consensus that patch testing is not necessary even if metal allergy is suspected. Most respondents agreed in proceeding with cobalt chromium or stainless steel implant in patients suspected of metal allergy regardless of the results of cutaneous patch testing. This consensus study suggests that routine metal allergy screening prior to joint arthroplasty is not essential. The use of traditional cobalt chromium/stainless steel implants is recommended regardless of the patient's metal allergy status.



**Abstract no.: 33545**

**CURRENT CONCEPTS IN THE MANAGEMENT OF PERI-PROSTHETIC FUNGAL JOINT INFECTION UTILISING ANTI-MYCOTIC LOADED BONE CEMENT**

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Background: Fungal peri-prosthetic joint infections (PJI) are very rare with a paucity of instructive evidence on successful treatment modalities. Use of antibiotic impregnated bone cement spacers in cases of bacterial PJI is well reported, we review the current literature on the application of anti-mycotic bone cement in fungal PJI. Methods: A literature search of EMBASE (1988-current) and MEDLINE (1966-current) for all reported cases of infected total hip arthroplasty (THA) or total knee arthroplasty (TKA) due to a fungal species was performed. Details of surgical and medical strategy, with specific focus on the role of anti-mycotic cement, were recorded. Outcomes included infection eradication with or without re-implantation at final follow up. Results: We identified 7 cases (2M/5F) of fungal PJI utilising anti-mycotic cement as an essential component of the treatment strategy. Mean patient age of 63.1years (42-75), with 3 THA and 4 TKA, a mean prosthesis age of 75 months and mean duration of symptoms of 17 months. 5(71%) patients had an identifiable risk factor for fungal PJI. Resection arthroplasty performed in all cases, with re-implantation as a single stage procedure in 1 (14%) case, and as a sequenced procedure in 4 (57%) cases. Re-implantation was not attempted in 2 patients. At last follow up, mean 31.9 months (3-84), all cases were infection free. Conclusion: Fungal PJI is extremely rare and experience with successful re-implantation limited. This review highlights the clinical application of anti-mycotic bone cement for infection eradication which should be considered a useful adjunct to current treatment strategies.

**Abstract no.: 33550**

**NEONATAL HIP SCREENING FOR DEVELOPMENTAL HIP DYSPLASIA  
RESULTS OF A SELECTIVE ULTRASOUND SCREENING PROGRAM OVER  
THIRTEEN YEARS**

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Introduction: evaluate incidence of hip dysplasia and efficacy of screening programme of Palmerston north hospital 13 years to other hospital in New Zealand. results:25243 live births,67.9%screened for DDH selective ultrasound referral 3.65%(625),confirmed diagnosis 173 cases 10 babies(0.04%) missed screening late diagnosis, 2(0.01% of those screened) missed diagnosis, incidence of DDH 7.3% harness treatment 10.1 per 1000, success rate 94% operative intervention 0.087%in screened group,5 cases needed open reduction 0.02%, 1 case of avascular necrosis sensitivity 98.9% specificity 97.3%positive predictive value 27.7% Conclusion: our screening program me gives comparable results as other centers in New Zealand and stats consistent with other parts of world.

**Abstract no.: 33554**

**SIMULTANEOUS BILATERAL COMPUTER ASSISTED TOTAL KNEE ARTHROPLASTY: THE EFFECT OF INTRAVENOUS OR INTRAARTICULAR TRANEXAMIC ACID**

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The use of tranexamic acid (TA) in total knee arthroplasty is well documented. However, there is limited evidence to suggest the use of TA in simultaneous bilateral computer assisted total knee arthroplasty (CATKA). We, therefore, studied the effect of TA, in simultaneous bilateral computer assisted total knee arthroplasty, in terms of blood transfusion, routes of administration and complications. We divided 90 patients into three groups. Group I patients received intravenous normal saline alone (IVNS group). Group II received intravenous TA alone (IVTA group). Group III received intraarticular TA alone (IATA group). Our study confirms that there is significant benefit of using TA but no difference between the intravenous or intraarticular routes of administration.

**Abstract no.: 33556**

**THE TIBIAL TUBEROSITY TO TROCHLEAR GROOVE DISTANCE MEASUREMENT IN THE ADULT INDIAN POPULATION**

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Objective: Tibial tuberosity to trochlear groove (TTTG) distance in western population is extensively studied through various modalities such as x rays, computerized tomography and magnetic resonance imaging. However there is very little or no literature support to indicate that TTTG distance has been studied in Indian population. We therefore undertook a study to measure TTTG distance in 100 MRI scans of normal Indian knees. Methods: We studied MRI scans of 100 skeletally mature knees in an Indian population. Patients included were found to have no ligamentous laxity, no patello-femoral instability and no mal-alignment and no osteoarthritis. We measured TTTG distance on the axial MRI slices using free software osirix. Results: In our study we found that the mean TTTG distance for the Indian adult population was  $13.54 \pm 6.22$  mm. The normal value for females was found to be  $14.07 \pm 6.06$  mm and that for male was found to be  $13.34 \pm 6.28$  mm. Conclusions: TTTG distance in Indian population was found to be  $13.54 \pm 6.22$  mm. Also we found that there is no statistically significant difference in the measurements for both sexes.

**Abstract no.: 33557**

**PMMA BONE CEMENTS AND ADDITIVES: A REVIEW OF THE LITERATURE**

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Background: Polymethylmethacrylate (PMMA) bone cement technology has progressed from industrial Plexiglass administration in the 1950's to the recent advent of nanoparticle additives. Additives have been trialed to address problems with modern bone cements such as the loosening of prosthesis, high post-operative infection rates, and inflammatory reduction in interface integrity. Aim: To assess current additives used in PMMA bone cements and offer an insight regarding future directions for this biomaterial. Method: MEDLINE and EMBASE search of the literature (search terms: "Bone cement" AND "Additive" and "PMMA" AND "Additive"). Results/Discussion: Low index (<15%) vitamin E and low index (<5g) antibiotic impregnated additives significantly address infection and inflammatory problems, with only modest reductions in mechanical strength. Chitosan (15% w/w PMMA) and silver (1% w/w PMMA) nanoparticles have strong antibacterial activity with no significant reduction in mechanical strength. Future work on PMMA bone cements should focus on trialing a combination of these additives as they may enhance favourable properties.

**Abstract no.: 33561**

**THE EFFECT OF A SINGLE PASSIVE INTERVENTION TO IMPROVE PATIENT SATISFACTION IN AN ORTHOPAEDIC SERVICE**

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Introduction and aims: Patient satisfaction is a goal of effective health care delivery. Patient education and information has been shown to improve patient satisfaction with care. Our aim was to assess whether providing patients with discharge specific information improves patient satisfaction. Method: Lack of sufficient patient information (specifically related to post-discharge care) was identified in our patient population by means of a broad ranging post-discharge satisfaction survey. Targeted intervention, in the form of a discharge information sheet for patients, was trialled with the aim of improving specific satisfaction parameters related to post-discharge care, and overall patient satisfaction. Patient satisfaction was measured for six months before and after the intervention, and data from both groups compared. Results: Response rates in both non-interventional (Jan-June 2010) and interventional (July-December 2010) group were approximately 40%. Patient satisfaction with respect to specific parameters (“Did you know who to call for help?” and “Were you told about when to commence physiotherapy?”) and overall hospital rating improved in interventional group compared with non-interventional group, however this improvement was not statistically significant ( $P>0.05$ ). Conclusion: Providing patients with discharge-specific information alone at discharge is not sufficient to improve overall or discharge-specific patient satisfaction. More active interventions may be required.

**Abstract no.: 33568**

**RESECTION AND ARTHRODESIS USING EXTRA LONG INTRA-MEDULLARY NAIL FOR GIANT CELL TUMOURS AROUND KNEE**

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Introduction: Giant cell tumours of bone are aggressive benign tumours occurring at the epiphysis most commonly affecting people between 15 to 35 years of age. The mode of management of Grade I and majority of grade II lesions (Campanacci Radiological Grading) is by curettage. For recurrent, biologically more aggressive and extensive tumours wide resection is needed. Most of the involved population being young and middle aged adults with a normal life expectancy; arthrodesis is an acceptable option for reconstruction. Method: Thirty-five consecutive patients with grade III Giant cell tumour around the knee were selected for the study. The study group included 16 males and 19 females with a mean age of 32 years (range 20-55 years). 20 of these patients had GCT (Giant cell tumour) of the distal Femur, the rest of proximal Tibia. Limb shortening was required to be done in 5 of these patients; the remaining 30 were treated with arthrodesis using an extra-long Küntscher's nail for fixation. Results: Using this technique fusion was achieved in 94% of the patients treated. Local recurrence was observed in only two of the patients. Two patients underwent re-surgery for non-union/ graft fracture with implant breakage. Conclusion: Resection of the tumour with arthrodesis using an extra-long Küntscher's nail is a biological, cost-effective and long lasting mode of treatment of Giant cell tumours around the knee with lesser complications. This procedure is of special significance in developing countries where the cost of treatment is the prime concern of the patients.

**Abstract no.: 33574**

**MANAGEMENT OF CONGENITAL VERTICAL TALUS**

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Congenital vertical talus is the rare condition & produces a rocker-bottom deformity of the foot. The term vertical talus should be reserved for feet with fixed equinus of the calcaneus and dorsal dislocation of the navicular on the talus. For the condition is teratologic dorsolateral dislocation of the talocalcaneonavicular joint. The first description was by henken in 1914. Vertical talus may be present alone but more commonly is accompanied by other neuromuscular conditions. It is most often present in association with myelomeningocele and arthrogyriposis. A less severe manifestation of the deformity has been called the oblique talus. The clinical and radiographic difference between the conditions is that in a severe flatfoot, the calcaneus can be easily dorsiflexed and there is no fixed dislocation of the navicular bone. In some cases we observed that vertical talus is associated with vascular abnormality like posterior tibial artery is deficient. We have studied 20 cases of congenital vertical talus from different age group from 2006 to 2010 with follow up to 2 yrs. we preferred one stage surgical release & evaluated various technical problems, ways to overcome these problems & various merits & demerits of operative method.



**Abstract no.: 33575**

**PERCUTANEOUS SUBTROCHANTERIC OSTEOTOMY IN  
DEVELOPMENTAL COXA VARA**

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Developmental Coxa Vara (DCV) is associated with triplanar deformity of the proximal femur. Several of proximal femur osteotomy techniques have being cited in the literature, with variable outcomes. We have used a percutaneous technique with application of a low-profile Ilizarov external fixator for correction of DCV. Thirty children (16 males, 14 females) (33 affected hips) at an average age of 7.2 years, with DCV and a preoperative H-E angle of 60 degrees or greater on coronal radio-graphs were enrolled. We performed percutaneous primary subtrochanteric valgus derotation osteotomy for 29 patients and open re-osteotomy for one patient (one hip), who presented with a recurrent deformity, who had undergone an open proximal femoral valgus osteotomy 1 year earlier at another institution. The average improvement in Hilgenreiner's epiphyseal angle was from 70.6 degrees before surgery to 40.6 degrees after surgery, the neck–shaft angle improved from 87.5 degrees to 127.2 degrees, and the articulo-trochanteric distance improved from -9.13 mm to +9.16 mm. Latest follow-up at a mean of 20.8 months after surgery showed satisfactory healing with no significant loss of correction in any case. Benefits of this technique include avoidance of large open exposure, decreased blood loss and risk of deep infection, achieving an accurate and sustained correction of the triplanar deformity and early mobilization with a short hospital stay. Drawbacks to this technique include a need to be familiar with the use of the Ilizarov fixator, the long duration and inconvenience of wearing the external fixator and the possibility of pin drainage.

**Abstract no.: 33577**

**MALE OSTEOPOROSIS, UNDER DIAGNOSED AND UNDER TREATED**

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Introduction and objectives: There is a great lack of awareness among men about osteoporosis, and treatment is not as well codified as in women. The aim of this study was to evaluate referrals of male patients to Densitometry Unit in a University Hospital in Southern Lebanon. Materials and methods: Records of 321 men from different cities all over Lebanon were assessed. A questionnaire including age, height, systemic illness and current medications, long term use of steroids, smoking habit, physical activity, family history of osteoporosis, and fracture history were completed as well as reason for submission to DXA study. BMD results of spine (L1-L4), Femur (neck and total) and forearm (33%) were documented on paper forms (questionnaires) as well as on SPSS -17 software program. Results: The total male referral made up 4.6% (321/7002) for the period 1997-2010. Mean age of patients was 66.4 years with a mean BMI of 27.03. The most common reason for performing the DXA study was Check-up (48.6%) and bone pain and myalgia in 43.9%. Mean bone densities of lumbar spine (L1-L4), femur (total), femur (neck) and forearm (33%) were indicative of osteopenia. Conclusion: Our study showed a low referral rate of males for DXA study and this suggests that osteoporosis is still viewed as a disease of females. Mean low bone densities in males are to be seriously considered. We call for greater attention to be paid to the risk factors in males before the admission for a fracture. So male osteoporosis would be timely diagnosed and timely treated

**Abstract no.: 33581**

**PROSPECTIVE COMPARISONS OF FEMORAL TUNNEL ENLARGEMENT  
IN THREE DIFFERENT POSTOPERATIVE IMMOBILIZATION PERIODS  
AFTER DOUBLE-BUNDLE ANTERIOR CRUCIATE LIGAMENT  
RECONSTRUCTION WITH HAMSTRING GRAFTS**

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**Purpose:** The purpose of this study was to determine the relation between femoral bone tunnel enlargement and postoperative immobilization periods after double-bundle ACL reconstruction with hamstring grafts. **Methods:** Fifty-one patients who undergoing ACL reconstruction were divided into 3 different postoperative protocol groups: two days immobilization with the knee in 20 degree of flexion as group A (n=18), 1 week immobilization as group B (n=17), and 2 weeks immobilization as group C (n=16). Bone tunnel enlargement was determined by computed digital radiographs which were performed on the first postoperative day and at 12 months in the A-P and lateral views. To determine the incidence of tunnel enlargement, a percentage diameter change of more and less than 10% as an enlarged and a reduced tunnel, respectively, according to Kawaguchi. **Results:** In group A, the incidence of femoral anteromedial (AM) tunnel enlargement was 14/18 (77.8%) in AP view and 12/18 (66.7%) in lateral. And posteolateral (PL) tunnel enlargement was 13/18 (72.2%) and 12/18 (66.7%), respectively. In group B, the incidence of AM tunnel enlargement was 9/17 (52.9%) in AP, and 10/17 (58.8%) in lateral. PL tunnel enlargement was 9/17 (52.9%) in AP, and 10/17 (58.8%) in lateral. In group C, the incidence of AM tunnel enlargement was 9/16 (56.3%) in AP and 10/16 (62.5%) in lateral. PL tunnel enlargement was 9/16 (56.3%) both in AP and lateral. **Conclusion:** This study showed that ACL reconstruction with hamstring grafts contain the risk of postoperative femoral bone tunnel enlargement in spite of different postoperative immobilization periods.

**Abstract no.: 33582**

**MANAGEMENT OF BILATERAL SUBTROCHANTERIC FRACTURE IN A SEVEN YEAR OLD PATIENT WITH OSTEOPETROSIS: A CASE REPORT**

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Osteopetrosis is a rare metabolic disorder where there is diminished bone resorption due to decreased osteoclasts function. We report a rare case of bilateral sub trochanteric fracture in a seven year old girl with infantile Osteopetrosis. She had a displaced fracture on right side following trivial fall which was treated by ORIF. The patient had stress fracture on left side 18 months later. This was treated initially with hip spica for 3 months but the fracture got displaced for which ORIF was done. At 2 year follow up both the fractures have united with good functional outcome.

**Abstract no.: 33585**

**SHOULDER INJURIES IN SPORTSMAN AND TREATMENT**

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Introduction: Many handball, volleyball, tennis players, swimmers and other sportsman injured his shoulders. Because of that a lot of them must stopped they professional career. Methods: During five years (2008-2012) we have 435 patient with shoulder injuries (subluxation and dislocation;tendons injuries/biceps, subscapularis, pectoralis;/ rotator cuff injuries; SLAP laesions; impingement syndrome; AC injuries; cartilage problems; tendopathy; subacromial bursitis;n.suprascapularis problems. We perform arthroscopic stabilisation, tenodesi s,RC repiar, subacromial arthroscopic decompression; AC stabilisation; SLAP repair ;cartilage debridement; suprascapularis release and other procedure.Results:7% of the sportsman must stop professional career because of the injuries,11% continued with sports ,but not at same level as before, rest of them continued their professional sports life.

**Abstract no.: 33586**

**OSTEOPOROSIS IN PATIENTS WITH NEUROLOGICAL IMPAIRMENTS**

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Osteoporosis in patients with neurological impairments Aim: Osteoporosis and resulting spontaneous fractures in patients with neurological impairments living outside institutions have not received much attention. The aim of this study was to determine the degree of demineralization in patients with such disabilities living in South Lebanon, an under privileged region. Subjects and Methods: We reviewed 100 patients attending outpatient clinics in a referral rehabilitation center in South Lebanon. Patients mean age was 36.23 (5-82 years) and their impairment ranged from paraplegia, hemiplegia to spastic palsy and polio. All patients underwent CUS measurements, serum Vitamin D testing and calculation of daily dietary calcium intake. Results: We observed bone loss in almost all patients; their mean serum vitamin D level was 20.19ng/ml while their mean daily calcium intake was 318.77mg/day. Conclusion: Patients with neurological disabilities are superfast bone loser population and this could lead to high fracture rate, their management should include supplementation with calcium and Vitamin D and nutritional intervention to improve dietary calcium intake and malnutrition as well as intensive rehabilitation programs that include standing using various devices and walking with orthotics for weight bearing the skeleton.

**Abstract no.: 33594**

**ANTHROPOMETRIC MEASUREMENTS OF KNEE JOINT IN INDIAN POPULATION: CO-RELATION WITH CURRENT KNEE ARTHROPLASTY SYSTEMS**

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The objective was to analyse the anthropometric data in Indian knees and to co-relate them with existing knee arthroplasty systems. MRI scans of 25 patients (15 males & 10 females) who underwent bilateral knee scans for ligament injuries were collected. Patients with arthritis, bone loss, varus/valgus deformity of >15 degrees and those with immature skeleton were excluded. The mean age was 32 yrs (18-53 yrs). Three surgeons independently measured medio-lateral (ML), antero-posterior (AP) dimensions & aspect ratio (AR) of distal femur, proximal tibia and unresected patellar thickness (PT) on three occasions one week apart to account for intra & inter-observer variability. The resultant data of 50 knees was analysed using SPSS v14.0 and compared with five prosthesis knee systems (PFC sigma, NexGen, Scorpio, IB-II & Gender specific knee). The mean ML & AP for proximal tibia was  $73.3 \pm 5.3$  &  $47.8 \pm 4.3$  mm. The mean ML & AP (lateral condyle) for distal femur was  $74.3 \pm 5.9$  &  $65.4 \pm 5.0$  mm. The ML & AP showed a statistically significant positive correlation with the height of the person (ML  $r=0.55$ ; AP  $r=0.50$  &  $p=0.01$ ). The tibial and femoral AR showed higher ratio for smaller knees & smaller ratio for larger knees i.e. decline in AR for increasing AP dimension. None of the prosthesis designs mimicked this decrease in AR and NexGen prosthesis infact showed an increase in AR. Most of the available TKR prosthesis designs differ from actual knee morphometry of Indian population. These data provides the basis for designing optimal prosthesis for people of Indian/Asian origin.

**Abstract no.: 33603**

**METAL ON METAL HIP DISASTER: LESSONS FROM SEARCH AND RESCUE OPERATIONS**

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Revision surgeries involves meticulous preoperative planning, optimizing patient's medical condition for a major surgery, expertise and experience in the surgical procedure, special instruments and diligent postoperative care. Metal on Metal hips have unique MRI findings, Metal Ion levels and clinical findings and appropriate interpretation of these help decide whether the patient requires a revision surgery or not and also plan the surgical intervention. In this study we describe trips, tricks and traps of the surgical procedure from our experience from revision of metal on metal revision hip cases. Technique description involving the appropriate exposure method, technique of removal of components, use of specialized instruments, thorough debridement, choice of revision prosthesis and optimal soft tissue management and closure preferences. There is increasing evidence that certain metal-on-metal hip arthroplasties may fail early from novel mechanisms of failure in addition to the conventional mechanisms well described for all bearing surfaces. We believe that our experience from this large series will help gain insight and plan preoperatively the revision surgeries for metal on metal hip replacement which are currently increasing on a year to year basis.



**Abstract no.: 33605**

**EARLY EXPERIENCE OF NCB (NON-CONTACT BRIDGING) PERIPROSTHETIC PLATE IN COMPLEX PERIPROSTHETIC FRACTURES OF TOTAL HIP REPLACEMENT (THR) AND TOTAL KNEE REPLACEMENT (TKR)**

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Aaron NG

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Introduction: To assess the functional outcome and early experience of second generation polyaxial locking plates (Zimmer NCB) in periprosthetic fractures of THR and TKR without cortical strut graft. Methods: A review of ten cases of peri/interprosthetic fractures treated with Zimmer NCB periprosthetic plate. Clinical notes and radiographic evaluation were reviewed to ascertain patient functional outcome. Results: This was a prospective study. Patient demographics were as follows: 9 female, 2 male; mean age 80.7 years (range 70 – 88); THR (n=9), hemiarthroplasty of the hip (n=1), gamma nail (n=1), TKR (n=3); Vancouver classification C (n=5), Vancouver classification B2 (n= 2), Vancouver classification B1 (n=3), Lewis and Rorabeck classification II (n= 1); Interprosthetic fracture (n=3), Periprosthetic fracture n=8; Mean follow up was 4.2 months (n=11, range =1-10 months). All eleven patients demonstrated clinical and radiological union of fractures between six and ten weeks and all made a return to full weight bearing. There were no cases of infection, mal or non-union. No other complications were noted. All patients were extremely satisfied with their clinical outcome. Conclusions: Our case series demonstrates excellent outcome when using this relatively new plates. The plates have the advantage of polyaxial locking mechanism with angular stability of locking plates

**Abstract no.: 33606**

**ACROMIOCLAVICULAR JOINT INJURIES: MINI OPEN VERSUS ARTHROSCOPIC TECHNIQUE**

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Acromioclavicular joint injuries represent nearly half of all athletic shoulder injuries, often resulting from a fall onto the tip of the shoulder with the arm in adduction. Stability of this joint depends on the integrity of the acromioclavicular ligaments and capsule as well as the coracoclavicular ligaments and the trapezius and deltoid muscles. Along with clinical examination for tenderness and instability, radiographic examination is critical in the evaluation of acromioclavicular joint injuries. Nonsurgical treatment is indicated for type I and II injuries; surgery is almost always recommended for type IV, V, and VI injuries. Management of type III injuries remains controversial, with nonsurgical treatment favoured in most instances and reconstruction of the acromioclavicular joint reserved for symptomatic instability. Recommended techniques for stabilization in cases of acute and late symptomatic instability include screw fixation of the coracoid process to the clavicle, coracoacromial ligament transfer, and coracoclavicular ligament reconstruction. Bio mechanical studies have demonstrated that anatomic acromioclavicular joint reconstruction is the most effective treatment for persistent instability. In this study we are comparing arthroscopic and mini open techniques for anatomical reconstruction of the coracoacromial ligaments.

**Abstract no.: 33607**

**ALTERATION IN THE ORIENTATION OF THE LOWER EXTREMITY AXES FOLLOWING VALGUS INTERTROCHANTERIC OSTEOTOMY IN UNUNNITED NECK FEMUR FRACTURE : QUANTIFICATION AND IMPLICATION , A PILOT STUDY**

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Background: Fracture neck of femur is one of the age old traumatic conditions for which numerous options are in practice. Modified Pauwels intertrochanteric osteotomy is one the promising options for old neck femur fracture in young adults that deserves special mention. A lot of studies and research works have already been published in well-known journals depicting the relevance of modified Pauwels osteotomy in this regard but no work has yet been undertaken that shows the alterations of the mechanical and anatomical axes of lower limbs and their relationships following valgus intertrochanteric osteotomy. Ours is a pilot project in this area .Patients and methods: In a retrospective analysis of 20 patients who earlier had undergone Modified Pauwels Intertrochanteric Osteotomy (MPIO) in united neck femur fractures, we tried to evaluate the alterations of the mechanical and anatomical axes from a standing scanogram. Results: Mechanical axis shifted to the centre of the joint, angle between anatomical and mechanical axes of femur decreased, mechanical tibio-femoral angle decreased, neck-shaft angle increased on the operated side and mechanical lateral distal femoral angle (mLDFA) decreased. Conclusion: Follow up patients of MPIO after the union of fracture neck femur often present in the OPD with pain in the knee joint and early degenerative changes of the knee joint. Study of alterations of lower limb axes following valgus osteotomy would give a possible explanation behind this issue. Keywords: Modified Pauwels osteotomy, mechanical and anatomical axes of lower limbs

**Abstract no.: 33609**

**MANAGEMENT OF NECROTIZING FASCIITIS: A 5-YEAR REVIEW**

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Introduction: Necrotizing fasciitis (NF) is an uncommon soft tissue infection. If it would take time to diagnose it, it would be widespread early and the patient would die. We reported our results that we would manage necrotizing fasciitis. Method: We researched 10 patients (8 males and 2 females), age was 61 years (32 – 79 years) from 2006 to 2011. They stay for 88 days (4 - 245). At admission, the score of SOFA is 2.9 (0-12), the score of APACHE 2 is 7 (3-30), the score of LRINEC is 7.4 (2-13). The dominant flora was streptococcus pyogenes (6 patients), streptococcus agalactiae (one patient), staphylococcus aureus (one patient), streptococcus viridans (one patient), bacteroides spp(2 patients). Surgical treatment was performed within 6 hours after admission without patient who refused surgical operation. Results: One patient who refused to be performed surgical treatment died. But 9 patients are alive and leave hospital with walk, only one patient was cut his leg. It's important that early diagnosis of microorganism, medication of right kind and quantity, early debridement of exact range. I thought that it is useful of quick kit diagnosed by group A streptococcus and MRI.

**Abstract no.: 33611**

**A RAPID METHOD OF BONE GRAFT HARVESTING TECHNIQUE FROM PROXIMAL TIBIA**

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**Introduction:** Although iliac crest is the commonest donor site, many agree that it has few limitations ranging from minor haematomas to major complications. Here is a simple way of procuring moderate amounts of graft from proximal lateral tibia which is easy, rapid and almost has no donor site problems. **Material & Methods:** 128 cases of fresh and neglected fractures of upper and lower limbs of age group 21 - 65 years, between February 2009 and January 2013 were included in the study. A common surgical technique through a small oblique skin incision made at proximal lateral tibia just distal to Gerdy's tubercle, was followed by all the surgeons of our department. Moderate amounts of cancellous bone along with a couple of cortical lids were procured as needed using a hollow mill & a long curette. Tourniquet was not used. C arm was used occasionally in very obese individuals so as not to breach the articular surface. All patients were allowed to bear full weight on the donor limb. The total time taken from skin-to-skin was not more than 15 minutes. **Results:** A couple of cases had thin serous discharge that settled with local dressings. Five patients had pain at donor site for more than two weeks that took a month time to subside completely on its own. None had deep sepsis, neurovascular injury, restricted knee movements or fractures. **Conclusions:** Being simple, safe & rapid technique, proximal tibia can be a good option for bone graft procurement.

**Abstract no.: 33612**

**MANAGEMENT OF FRACTURES OF THORACO LUMBAR SPINE WITH PEDICLE SCREW FIXATION**

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In this study, we stabilize the cases of the unstable thoracolumbar spine injuries with decompression and pedicular screw & rod instrumentation. Steffee plates are the prototypes of the pedicle screw systems that have gained much popularity in recent times. We have evaluated all patients for maintenance of spinal correction and neurological improvement after posterior instrumentation in thoracic and lumbar spinal fractures and clinical outcome in terms of spinal scoring system called as Denis work and pain scale. This is a prospective study was undertaken in the Department of Orthopedics in CG and Bapuji Hospitals attached to JJM Medical College, Davanagere. Twenty adult patients with acute thoracolumbar injuries who gave the consent for surgery admitted during the study period were included as study sample. Patient selection was according to the inclusion and exclusion criteria and were surgically treated with pedicle screw and rod system (ZETA). The findings of this study show that pedicle screw-rod instrumentation is an excellent implant system used in treatment of vertebral fractures. There is a very high statistical significant restoration of vertebral body height, mean regional angle and mean anterior wedge angle with this procedure in thoracolumbar fractures. Neurological recovery was seen significantly when all cases with neurological deficits were clubbed together.

**Abstract no.: 33613**

**COMPARATIVE STUDY OF PERITROCHANTERIC FRACTURES TREATED WITH PROXIMAL FEMORAL NAIL INTRAMEDULLARY FIXATION DEVICE VERSES DYNAMIC COMPRESSION SCREW WITH EXTRAMEDULLARY DEVICE**

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**OBJECTIVES:** The objective of this study is to compare the results of proximal femoral nail intramedullary fixation device verses dynamic compression screw with extramedullary device in the treatment of peritrochanteric fractures. **METHODOLOGY** A prospective study from february2011 to August2013, including 50 patients with intertrochanteric fractures. In group I 25 patients were treated with long proximal femoral nail intramedullary fixation and Group II 25 patients treated with dynamic hip screw with extramedullary device for peritrochanteric fractures. Clinical assessments regarding pain and function, radiological assessment were undertaken at the final follow-up. **RESULTS** Fracture healing was observed at an average of 6 weeks in Group I and 7 weeks with Group II. Excellent and good results were obtained in GroupI with 88%, fair in 12 % .We had no case with poor results. In Group II, 80% showed excellent and good, 16% with fair and 4% with poor results. **CONCLUSION** From this sample study, we consider that PFN is an excellent implant for the treatment of peritrochanteric fractures. The terms of successful outcome include a good understanding of fracture biomechanics, proper patient selection, good preoperative planning, accurate instrumentation, good image intensifier.

**Abstract no.: 33614**

**COMPARATIVE STUDY OF FRACTURE SHAFT OF FEMUR IN CHILDREN AND ADOLESCENTS TREATED WITH ENDERS NAIL AND FLEXIBLE NAIL**

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**Objectives** To compare the functional outcome, duration of union and complications following the use of enders nail vs flexible nail in femoral shaft fractures in children and adolescents **Methodology:** A prospective study was done from march2011 to august 2012, including 40 patients with femur fractures between age group of 5-16 years. In group I, 20 patients were subjected to closed reduction and internal fixation with enders nails. In group II, 20 patients were managed by titanium and stainless steel flexible nails. Clinical assessments regarding pain and function, radiological assessment were undertaken at the final follow up. **Conclusion:** From this sample of study, we consider that Flexible nail is a good implant for the treatment of femur fractures in children and adolescents. The terms of successful outcome include a good understanding of fracture biomechanics, proper patient selection, good preoperative planning, accurate instrumentation, good image intensifier. The present study could not prove the superiority of flexible nail over ender nail. It is the proper application of the principles of nailing and not the type of nail which decides the outcome. Further long-term multicentric study is required to prove behaviours of the implant.



**Abstract no.: 33618**

**INTRA-ARTICULAR OSTEOTOMY FOR MALUNITING MEDIAL TIBIAL PLATEAU FRACTURE - A CASE REPORT**

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Background: Medial tibial plateau fractures are notorious even if they look undisplaced as most of them fail into varus once weight bearing is initiated. Hence, early fixation with a strong buttress plate is indicated. However, it is not uncommon to see them after 10-12 weeks where the fracture site is still tender. Open & closed wedge osteotomies are quite popular for malunited fractures. Here we present a technique of intra-articular osteotomy for maluniting fractures. Material & method: A 42 yr old man, had a motor vehicle accident, resulting in an isolated medial tibial plateau fracture which was dealt initially with POP for 10 weeks. Soon after weight bearing, the knee started drifting into varus with pain and had restricted range of motion. He was operated by an intra-articular osteotomy, where the previous fracture plane was hinged opened from anteromedial margin to the joint level using a power saw and was supported by a tricortical iliac crest graft & a 4.5 T – buttress plate. He was kept on knee physio with non-weight bearing walking for 8 weeks and then progressed to full weight bearing in 12 weeks. Results: He achieved full knee ROM in about 3 weeks time and the fracture united in 4 months. Conclusions: Intra-articular osteotomy is a good technique of correcting varus without compromising the leg length.

**Abstract no.: 33620**

**KLIPPEL TRENAUNAY WEBER SYNDROME- A CLASSICAL NEGLECTED CASE**

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Introduction: This congenital vascular disorder is described by a “triad” of symptoms affecting one or more limbs. The “triad” consists of varicose veins, cutaneous hemangioma, with bone and soft tissue hypertrophy. Usually, the cutaneous hemangioma presents as a substantial port-wine stain or nevus. Varicose veins are often very numerous. The bone and soft tissue hypertrophy is variable in presentation and the affected limb may be either larger or smaller than the normal limb. This disorder is generally reported in childhood or adolescent age groups. Case Report: A 30 year old man reported to us with the classical triad. On having clinical suspicion he was radiologically assessed. We herein present a neglected case of Klippel Trenaunay Syndrome with all the classical clinical and radiological findings. On clinical examination a substantial Port wine stain was seen and radiographs showed multiple bony outgrowths whereas Magnetic resonance imaging findings were multiple varicosities displaying heterogeneous hyper intense signals on T2 Weighted Images and T1 hypo intensity with hypertrophy of soft tissue in left lower limb.

**Abstract no.: 33626**

**EXPERIMENTAL POSTEROLATERAL SPINAL FUSION USING  
HYDROXYAPATITE MIXED WITH AUTOLOGUS BONE MARROW  
ASPIRATE AS A COMPOSITE GRAFT**

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Introduction: Bone graft substitutes have been investigated for several years. It has been shown that ceramic osteoconductive materials alone do not give rate of fusion which is comparable to that of autologous bone graft. We analysed the effectiveness of hydroxyapatite mixed with bone marrow aspirate as a composite graft for lumbar spinal fusion. Methods: Posterolateral spinal fusion was performed at L4/L5 level in 40 adult rabbits. The animals were randomly allocated to receive one of the following graft materials; group I: hydroxyapatite granules plus fresh autologous bone marrow aspirate; group II: hydroxyapatite plus fresh autologous bone graft; group III: hydroxyapatite and group IV: autologous bone graft. The fusion was assessed by radiology, manual palpation test and histology in 50% animals at the end of 8 weeks and remaining 50% at 24 weeks follow up. Results: It was concluded that group II is superior to all the other groups and was closely followed by group I.

**Abstract no.: 33630**

**REVERSE TOTAL SHOULDER ARTHROPLASTY: A PROSPECTIVE FUNCTIONAL ASSESSMENT STUDY OF 63 CONSECUTIVE PATIENTS OPERATED IN A DISTRICT GENERAL HOSPITAL**

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**Introduction** Reverse geometry shoulder replacement (RGSR) indications have extended in elderly for painful irreparable cuff deficiency without arthropathy. We report 63 patients who underwent RGSR in district general hospital (DGH). **Methods** 63 patients underwent RGSR were functionally evaluated prospectively at 6 weeks, 6 months, 1 year and yearly thereafter. 18 males, 45 females. Average age was 81 years (68-94 yrs). Commonest prosthesis used was Delta III in 51 patients ( 81 %) patients. 19 patients had cuff tear arthropathy on pre-operative Xrays, 38 had no arthritic changes but had severe proximal migration of humerus and remaining had clinical findings of irreparable rotator cuff tear. **Results** In 63 patients evaluated at 6 weeks, mean postoperative Oxford functional scores improved from preoperative score of 16 (8-27) to 22 ( 9-31 ) ( $p < 0.05$  ). At 6 months and one, 2, 3 and 4 years, the scores improved to 32, 35, 38, 38, and 41 respectively. 6 patients had superficial wound complications treated without further surgery. 1 dislocation within 5 days of initial operation was revised by changing high mobility liner to a standard one. **Conclusion** RGSR in patients with cuff tear arthropathy and irreparable rotator cuff tears in patients aged above 65 years gives good functional results at 4 years follow-up. The improvement in functional scores in 6 weeks post-surgery is more marked and although the improvement continues up to the 4 years follow-up, it tends to taper off and is less marked in successive years.

**Abstract no.: 33632**

**ROTATIONAL DISLOCATION OF TUBERCULAR SPINE - A CASE REPORT**

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Introduction: infected complete translation (rotational dislocation) of vertebrae is very unusual. We present such a case who had kyphotic deformity at DL junction. Materials and methods: A 9 years old female presented with back pain since last 9 months inability to sit/stand for a long duration and low grade fever. There was no n/o trauma. Constitutional symptoms were present. She was referred from primary centre. Local examination revealed kyphotic deformity at low back region L1- L3. There was no normal deficit. She had relative lymphocytosis and her --- was 49 mm. plain x-rays revealed translation of VB L1 or L2. There was art wedge collapse of L2 VB. The distal spine at level of L1 L2 in AP was completely translated on (R) side. MRI revealed wedging of L2 VB, subluxation of L1 and L3 with articular incongruity at facet joints. Pre and para vertebral collection aciniro radiological diagnosis of Potts spine with translation of vertebrae L 1 our L2 L3 was made. Results: Posterior stabilization with pedicle screws with dislocation with postero lateral bone grafts was done. Post operatively patient showed good recovery with cosmetic correction of deformity and there was no nural deficit. Histology proved to be consistent with tuberculosis. Conclusion: the infected translation of vertebrae is not reported in literature. The treatment and result of our case is described.

**Abstract no.: 33633**

**EARLY MOBILITY FOLLOWING HIP FRACTURE SURGERY WITH FURLONG BIPOLAR HEMIARTHROPLASTY- CEMENTED VERSUS HA COATED UNCEMENTED PROSTHESES**

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Introduction: Early discharge from the hospital should be the aim of treatment in patients with neck of femur fractures. Poor mobility is one of the major factors for prolonged hospital stay and need of support at discharge. Objectives: The aim of our study was to compare results of cemented versus uncemented HA coated bipolar Furlong prostheses in terms of early mobility, length of hospital stay and requirement of support at discharge. Methods: We compared two groups of patients who had either cemented or hydroxyapatite (HA) coated uncemented hemiarthroplasty. The groups were matched for their age, sex, pre-fracture mobility, type of anaesthesia and accommodation prior to injury. The mobility levels prior to the fracture were recorded with mobility scoring system proposed by Parker et al. Their early post-operative (day1-day7) mobility was assessed based on their walking distance, need for support and pain level. We also compared the length of hospital stay and discharge destinations. Results: Each group had 22 patients. The average age was 84 years (range, 74-95). The average pre-fracture mobility score was 5.5. The average post-operative mobility for cemented group was 2.7 at day 1 and 6.3 at day 7. For the uncemented group the average post-operative mobility at day 1 was 3.7 and at day 7, it was 6.9. The hospital stay was slightly longer in the cemented group. Conclusion: We conclude that early post-operative mobility is slightly better in patients who had HA coated uncemented implants. Probably that is reason for short hospital stay in this group

**Abstract no.: 33637**

**ROLE OF INTRA-VENOUS AND INTRA-ARTICULAR TRANEXAMIC ACID IN SINGLE STAGED BILATERAL TOTAL KNEE ARTHROPLASTY: A RETROSPECTIVE STUDY**

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Background: Tranexamic acid (TA) reducing blood loss and red cell transfusions in patients undergoing unilateral total knee arthroplasty (TKA) is well documented in the literature. However, there is not much evidence comparing the role of TA in its various routes of application in patients undergoing a single staged bilateral TKA. Thus, we aimed at comparing role of intra-venous and intra-articular use of TA in our patients undergoing a single staged bilateral TKA. Materials and Methods: We carried out a retrospective study of 89 patients undergoing single staged bilateral TKA from February 2008 to December 2011. We divided the patients into three groups; group I included patients receiving intra-venous TA (IVTA), group II included patients receiving IVTA along with intra-articular TA (IATA) and group III included patients who received no administration of TA. Results: On comparing the variables, group II which received both IVTA and IATA turned out to have statistically significant low fall in Hb, decreased requirements of blood transfusion and reduced length of stay, leading to a speedy recovery from the surgery. Conclusion: TA administered in patients undergoing single staged bilateral TKA helped reduce total blood loss and decreased allogenic blood transfusion requirements. This might be particularly relevant, where facilities such as autologous reinfusion might not be available. This study has definitely helped us change our clinical practice.

**Abstract no.: 33638**

**CLINICAL OUTCOME OF SURGICAL MANAGEMENT OF METAPHYSEAL FRACTURES OF DISTAL THIRD OF TIBIA WITH LOCKING COMPRESSION PLATE USING MIPPO TECHNIQUE**

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**Objective:** Our objective was to evaluate clinical results and outcomes of the metaphyseal distal tibia treated using the minimally invasive plating concept. **Intervention:** Minimally invasive medial plating using hybridlocking (MIPPO). **Main Outcome Measurement:** Fractures after fixation were evaluated for post-operative healing, fracture union, ankle and foot function and complications using Olerud and Molander's ankle rating scale. **Patients & materials:** Twenty three consecutive patients were prospectively reviewed. Sixteen male and seven female patients with closed tibial metaphyseal fractures were included in the study. Mean age of 41 years included. All fractures were manually reduced under image intensifier control and fixed using medial locking compression plate with MIPPO technique. AO 43A , 43B , 43C types were included. **Results:** Twenty three patients were followed an average of 12 months ( range 6-20 months ) with mean fracture healing time was 24 weeks ( 12-60 weeks). One patient had delayed union which took 7 months. Two patients developed superficial infection but fractures united completely. **Discussion:** Minimally invasive medial plating will restore limb alignment and yield successful clinical outcomes for high-energy metaphyseal fractures of the distal tibia. Despite the significant reoperation rate and prolonged time to union, most patients can expect a predictable return of function. Early mobilization without risk of secondary displacement helps to prevent stiffness and contracture. **Key words:** Minimally invasive per cutaneous plate osteosynthes (MIPPO), locking compression plate, and distal third tibial metaphysis.



**Abstract no.: 33639**

**-NON-UNION INTERTROCHANTER FRACTURE MANAGED WITH CEMENTED MODULAR BIPOLAR PROSTHESIS**

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Non-union of intertrochanteric fractures is uncommon because there is excellent blood supply and good cancellous bone in the intertrochanteric region of the femur. A diagnosis of primary intertrochanteric non-union is made when at least 15 weeks after the fracture there is radiological evidence of a fracture line, with either no callus or with callus that does not bridge the fracture site. In the elderly, hip arthroplasty is the preferred treatment for intertrochanteric non-union with damaged articular surface, or inadequate bone stock, but in the physiologically young with good bone quality preservation of the femoral head is preferred. Osteopenic bone, however, may not secure internal fixation device when a deficient medial cortical buttress exists caused by loss of the lesser trochanter. Unfortunately, the medial displacement and valgus upper femoral osteotomies, used to stabilize intertrochanteric fracture fixation, require patient cooperation in following a partial weight bearing protocol after surgery with unstable intertrochanteric hip fractures, internal fixation usually achieves a satisfactory initial fracture site reduction, but the fracture may collapse into varus during weight bearing, especially in osteopenic individuals. When instability is a potential problem and patient must adhere to a prolonged postoperative regimen of limited weight bearing until union of the fracture. Prosthetic arthroplasty reduces the risk of both fracture site non-union and avascular necrosis of femoral head. Additionally, a hip prosthesis allows early full weight bearing and thereby expedites the patient's return to preinjury functional level. The bipolar design may permit conversion to a total hip arthroplasty without removal of femoral component, and reduce the risk of acetabular cartilage damage.

**Abstract no.: 33642**

**PERCUTANEOUS VERTEBROPLASTY FOR COMPRESSION FRACTURES IN OUR OWN POPULATION: OBSERVATIONS, RECOMMENDATIONS AND AN OUTCOME GRADING SYSTEM**

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Osteoporotic vertebral compression fractures are a leading cause of disability and morbidity in the elderly. We evaluated the outcome of percutaneous Vertebroplasty in osteoporotic vertebral compression fractures. 25 patients (30 fractured vertebrae) of compression fractures without any neurological deficit were included in the analysis. All patients were treated with percutaneous Vertebroplasty with radiopaque bone cement (opacity+). The patients were evaluated by the Oswestry Disability Questionnaire (ODQ) & Visual Analogue Scale (VAS) at presentation, immediate post op, 1 week after post op, 3 months after, then 6 months. The average interval between fracture and procedure was 3.72 weeks. The average cement injected was 2.9cc. Most of the patients (56%) reported significant pain relief within 10 minutes of the procedure. We didn't face any major complication. The ODQ score shows 44.73% reduction in 1 month and 45.9% reduction at 6 months. The VAS score shows 49.02% reduction at 1 month and 74.2% reduction at 6 months. We graded our results and outcomes in good, fair and poor category depending on various criteria, of which 76% comes under good and rest 24% in fair category, no poor result found. We utilised low cost useful techniques to minimise the complications, and developed a result grading system. So, the Percutaneous Vertebroplasty with bone cement is still a justified treatment procedure for osteoporotic vertebral compression fractures as it provides excellent pain relief, internal stability to the fractured vertebra thus preventing further collapse & progression of kyphosis, allowing the patients to regain normal activity at the earliest, at a very reasonable cost, with avoidable side effects as it is far better than other conservative methods of management.

**Abstract no.: 33646**

**IS OVERWEIGHT OR OBESITY A PERIOPERATIVE RISK FACTOR IN TOTAL KNEE ARTHROPLASTY?**

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There is only little information given about perioperative morbidity and TKR in obese patients. Aim of this study was to investigate the influence of BMI on perioperative complications following total knee replacement (TKR) in a single surgeon. Material and method: This study was based on the retrospective review of charts from 201 patients who had undergone TKR between 4/2007 and 12/2009. Patients were divided into 2 groups: BMI < 30 (I) and BMI > 30 (II) (Obesity). All patients were followed up 6 weeks after operation. Results: Local minor complications included superficial hematoma requiring no revision in 15/99 (I) and 17/102 cases (II) ( $p = 0.46$ ). There were 4 effusions in group I and 4 in group II requiring puncture ( $p = 0.623$ ). Dehiscence of the wound requiring no revision was found in 0/99 (I) and 4/102 cases (II) ( $p = 0.064$ ). Further minor complications included superficial infection requiring no revision in 3/99 (I) and 9/102 cases (II) ( $p = 0.074$ ). Local major complications included deep infection requiring revision in 0/99 (I) and 6/102 cases (II) ( $p = 0.016$ ). General major complications included DVT in 1/99 (I) and 2/102 cases (II) ( $p = 0.511$ ), pneumonia in 1/99 (I) and 1/102 cases (II) ( $p = 0.744$ ). Discussion: We were able to show that obesity leads to a higher risk of infection in TKR. Patients should still be encouraged to reduce their weight prior to surgery and should be informed about the higher risk of infections in TKA preoperatively.

**Abstract no.: 33647**

**EXPERIENCES IN TOTAL KNEE ARTHROPLASTY AFTER DISTAL FEMORAL VARUS OSTEOTOMY**

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Introduction: There is only little information available about total knee arthroplasty (TKA) following distal femoral varus osteotomy (DFVO). The aim of our study was to show our experiences and mid-term results of TKA after a previous DFVO. Material and method: In a retrospective study we identified 36 consecutive patients who had undergone TKA after a previous distal femoral varus osteotomy. Average duration of follow-up after the TKA was 8.2 years (5.0 - 9.2). X- Rays were taken in 2 planes before TKA, 1 week after TKA and at latest follow-up. Tibiofemoral alignment was measured on weight bearing anteroposterior radiographs. Radiolucent lines at latest follow-up were documented. Functional evaluations were performed preoperatively and at the time of latest follow-up. Results: The mean Knee Society knee score increased from 42 points before the arthroplasty to 91.3 points after the arthroplasty. The mean Knee Society function score increased from 27.4 points preoperatively to 93.2 points postoperatively. Mean overall Knee Society score increased from 91.3 points preoperatively to 163.4 points postoperatively. The mean radiographic alignment was 4.5° of valgus (10° of varus to 19° of valgus) before TKA and 3.1° of valgus (range, 3° of varus to 6° of valgus) at the time of latest follow-up. Postoperative complications included one DVT with non-lethal pulmonary embolism, one wound infection requiring revision and one septic loosening. Discussion: It is possible to perform TKA following DFVO with good mid-term results.

**Abstract no.: 33648**

**LONG-TERM RESULTS OF TOTAL KNEE ARTHROPLASTY FOLLOWING HIGH TIBIAL OSTEOTOMY ACCORDING TO WAGNER**

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**Purpose:** There is only little information available about long-term results of total knee arthroplasty (TKA) following high tibial osteotomy. The aim of our study was to show our experiences and long-term results of TKA after a previous closing wedge high tibial osteotomy according to Wagner. **Methods:** In a retrospective study we identified 48 consecutive patients who had undergone TKA after a previous closing wedge high tibial head osteotomy according to Wagner with a follow-up longer than 10 years after TKA. The average duration of follow-up after the TKA was 13.3 years (min: 10.0, max: 15.5). X- Rays were taken in 2 planes before TKA, 1 week after TKA and at latest follow-up. Tibiofemoral alignment was measured on weightbearing long-leg anteroposterior radiographs. Radiolucent lines at latest follow-up were documented. Functional evaluations were performed preoperatively and postoperatively (at the time of latest follow-up). **Results:** The mean Knee Society function score increased from 63.1 points preoperatively to 90.0 points postoperatively. The mean overall Knee Society score increased from 93.2 points preoperatively to 160.8 points postoperatively. The mean average femorotibial angle was corrected from varus 0.8° (varus 14°-valgus 8.0°) preoperatively to valgus 7.6° (valgus 2 - 9°) at the last follow-up. **Conclusions:** The closing wedge high tibial head osteotomy according to Wagner does not compromise subsequent total knee replacement and leads to good clinical and radiological results.

**Abstract no.: 33649**

**CHARACTERIZATION OF A NOVEL OVERUSE CALCIFIC ACHILLES TENDINOPATHY MODEL IN MICE: CONTRALATERAL TENDINOPATHY INDUCED BY UNILATERAL TENOTOMY**

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**Objective :** To develop a simple but reproducible overuse induced animal model of Achilles tendinopathy in mice for better understanding the underlying mechanism and prevention of calcific Achilles tendinopathy. **Methods :** 80 C57/B6 mice (8-9 weeks old) were employed and randomly divided into control group and experimental group. Unilateral Achilles tenotomy was performed on the right hindlimb of experiment group. After 12 weeks, the onset of Achilles tendinopathy in the contralateral Achilles tendon was determined by radiological assessment, histological analysis, electron microscopy observation and biomechanical test. **Results :** The onset of calcific Achilles tendinopathy in contralateral Achilles tendon was confirmed after 12 weeks unilateral tenotomy. The contralateral Achilles tendon of experimental group was characterized as hypercellularity, neovascularization and fused collagen fiber disarrangement, compared to the control group. Importantly, intratendon endochondral ossification and calcaneus deformity was featured in contralateral Achilles tendon. Additionally, poor biomechanical properties in the contralateral Achilles tendon revealed the incidence of Achilles tendinopathy. **Conclusion :** We hereby introduce a novel simple but reproducible spontaneous contralateral calcific Achilles tendinopathy model in mice, which represents the overuse conditions during the tendinopathy development in human-beings. It should be a useful tool to further study the underlying pathogenesis of calcific Achilles tendinopathy.

**Abstract no.: 33651**

**SPONTANEOUS QUADRICEPS TENDON RUPTURE WITH AN INTERESTING ASSOCIATION- DIFFUSE IDIOPATHIC SKELETAL HYPEROSTOSIS OR FORESTIER'S DISEASE: A CASE SERIES**

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Background/Introduction: Spontaneous quadriceps tendon rupture is a rare occurrence. In the majority of reported cases there is an associated risk factor: chronic renal failure, rheumatoid arthritis, diabetes or gout (Vigneswaran et al, 1974). This is often undiagnosed on plain radiology (Hardy et al, 2005). We report a series of patients who sustained a spontaneous quadriceps tendon rupture during the period January - December 2011, in whom plain radiographs suggest diffuse idiopathic skeletal hyperostosis (DISH) or Forestier's disease. We discuss the possible association between DISH and spontaneous quadriceps tendon rupture. Objectives: The main aim of this case series study is to evaluate the association between diffuse idiopathic skeletal hyperostosis and spontaneous quadriceps tendon rupture. Clinical Cases: We found and reviewed four clinical cases presented with spontaneous quadriceps tendon rupture. All these patients demonstrated almost classical symptoms and signs clinical examination and diagnosed DISH on plain radiographs. Discussion: DISH is an autoimmune disease with unknown aetiology which is characterised by calcification and ossification of ligaments and entheses. It is reported that DISH is associated with several constitutional and metabolic factors but there is lack of evidence regarding this disorder associated with spontaneous quadriceps tendon rupture.

**Abstract no.: 33653**

**CLUBFOOT TREATMENT IN CHILDREN OF THE FIRST YEAR OF LIFE WITH ARTHROGRYPOSIS USING PONSETI METHOD**

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90% of children with arthrogryposis multiple congenita (AMC) has clubfoot which is extremely recurrent and resistant to correction. Surgery is the main method of treatment and talectomy is still the procedure of choice. Good results of conservative clubfoot treatment in children with AMC using the Ponseti method are reported in literature of recent years. Aim is to evaluate short-term results of clubfoot treatment in children of the first year of life with AMC, using the Ponseti method. Materials and methods: 10 patients (20 feet) with average age of 7 month (3 – 11 months) were treated with range of follow-up period from 1 month to 1.5 years. Average Pirani score was 5.5 points (3.5 – 6.0). Early achillotomy (in 1-2 casts) was performed in 6 patients (12 feet) for subtalar joint to be unblocked. Results: During Ponseti correction average quantity of casts was 7.3 (2 – 15). At the end of casting average Pirani score was 2.5 points (0.5 – 5). In 5 children 9 plantigrade braceable feet were achieved, but 1 foot relapsed with hind foot varus and forefoot adduction and required 3 casts additionally. In 11 feet residual components of deformation remained and required soft tissue releases to be performed (posteromedial in 8 feet and posterior in 3 feet). Conclusion: Using Ponseti method in children of the first year with AMC allowed correcting clubfoot in 45 %. In 55% the method helped to significantly restrict surgery and avoid bone elimination and reconstruction.



**Abstract no.: 33655**

**FUNCTIONAL OUTCOME OF ANTEROMEDIAL PLATING OF DISTAL TIBIAL METAPHYSEAL FRACTURES BY OPEN TECHNIQUE (INSTEAD OF MIPO)**

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Background: MIPO at distal tibia has peculiar and well described problems. The bone here has thin soft tissue coverage. The subcutaneous tunnel prepared here for MIPO, can sometimes peel off the already torn periosteum creating an avascular zone. Repeated attempts to get acceptable fracture alignment and plate alignment over the reduced bone construct can actually stretch these meager soft tissues, compromising the healing process further. To add, we have problems of plate prominence and skin impingement if there is mismatch of contact which can happen even with pre-contoured ones. So, unless it is a multi-fragmentary fracture, it is worth practicing an open approach. Material & Methods: From March 2008 to Feb 2012, we had 11 cases of early and delayed presentations of closed distal tibial metaphyseal fractures treated by open reduction and fixation using low profile pre-contoured locking plates along the anteromedial tibial surface, done with due respect to the periosteal attachments. Multi-fragmentary fractures were not included. Operation delayed between 5 and 15 days till "wrinkle sign" appeared. Primary bone grafting was done in three cases. Fibula fixed in eight cases. Weight bearing delayed till callus appeared. The average follow-up was 18.7 months. Results: Three had minimal serous discharge that settled with antiseptic dressings. None had wound break down, metal work impingement, mal-alignment or non-unions. Average time for fracture union was 3.4 months. Conclusion: Open reduction should not be considered as a taboo as it can align the fracture & the plate quickly with minimum radiation and healing problems.

**Abstract no.: 33658**

**STRUCTURE OF LOW LIMB INVOLVEMENT IN CHILDREN WITH ARTHROGRYPOSIS MULTIPLEX CONGENITA**

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Aim is to reveal variants of low limb contractures and deformities in children with arthrogryposis multiplex congenita (AMC). Materials and methods. 166 patients (322 extremities) from 6 month to 17 years of age were examined and treated in the clinic in 2010 – 2011. 143 patients had generalized type of AMC and 23 had predominantly low limb involvement. The investigation was performed based on analyse of X-rays, medical documentation and clinical features. Results. The most patients were of 1-3 and 3-7 y. o. age groups (35% and 25% correspondingly). The following types of deformities were revealed: club foot – 89.5%, knee flexion contracture – 44.5%, external rotation abductive hip joint contracture – 34.6%, knee extension contracture – 21.7%, congenital hip dislocation – 13.5%, congenital vertical talus – 6.3%, equinus foot deformity – 4.2%, flexion-adductive hip joint contracture – 1.8%. 2.4% of children had combination of clubfoot on the one side and vertical talus on another. Unilateral congenital hip dislocation had 13.8% of children and 9.6% of them suffered from bilateral. 3.6% of the patients had combination of clubfoot with other foot abnormalities such as: brachydactylia, brachymetatarsia, ectrosyndactylia and symbrachidactylia. Conclusion. According to our investigation all children with low limb involvement had foot deformities and clubfoot was the most frequently occurred. Deformity rate in low extremities increases from the proximal parts to the distal ones. Knee contractures is revealed in 2/3 of patients and in more than a half of them had one or another type of hip joint involvement.

**Abstract no.: 33663**

**PATIENT SATISFACTION AFTER SURGICAL TREATMENT OF LOW GRADE HALLUX VALGUS – CASE SERIES**

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Introduction: Surgical correction is becoming increasingly requested by patients with low grade hallux valgus. Patient expectations are high, with aesthetical concerns coming on top. Soft-tissue release is a possible treatment for low-grade hallux valgus. Objective: to determine patient satisfaction after soft-tissue release on/in patients with low-grade hallux valgus. Population and methods: Low grade hallux valgus was defined as a hallux valgus angle between 15 and 20 degrees and/or an intermetatarsal angle between 9 to 13 degrees. Between January 1st, 2009 and December 31st 2010, 115 patients were submitted to soft-tissue release for low-grade hallux valgus (119 surgeries). From these, 52 patients replied to the American Orthopaedic Foot and Ankle Society (AOFAS) survey, sent by mail. Age was  $53.9 \pm 11.3$  years, with female-male ratio of 15.4. AOFAS Hallux Metatarsophalangeal-Interphalangeal Scale was  $60.56\% \pm 23.582$ , but 75% of patients would hypothetically repeat the surgery. Discussion: Satisfaction values are very low in our study, with even lower scores than the ones observed by Torkki et al (JAMA 2001) in their control group. However, a high number of patients would still repeat the surgery if the same option was given to them. This may be due to patient idiosyncrasy, but certainly reflects the need to do these studies prospectively, with survey submission before and after the surgery. Conclusion: Soft-tissue release alone is a solution for low-grade hallux valgus. Due to very high expectancies, patient satisfaction may be low. Satisfaction analysis obligates us to do prospective studies, in order to them to be conclusive.

**Abstract no.: 33664**

**PATELLAR TENDON IATROGENIC INJURY AFTER TOTAL KNEE ARTHROPLASTY – CASE REPORT**

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Background: With population aging in the western world comes an increase in the amount of arthroplasties performed, with preference for both hip and knee joints. In total knee arthroplasty, injuries to the ligamentous structure, with particular relevance to the extensor system, are becoming increasingly common. Description: We report the case of a 63-year-old man, with Ahlbäck grade IV gonarthrosis of his right knee, submitted to total knee arthroplasty in our hospital. On the first day after surgery, when ambulating, he suffered anterior prosthetic dislocation. Closed reduction with plaster splint fixation was performed. Six weeks later, shortly after the plaster splint was removed, a new episode happened. The absence of patellar tendon stiffness when palpating the knee together with patella alta on the X-ray, made us suspicious of an iatrogenic section of the patellar tendon. Intraoperative observation confirmed the diagnosis. He was then submitted to patellar tendon tenoplasty using ipsilateral semi-tendinous and gracilis tendon autografts. Post-operative evolution was favourable. Conclusion: Iatrogenic lesions during total knee arthroplasty are becoming increasingly common, with extensor system issues having special relevance. Surgical solutions to iatrogenic lesions must become a standard in orthopaedic knowledge.

**Abstract no.: 33665**

**MASSIVE OSTEOLYSIS AFTER TOTAL KNEE ARTHROPLASTY – CASE REPORT**

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Background: As western world population becomes increasingly old, the need for arthroplasties grows, with preference for both hip and knee joints. Ultimately, with an increase in life expectancy, the amount of revision surgeries will increase as well. Revision of total knee arthroplasty may pose difficulties to the surgeon whenever the bone loss is severe. Description: We report the case of a 73-year-old woman with rheumatoid arthritis who presented massive osteolysis of her right femur (Anderson Orthopaedic Research Institute grade III) when being submitted to revision of total knee arthroplasty. To fill the bone loss in order to achieve prosthetic fixation, a tantalum augmentation component was added to both condilar surfaces and the femoral stem. Follow-up at 16 months was favourable, achieving 110° active flexion and unaided walking. Conclusion: Revision of total knee arthroplasty may pose difficulties to the orthopaedic surgeon. New modular augments may be a solution to massive bone loss. Medium term follow-up seems to be favourable.

**Abstract no.: 33668**

**ROLE OF HUMAN BODY'S ASYMMETRY IN DEVELOPMENT OF IDIOPATHIC SCOLIOSIS (IS) AND INTERNAL DISEASES DUE TO VIOLATION OF BIOMECHANICS OF SPINE AND PELVIS**

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Introduction: Centuries ago doctors of antiquity (Claudius Galen et al.) raised questions about nature of scoliosis and reasons of development of internal diseases. These questions remained unanswered until today. On the ground of own clinical materials we decided to disclose this mystery. Patients and methods: From 1996 till 2012 more than 7000 patients with IS (mostly of juvenile form) and associated spinal pain syndrome were under our treatment. Results: Development of IS has biomechanical nature, linked with asymmetry of neurological activity of brain's hemispheres. One-sided contracture of muscles- extensors of spine leads to pelvis tilt on side of weak muscles and is followed with development of lateral spine curves. Growing body muscle's asymmetry violates dynamic spinal-pelvic balance and on ground of laws of biomechanics, initiate torsional dislocation of vertebrae in zones of instability. Rotation of deformed clinoid vertebrae leads to formation of structural scoliosis and pressure on spinal nerves. Development of such deformation of spine in early childhood is the ground for internal diseases which should progress later. Thus children with scoliosis create reserve army of sick grown- up people with different maladies. Conclusions: 1. IS has regular nature, biomechanical and reflex origin, based upon asymmetry of brain. 2. On the ground of our discoveries we worked out nonsurgical method of treatment of scoliosis and associated spinal pain, which included detorsional gymnastics, combined with physiotherapy and corrective orthopaedic insoles. 3. Such treatment is recommended to be done in early childhood.

**Abstract no.: 33671**

**REVERSE CHECKREIN DEFORMITY OF HALLUX**

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Checkrein deformity is a condition characterized by deteriorating toe flexion contracture during dorsiflexion of ankle joint and enabling of extension as toe flexion contracture is relaxed during plantarflexion. We experienced a case of 39 year old female who showed limitation of toes motion after the operative treatment for distal tibiofibular fracture 5 months ago. Her all toes had the flexion contracture by ankle dorsiflexion (checkrein deformity), and big toe had the extension contracture by ankle plantarflexion (reverse checkrein deformity). Reverse checkrein deformity concomitant with the checkrein deformity is very rare, and there are few references in the literature about the clinical results and the operative method for this type of deformity. We report a case with the reverse checkrein deformity, who showed good clinical results by extensor hallucis longus tendon lengthening, combined with flexor hallucis longus and flexor digitorum longus tenotomy.

**Abstract no.: 33672**

**AO GROUP, AO SUBGROUP, GARDEN AND PAUWELS CLASSIFICATION SYSTEMS OF FEMORAL NECK FRACTURES: ARE THEY RELIABLE AND REPRODUCIBLE?**

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**Aim:** To determine which of the classification systems for the femoral neck fracture between AO group, AO subgroup, Garden and Pauwels is much more reliable and reproducible to predict method of treatment, radiological predict of non-union and predict of outcomes. **Methods:** Five observers classified 77 randomly selected anterior-posterior (AP) and lateral view preoperative radiographs of the femoral neck fractures according to AO group, AO subgroup, Garden and Pauwels classification systems. The procedure was repeated on the same radiographs after three months. First classification is used to calculate interobserver agreement by kappa value between observers, while the first and second classification has served to calculate intraobserver kappa value for each examiner. **Results:** Overall mean for classification system for interobserver agreement is: AO 0.44, AO subgroup 0.17, Garden 0.41 and Pauwels 0.19. Mean intraobserver agreement for AO group 0.56, AO subgroup 0.38, Garden 0.49 and Pauwels 0.38 coefficient kappa value. **Conclusion:** Garden and AO group are the only ones useful for the division of femoral neck fractures on without displaced and with displaced but not for clinical use. AO subgroup and Pauwels classification are not recommended for further use.



**Abstract no.: 33673**

**DORSAL DISTAL RADIOULNAR JOINT LIGAMENT RECONSTRUCTION FOR CHRONIC POST-TRAUMATIC TFCC TEARS WITH DISTAL RADIOULNAR JOINT INSTABILITY**

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Background: To analyze and evaluate the clinical outcome after anatomical reconstruction of dorsal distal radioulnar ligament with palmaris longus graft in patients with chronic post traumatic TFCC tears with DRUJ instability. Methods: Seventeen adult patients were surgically managed for chronic post-traumatic TFCC tears with DRUJ instability with Palmaris longus graft. Two patients were lost to the follow up, so the analysis was based on the outcome of remaining 15 patients. There were 10 females and 5 males in the study with the mean age of 24.3 yrs. The procedure was done on right side in 10 patients and on left side in 5 patients. The mean follow up period was 10.4 months. The patients were graded as per modified Mayo wrist score. Results: 5 out of 15 patients (n=33.3%) rated their wrist excellent, 8 patients (n=53.3%) rated their wrist good and two (n=13.3%) rated fair. Overall a total of 13 patients (n=86.7%) rated satisfactory and returned to their previous daily activities. Two patients rated fair complained of moderate pain at work and restricted pronosupination arc however their grip strength got improved at least by 70% compared to the opposite normal hand. Conclusion: DRUJ is inherently unstable. Pathologic instability can be acute or chronic; it can be dorsal, palmar, or multidirectional; and it can result primarily from soft-tissue injury or osseous malunion. Reconstruction of dorsal distal radioulnar ligament using Palmaris longus is an efficient method to manage chronic TFCC tears with DRUJ instability.

**Abstract no.: 33674**

**SIMILARITIES AND DIFFERENCES OF SELECTED CLINICAL VARIABLES OF AO/ASIF 31-B2.1 AND 31-A1.1 FRACTURE PATIENTS**

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**Aim:** To determine similarities and differences of clinical variables attributed to patients who sustained AO/ASIF 31-B2.1 or 31-A1.1 fractures for the purposes of a more reliable choice of implants used to treat the two radiologically similar and adjacent fractures. **Methods:** We analysed hip fractures patients surgically treated between the beginning of 2001 and the end of 2010 in traumatology department, General County Hospital of Požega, Croatia, who sustained the 31-B2.1 and 31-A1.1 type fractures due to a simple fall, and who were 65 or older. Reviewed variables comprise: age, gender, body mass index (BMI), ADL (activities of daily living) -Katz score prior to the injury, American Society of Anesthesiologists (ASA) score, implant type used, verticalization and early mobilisation assessment conforming to an original scale. **Results:** Age, BMI was statistical significance mostly different ( $p < 0.001$ ), then the gender, ADL score, assessment of verticalisation ( $p < 0.05$ ). Five different implant types were used, in both groups differently ( $p < 0.05$ ). No statistically significant differences between the ASA score of fractured group of patients ( $p = 0.2$ ). **Conclusion:** The 31-B2.1 and 31-A1.1 classifications differ in respect of the selected clinical variables, while remaining nearly indistinguishable in pre-operative radiological diagnostic results. A synthesis of the radiological results and clinical pictures defined by the selected variables facilitates a more uniform and more reliable application of recommended implants in cases of doubt regarding the AO/ASIF 31-B2.1 and 31-A1 fractures.

**Abstract no.: 33676**

**TOTAL KNEE ARTHROPLASTY SURGERY**

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Introduction: The outcome of the timing of a pneumatic lower limb tourniquet during primary elective total knee arthroplasty surgery (TKA) is not clear. There is a risk vs. benefit of tourniquet application per se which is continuously debated. Objectives: The aim of this study was to determine differences in outcomes between TKA patients operated with three strategies of lower limb pneumatic tourniquet application. Methods: Sixty three patients (54 females, 9 males, 63 TKA) completed the study. 21 patient (Group 1) was operated with tourniquet inflated just before incision and deflated after the hardening of cement, 21 (Group 2) with tourniquet inflated just before cement application and deflated after its hardening, and 21 (Group 3) with tourniquet inflated before incision and deflated after the last suture of the skin. The primary endpoint was fit-to-discharge time. Secondary endpoints were functional recovery (TUG test), switching to pain control with NSAID and rate of complications during six postoperative days. Results: Fit-to-discharge criteria were met significantly earlier in Group 1 than in Group 2 ( $p=0.019$ ) and Group 3 ( $p=0.003$ ). The functional recovery was faster in Group 1 than in Group 2 ( $p=0.023$ ) and Group 3 ( $p=0.025$ ). Switching to pain control solely by NSAID was achieved earlier in Group 1 than in Group 3 ( $p=0.009$ ). No major complications were observed in any group. Conclusion: Tourniquet inflation before the skin incision and deflation after the hardening of cement was associated with better functional recovery, lower postoperative pain and earlier fitness to discharge.

**Abstract no.: 33681**

**BIOFILM FORMATION OF S. AUREUS AND S. EPIDERMIDIS ISOLATED FROM PATIENTS WITH PROSTHETIC JOINT INFECTIONS**

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Staphylococci, remain the leading pathogens of the prosthetic joint infections (PJI) due to their pronounced ability to form the biofilms onto implants. Objectives: The aim of our study was to evaluate the biofilm forming ability of the *S. aureus* and *S. epidermidis* strains collected from patients with PJI. Methods: The strains (105 - *S. aureus*, 107 - *S. epidermidis*) were revealed from the samples of soft tissue, aspirates, exsudate as well as from the sonicated explanted devices from 189 patients with PJI. We used crystal violet for determination of biofilm forming ability. All strains were tested in quadruplicate. The biofilm formation of isolates was considered such as strong if the average optical density was equal or more than 0.2. Results: 32.1% of *S. aureus* and 68.2% of *S. epidermidis* isolates were meticillin-resistant. The strong biofilm formation was detected in 33.4% of all tested staphylococci. The strong biofilm forming ability was detected in 37-39% of *S. epidermidis* recovered from aspirates, soft tissue and 55% - from explanted devices. Only 28-29% *S. aureus* obtained from different cultured samples to be intense biofilm formers. Conclusions: *S. epidermidis* has emerged as one of the most important pathogen in PJI. *S. epidermidis* to be more frequently meticillin resistant compared to the *S. aureus* among PJI related staphylococci. There are also a significant difference between staphylococcal species in favor of *S. epidermidis* in ability to biofilm production, and more than a half of *S. epidermidis* strains isolated from removed devices was strong biofilms producer.

**Abstract no.: 33682**

**CHANGES OF CLINICAL AND LABORATORY PARAMETERS AND A COST OF TREATMENT IN PATIENTS WITH CHRONIC ANEMIA AFTER THE TOTAL HIP REPLACEMENTS**

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Nearly 800 thousand of total hip replacements (THR) are performed in the world each year. Anemia before surgery may be associated with a higher risk of complications. Objectives: We estimated the changes of clinical and laboratory parameters and cost of treatment in patients with chronic anemia (ChAn) after the THR. Methods: The investigation was retrospective. Medical cards of 86 patients were divided into a main group (n=17) and a control (n=69). Complete blood count was made before surgery and on the 1, 3, 7 day after the one. Also the duration of surgery, blood loss, body weight, bed day, cost of treatment (excluding the implant) were estimated. Results: There was no difference between groups on sex, age and duration of surgery. Body weight in the main group was significantly less ( $p=0.05$ ). Patients with ChAn at the admission had not only low hemoglobin and erythrocytes, but also reduced quantity of lymphocytes ( $p<0.03$ ). These changes were observed for 3 days after surgery. Blood loss in the main group was  $999\pm 79,4$  ml intraoperative, and  $23\pm 3,2$  ml/kg/day – during the 1st day after surgery. In the control group these parameters were significantly more ( $p<0.05$ ). The mean cost of treatment in the main group was 27% more than in the control group ( $p=0.05$ ). Thus patients with ChAn appeared to have superior blood loss after THR. This can lead to complications and increase cost of treatment. Our results highlight show necessity of a randomized trial dedicated to preoperative recommendations for patients with ChAn before THR.

**Abstract no.: 33689**

**PERCUTANEOUS VERTEBROPLASTY IN METASTATIC DISEASE**

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Introduction: The aim is to analyze the efficacy and safety of vertebroplasty in the treatment of compression fracture of the vertebral body due to metastatic process (including myeloma, breast, prostate, lung, or other tumours). Patients: In patients with pathological fracture of the vertebral body, under local potential anesthesia, low and high viscosity cement was applied by means of diascopy through unilateral transpedicular approach. Pain intensity was measured by VAS scale before surgery 24 hours after surgery and 3 months later. Results: Stabilization by application of low viscosity bone cement was performed in 78 patients (12 female, 21 male) on 98 vertebrae, and high viscosity bone cement was applied in 45 patients (22 female, 23 males on 221 vertebrae. The average age of patients was 57.22 (40-77.5). Total of 78 procedures were performed on 221 vertebrae, 1 cervical, 136 thoracic and 84 lumbar vertebrae. Preoperative VAS score in both groups was 8.6 in average and 24 hours after surgery and it was 2.4 after surgery and remained unchanged 3 months later. The leakage of low viscosity cement was noticed in 53 vertebrae (53.59%), and in 9 vertebrae (23.98%) with high viscosity cement, but without neurological complications. Conclusion: Vertebroplasty with high viscosity and low viscosity cement achieves a comparable analgesic efficacy, but because of the significantly smaller extraosseous cement leakage vertebroplasty with high viscosity cement is safer surgical treatment option for vertebral compression fracture of the vertebra due to metastases.

**Abstract no.: 33692**

**CORRELATION OF THE SURGICAL OUTCOME WITH THE DURATION OF SYMPTOMATIC PROLAPSED INTER VERTEBRAL LUMBAR DISC DISEASE**

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Introduction: The purpose of this study was to get the duration of symptoms as a better predictor of surgical outcome of prolapsed herniated Lumbar disc. Studies were based on disc size, multiple level and type of surgery along with the symptomatic duration, as predictors of surgical outcome. No study has attempted to correlate the surgical outcome with duration of symptoms exclusively. Methods: This study was conducted from the period June 2010 to June 2012. The patients included; L4-L5 & L5-S1 disc herniation, matching our inclusion criteria. The study had 2 arms; retrospective (87 patients) and prospective (37 patients). The duration of symptoms were divided as less than one year, one year, more than one year for the retrospective group and within one month, less than 1 year & more than 1 year for the prospective group. We included all patients presenting to our institution, as per a study that different surgical techniques of nerve root decompression has insignificant role on surgical outcome. Subjects were assessed on the basis of two questionnaires; The Oswestry Disability Index and the SF36 on periodic intervals. Results: We found significant improvement in the groups wherein surgical intervention was done within 1 year, which was also statically significant. Improvement was seen in almost all activities of daily living and emotional independence was attained by most. Chronic back pain of more than 1 year duration had the least improvement; though the pain had decreased. The prolonged symptoms did not improve emotional or psychological independence.

**Abstract no.: 33693**

**A COMPARATIVE STUDY OF BIMALLEOLAR ANKLE FRACTURES TREATED BY VARIOUS METHODS OF INTERNAL FIXATION**

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**Aim.**1.Diagnosis of ankle fractures among various injuries about the ankle joint by:a.Studying various patterns of clinical presentation. b.Confirming and localizing lesion in terms of various fracture pattern by radiological and imaging techniques.2To analyze the merits and demerits of different surgical methods of fracture stabilization in closed ankle fractures.3To compare the results with the published data in text book and journals.**materials and methods**Thirty patients with fresh bimalleolar fractures of ankle who attended Mahadevappa Rampure Medical College and Basaveshwar Hospital, Gulbarga, between oct 2010 and 2011 were studied.In these series of 30 patients 16 were males and 14 were females. The diagnosis was established by clinical evaluation and radiological examination in standard AP and lateral views.In these series of 30 patients 16 were males and 14 were females. The diagnosis was established by clinical evaluation and radiological examination in standard AP and lateral views.**Inclusion criteria:**all isolated ankle fractures **Exclusion criteria:**open fractures of ankle,polytrauma patient, on ambulatory patients.**results:**Among the methods of treatment Type A-2 fracture treated by both methods (A) (Lateral malleolus: semi-tubular plate and Medial malleolus: tension band wiring) and (Lateral malleolus: malleolar screw+ tension band wiring and Medial malleolus: tension band wiring) gave excellent results with respect to pain and activities of daily living. Type B-2 fracture treated by (Lateral malleolus: semi-tubular plate and Medial malleolus: malleolar screws) gave excellent results and those treated by (Lateral malleolus: rush pin and Medial malleolus: tension band wiring) gave poor results with respect to pain and activities of daily living.



**Abstract no.: 33694**

**OUTCOME OF HEALTH RELATED QUALITY OF LIFE IN SURGICAL TREATMENT OF DEGENERATIVE LUMBAR SPONDYLOLISTHESIS**

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**INTRODUCTION:** To analyse functional outcome and health related quality of life in cases of lumbar spondylolisthesis treated with posterior lumbar interbody fusion. **METHODS AND MATERIALS:** Study was performed in 25 patients which were operated between February 2012 to January 2013 in Mahadevappa Rampure Medical College, Gulbarga. Study included 15 males and 10 females with mean age of 45. A minimum of 4 months follow up was available. WHO Quality of Life-BREF (WHOQOL-BREF) was used. Quality of Life Questionnaire form was used, both preoperatively and postoperatively. **RESULTS:** Fusion was 100 % in all PLIF cases 2 patient had complications in form of infections. In one case the infection was superficial which subsided with IV antibiotics while the other required debridement after which the wound healed. **CONCLUSION:** Based on early functional outcomes, as per the WHO Quality of Life-BREF (WHOQOL-BREF) results, the patient had a good quality of life on an average, and PLIF is the treatment of choice in cases of Lumbar Spondylolisthesis.

**Abstract no.: 33696**

**RESULTS OF OPERATIVE CORRECTION IN CHILDREN WITH PECTUS EXCAVATUM**

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OUR RESULTS OF OPERATIVE CORRECTION IN CHILDREN WITH PECTUS EXCAVATUM. Introduction: Pectus excavatum is the most common dysplastic impairment of chest, which characterized by various degrees depth of anterior wall thorax. By data of domestic authors the rate of this pathology is ranged from 0,6 to 2,3%. The purpose was to improve the results of operative correction of the pectus excavatum in children. Materials and methods: In the Clinic of SRITO MH RUz in 32 patients with several degrees of the sternocostal complex elasticity at the age from 5 to 15 years that were operated during the period from 2007 to 2011. Results: At normal elasticity of the sternocostal complex in 16 (50,0%) patients and the operative intervention is executed by the method of D. Nuss with good results in all 16 (100,0%) patients. At moderate elasticity and hypoplastic sternocostal complex in 16 (50,0%) patients there was performed procedure of D. Nuss in modification by several types ("T" shaped or transversal wedge) sternotomy and cartilaginous resection of the deformed ribs and placement of the bar under the sternum. The good results were noted in 13 (81,2 %) patients, satisfactory – in 2 (12,5%) and unsatisfactory in 1 (6,3 %) patient. Conclusion: If the operative intervention would perform according to degree of elasticity of the sternocostal complex it may allow creating good cosmetic results, to reduce quantity of intra- and postoperative complications and promote early physical activization of the patients.

**Abstract no.: 33698**

**ROLE OF LATERAL VIEW IN PLANNING TREATMENT IN FRESH FRACTURE NECK OF FEMUR IN ADULTS**

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Classification, diagnosis and treatment are frequently debatable for intracapsular fracture neck of femur in adults. Obtaining an additional lateral view with an Antero-posterior (AP) view enables the treating surgeon with further inputs in term of classification and planning/modifying treatment accordingly well in advance. The aim of study is to assess the interobserver agreement on Garden classification and management plan on AP view and after adding a lateral view. This study also assessed the percentage change in Garden classification and the management plan after adding a lateral view to the AP view. Ten Orthopaedics surgeons were asked to classify and decide the management plan of 35 femoral neck fractures on AP view and combined AP and lateral view after a gap of 10 days. Results were compared using Fleiss kappa. There was a fair interobserver agreement (kappa value 0.39) for Garden classification on AP view only which improved to moderate agreement (kappa value 0.52) on adding a lateral view while there was only a marginal improvement (from kappa value of 0.50 to 0.52) in the interobserver agreement for the management plan on AP view and combined AP and lateral views. Supplementation of the AP view of involved hip with a lateral view changed the classification in 15.42% of the cases and altered the management plan in 23.14% of the cases. Hence we conclude that lateral view definitely has a role in planning treatment in intracapsular fracture neck of femur. Keywords: femoral neck fractures, lateral view, classification, management.

**Abstract no.: 33703**

**SEGMENTAL COLLAPSE IN UNITED FRACTURE NECK FEMUR....IS IT A MECHANICAL FAILURE RATHER THAN VASCULAR INSULT?**

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Introduction: Development of AVN despite modern fixation techniques brands fracture neck femur as unsolved. Acetabular runway & femoral head are not perfectly circular; malreduction in any plane produces incongruity predisposing to degenerative changes, like fragility and attenuation. Studying large number of cases, Ischaemia as cause of segmental collapse was doubted and a biomechanical factor was put forwarded for same (Garden 1971). Late appearance of AVN in united fractures strengthens this doubt. We aim to correlate X-ray findings of valgus malreduction to development of AVN in intracapsular fractures of neck femur. Materials and Methods: 100 Fresh Intracapsular fractures neck femur, undergoing Internal fixation, during 1994-2010 were evaluated retrospectively. There were 12,10,58,20 cases in Garden 1,2,3,4 respectively in 72 males and 28 females of 27-55 years of age. Implants used: Multiple Cancellous Screws (n=52) & DHS with derotation screw (n=48). Immediate post op X-ray was evaluated to find out valgus malreduction as confirmed by Lateral Wedging of Joint space, Uncovering of Femoral Head, Cupid's bow sign. Garden index was unreliable due to presence of implants. X-rays at 2 years and subsequently at different times were further evaluated. Results: 88% cases united of which 16% showed AVN and valgus malreduction was found in 93% of these AVN cases. Conclusion: Although small series, study reveals possibility to look into so called AVN changes in a biomechanical perspective rather than vascular one. A further study in this direction will be of great help.

**Abstract no.: 33704**

**INTRA ARTICULAR CORTISONE INFILTRATION IMPROVES THE OUTCOME OF MANIPULATION TREATMENT IN ADHESIVE CAPSULITIS (PERIARTHRITIS) SHOULDER JOINT**

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Introduction: Manipulation under Anaesthesia is an effective method of treating Adhesive capsulitis. Intra-articular Cortisone Infiltration during manipulation minimizes inflammatory reaction so that patient can undergo physiotherapy immediately. We aim to study results of intra articular cortisone infiltration in Adhesive capsulitis treated by manipulation under Anaesthesia followed by physiotherapy and compare the same in cases without infiltration. Materials & Methods: From Aug.2004 to July 2007, 70 patients, aged 40-70 years, satisfying the definition of Adhesive capsulitis were included prospectively. Patients were in Group A not receiving and Group B receiving intra articular Triamcinolone Injection, prior to manipulation under general anaesthesia .Physiotherapy started by day one. Patients were assessed at 3, 6, and 12 weeks .Results: As per Haggarts classification, Group B showed better results both subjectively and objectively. There was 75% Excellent to Good Subjective result in Group B compared to 44% in GroupA. There was 88% Excellent to Good Objective result compared to 63% in Group A. There was no Poor result, both Subjective and Objective, in Group B while it was found to be 25% and 6% respectively, in Group A. Conclusion : Manipulation under Anaesthesia, provides an effective treatment for Adhesive capsulitis of Shoulder with majority of the patients reporting successful end results, provided the post-manipulation pain is taken care of, and thereby reducing the period of morbidity.

**Abstract no.: 33705**

**GORHAMS DISEASE- A CASE REPORT**

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Introduction: Gorham's disease, is a rare condition characterized by the spontaneous onset of osteolysis in an otherwise healthy individual. This is related to localized endothelial proliferation of lymphatic vessels causing destruction and absorption of bone. Less than 200 cases have been reported so far. Methods: We describe one such case involving the proximal humerus in a 50 year-old lady with a 2-year history of pain, muscle atrophy and gritty feel on shoulder movements. The shoulder was unstable with active movements of upto 30 degrees abduction only. Radiological investigations like Xrays, MRI and CT scans showed absorption of the proximal humerus along with lateral part of the acromion. Histopathology revealed proliferative fibrous tissue with abundance of lymphangiomatous tissue without evidence of any hereditary, metabolic, neoplastic or infectious etiology. She was managed by surgical excision of the lesion and implantation of a cemented proximal humeral prosthesis followed by bisphosphonate therapy. Results: After one and half year follow-up, the patient has a painfree, stable shoulder joint without the gritty sensation. Range of movements has improved to more than 50% of the pre-operative range. Conclusions: Being a rare disease, there is no recommended standard therapy. Diagnosis is by the typical radiological features of gradual bone loss without new bone formation along with exclusion of other pathological conditions. The treatment modalities described are surgery, and radiotherapy. Surgical options include resection of the lesion, and reconstruction using bone grafts and/or prosthesis. Definitive radiation therapy is also reported. Prognosis is generally good unless vital structures are involved.

**Abstract no.: 33712**

**ILIZAROV IN UPPER AND LOWER LIMB RECONSTRUCTION (IULLR)**

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Introduction: Treatment of upper and lower limb reconstruction by Ilizarov Technique in different diseases is a good choice of treatment. Biological reconstruction is the corner stone of our belief in different diseases. Materials & Methods: We treated different diseases of the upper limb (GCT of humeral head, FFD of elbow, non-union of humerus, big-gap non-union of radius & ulna, post-burn contracture of the wrist, cubitus varus, old dislocation of elbow, diaphyseal aclasis) and in lower limb (Legg-Calvé-Perthes disease, fibrous dysplasia, bowing of femur & tibia, GCT of lower femur & upper tibia, congenital bi-lateral genu-valgum, Wind swept deformity, hockey-stick deformity of ankle, relapsed & neglected CTEV, chronic osteomyelitis of long bones, achondroplasia, foot lengthening, Charcot's disease) from 1990 to 2011 using Ilizarov technique. Results: The overall functional outcome of upper and lower limb reconstruction of different diseases using Ilizarov technique is safe, reliable and an effective procedure. Discussion & Conclusion: Reconstruction of the upper and lower limbs by Ilizarov technique in different diseases is cost-effectiv and functionally better. Corticotomy and distraction osteogenesis helped in deformity correction, burning out the resistant infection and also contributed in attaining a good limb-length equality leading to better functional outcome in treating different groups of patients.

**Abstract no.: 33713**

**MANAGEMENT OF PSEUDOARTHROSIS DEFECTS OF UPPER LIMB AND DEFORMITIES AROUND THE ELBOW BY ILIZAROV TECHNIQUE**

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The management of pseudoarthrosis defects of upper limbs and deformities around the elbow is a challenging job for orthopaedic surgeons. From Jan. 1997 to Jan. 2012 (15 years), we have been managing pseudoarthrosis and defects of upper limbs with deformities around the elbow joint (Pseudoarthrosis – 87, upper limb defects – 76, deformities around the elbow – 46) in Bari-Ilizarov Orthopaedic Centre and in NITOR. Patient age ranged from 6 to 62 years. The results are excellent and fair if meticulous intelligent follow-up is maintained properly.



**Abstract no.: 33717**

**PRECISION OF IMPLANT PLACEMENT IN TWO DIFFERENT APPROACHES FOR THA. MIS ANTEROLATERAL SUPINE VERSUS MINI-POSTERIOR APPROACH**

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**INTRODUCTION:** Precision of implant placement is one of important factors for prevention of dislocation, reduction of wear and implant longevity. The purpose of this study is to compare precision of implant placement in THA performed by MIS anterolateral-supine approach (ALSA) with mini-incision posterior approach (MPA). **METHODS:** Between 2010 and 2011, 172 consecutive patients (182 hips) admitted for THA were enrolled in this study to clarify an optimum approach for precise implantation. Primary diagnosis was secondary osteoarthritis due to DDH in any patients. Surgical approach (ALSA or MPA) was selected at random. All operations were performed using tapered wedge-shaped cementless stem. There were 160 females and 10 males. The average age at operation was 64.4 years. The average body mass index was 23.2 kg/m<sup>2</sup>. We evaluated the safe zone of Lewinnek, the target zone and stem alignment. Stem alignment was estimated in reconstructed three-dimensional femoral model by postoperative CT Scan data **RESULTS:** Ninety-two percent of cups in the ALSA group and 73 percent in the MPA group were implanted within the safe zone of Lewinnek ( $p=0.001$ ). Fifty-eight percent of cups in the ALSA group and only 28 % of cups in the MPA could be placed within the target zone ( $p<0.0001$ ). **CONCLUSION:** Precision of cup placement was different between two groups, which reason is that pelvic tilting angle might be extensively changed during operation in the MPA by lateral position, whereas anterior pelvic plane and bilateral anterior superior iliac spines could be confirmed in the ALSA by supine position.

**Abstract no.: 33718**

**CORRECTION OF RELAPSED, NEGLECTED AND RIGID CTEV BY G. A. ILIZAROV TECHNIQUE**

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Relapsed, neglected and rigid CTEV at the age of 1 and above present specific difficulties. These maybe due to neglect, improper treatment or inadequate bracing or they may follow soft tissue releases and are stiff and have severe deformities of cavus, dductus and equinovarus. From December 1992 to December 2012 we treated 186 feet in 1088 children. The ages of the patients ranged from 12months to 33 years averaging 5 years. In relatively supple feet, casting is still a choice. At the end of casting, hindfoot equinus persists. At this stage, Ilizarov apparatus was applied. The fixator duration is short and full correction of the hindfoot equinus was achieved. In older children, with very stiff feet, the Ilizarov external fixator offers significant advantages due to modularity and flexibility in application. Inadequate correction was seen in 3 feet. In 1 foot, there was flattening of the talar dome. In another patient, inadequate followup caused the incomplete correction in both his feet. Mild persistent cavus remained in the forefoot and varus in the heel. The parents were not unhappy as they got at least 95% improvement. The mean followup time was 36 months (12 months – 15 years). Modularity of the Ilizarov fixator permits us to confirm the Ponseti principles which allows us to have a kinesiological correction with fewer complications. It gives total control and better results.

**Abstract no.: 33719**

**MORPHOMETRIC ANALYSIS OF THE RADIAL HEAD AND ITS IMPLICATION IN PROSTHESIS DESIGN**

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Introduction: None of the current prosthetic designs have derived from geometric dimensions of the radial head. The aim of the present study was to illustrate the anatomic characteristics of the radial head in Indian population with regard to developing a new radial head prosthesis. Methods: 100 human adult cadaveric proximal radii were studied by X-rays, CT scans and manually with digital callipers. The following parameters were measured: 1) Total length 2) Mediolateral Head diameter 3) Anteroposterior Head diameter 4) Maximum Head diameter 5) Minimum Head diameter 6) Medial Head height 7) Lateral Head height 8) Maximum Neck Outer diameter 9) Minimum Neck Outer diameter 10) Neck Outer diameter just above radial tuberosity 11) Maximum Neck Inner diameter 12) Minimum Neck Inner diameter 13) Neck Inner diameter Just above radial tuberosity 14) Shaft Outer diameter just below radial tuberosity 15) Shaft Inner diameter just below radial tuberosity 16) Neck Length 17) Mediolateral Concave articular surface diameter 18) Anteroposterior Concave articular surface diameter 19) Depth of Concave articular surface 20) Best fitting sphere diameter of Concave articular surface 21) Radial Head offset 22) Head neck angle Results: From the study we suggest design of prosthesis as :- 1) modular head prosthesis preferable. 2) head sizes of 16, 18, 20, 22, 24 mm. 3) medial more than lateral head height by 3 mm. 4) medial head height of 7, 9, 11 mm. 5) tapering stem with proximal and distal diameters 7mm and 5 mm and length 5cm. 6) head-shaft angle of 7 degrees in sagittal plane & 2 degrees in coronal plane. 7) head offset of 1.4 mm. 8) concave articular surface depth of 2.2 mm.

**Abstract no.: 33724**

**RADIOLUNATE COALITION – A CASE REPORT AND LITERATURE REVIEW**

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Radiolunate coalition is an extremely rare condition and to our knowledge this was never reported before. Herein, we report a very rare case of congenital non - syndromic Radiolunate coalition in a 30 year old male. Radiographic features of the abnormality are described with a brief review of literature. A modification to the well-known Minaar's classification for carpal coalition has also been suggested.

**Abstract no.: 33725**

**CHRONIC OSTEOMYELITIS OF THE ILIUM IN AN INFANT WITH PATENT DUCTUS ARTERIOSUS—A CASE OF MISSED GLUTEAL SYNDROME?**

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Osteomyelitis is characterized by inflammation of the bone marrow and adjacent bone and is often associated with cortical and trabecular destruction. Pelvic osteomyelitis is unusual in children and adults. Children with pelvic osteomyelitis often present with non-specific symptoms. Hence diagnosis in acute stage is often missed leading to disabling sequelae such as sepsis, chronic infection and growth disturbance. This often results in surgical diagnostic or therapeutic procedures that may be avoided. We herein report a case of chronic osteomyelitis of iliac bone in an infant with Patent Ductus Arteriosus which arose as a sequelae of missed gluteal syndrome. After a thorough debridement and marginal excision of ilium coupled with appropriate antibiotics, the child is asymptomatic at one year follow up. To our knowledge, this represents the first report with chronic osteomyelitis of ilium in an infant with PDA. We report this case because of its rarity. A high index of suspicion is necessary to make an early diagnosis which is essential to prevent sequelae in such cases.

**Abstract no.: 33727**

**REMOVAL OF BROKEN GUIDE WIRE-AN INNOVATIVE TECHNIQUE**

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Removal of Broken GuideWire- An Innovative Technique Using Pituitary Forceps. Breakage of guide wire is an unusual, uninvited problem during hip surgery. Its retrieval is even more challenging. We are reporting a case where we stuck with the broken guide wire in the head of the femur, and presenting a simple, cost-effective method for its removal using hollow mill, pituitary forceps and c-arm which are readily available in any orthopaedics operating room. KEY-WORDS- broken guide wire, hollow mill, pituitary forceps

**Abstract no.: 33729**

**FLEXIBLE INTRAMEDULLARY NAILING FOR HUMERAL SHAFT FRACTURES**

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Twenty patients with humeral shaft fractures were treated with flexible intramedullary nails. Twelve patients were males and eight were females with a mean age of 33.85 years. Seventeen were middle third fractures, three were upper third and three were distal third. Eleven fractures were transverse, five were oblique and four were comminuted. Two titanium elastic nails of identical diameter were used. Depending on the fracture level; Nails were inserted in retrograde fashion with medial and lateral entry in 10 patients (middle to lower and lower third fractures), and lateral entry alone in 10 patients (middle and upper third fractures). Elbow and shoulder exercises commenced as soon as tolerated. Results were excellent in twelve patients, good in six, fair in one and poor in one. There was statistically significant relation between age and final results, the younger the patient the more rapid fracture healing was. There was no statistically significant relation between gender, side affected, intra-operative image intensifier time, mechanism of trauma, type/level/shape of fracture, presence of associated injuries and final score. Pain at insertion site of the nail was encountered in eight patients, improved after nail removal. Non-union occurred in one patient managed by open reduction and internal fixation with bone grafting. Mean operative time was 56.5 minutes in bicondylar entry and 36 minutes in lateral humeral condyle entry. Flexible intramedullary nailing is simple, easy and quick technique for stabilization of humeral diaphyseal fractures. The procedure has low morbidity and expected to give good results with a short hospitalization.

**Abstract no.: 33730**

**CLINICOPATHOLOGICAL STUDY OF SOFT TISSUE TUMOURS AND TUMOUR LIKE CONDITIONS AROUND THE WRIST AND THE HAND**

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Over the last years, there has been a growing interest in the study of tumours and tumour like conditions around the hand and the wrist. Most of tumour like conditions result from repetitive strain injuries. It is important to study true tumours and to find a correlation between them and tumour like conditions. Also finding a correlation between benign and malignant tumours around this area is lacking in the literature. This study included 178 patients with hand and wrist swellings out of 107005 patients who received medical care at our university hospital during one year. Thus patients of this study represent (0.30%) of the patients admitted from the outpatient clinic. The pathologic diagnosis was as follow, tenosynovitis (48%), simple ganglion (41%), dupuytren's contracture (4%), Giant cell tumour of tendon sheath (4%), chronic synovitis (0.6%), fibroma (0.6%), neuroma (0.6%), dermoid cyst (0.6%), synovial sarcoma (0.6%). The common age was between 30 and 49 years, 108 patients (60.6%) were females while 70 (39.4%) were males. Housewives were affected in 62 patients (34.8%). Interference with function was a notable feature in 75 patients (42%). Diabetes was evident in 56 patients (31.5%). Recurrence was high in trigger finger and ganglia managed conservatively. The palmar aspect of the right hand was affected more. The smallest swelling measured 0.5 cm<sup>3</sup> while the largest measured four by seven cm (chronic synovitis). Malignancy constituted (0.6%) of the study.



**Abstract no.: 33732**

**PERIPROSTHETIC FRACTURES AFTER TOTAL KNEE ARTHROPLASTY (TKA)**

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Background: Periprosthetic fractures after total knee arthroplasty are considered as a challenging entity facing orthopedic surgeons. It can involve the femur, tibia, or patella. Treatment options include conservative and operative methods. Both have advantages and disadvantages that must be considered before deciding the appropriate course of treatment. Patients and Methods: This work was done at Seuz Canal University Hospitals at January 2009 till January 2013 on fifty patients, aged 55 to 80 years old, 35 females 15 male, patellar fractures were the most common fractures complicating total knee arthroplasty ranges 0.11% to 21.4%, distal femoral fractures ranged from 0.3% to 2.5% and Tibial fractures ranged 0.4% to 1.75%. The etiology may be Intraoperative or Postoperative. The diagnosis was clinical and radiological. The Treatment for non displaced fractures was non operative and open redaction with internal fixation was the treatment of choice of displaced fractures, extramedullary an intramedullary devices may be used. Results: Good results in all cases with no infections or complications Conclusion: Periprosthetic fractures after total knee arthroplasty are considered as a challenging entity facing orthopedic surgeons. Treatment options include conservative and operative methods. Both have advantages and disadvantages that must be considered before deciding the appropriate course of treatment. Keyword: Periprothetic, fractures, TKA.

**Abstract no.: 33734**

**IMPROVING NEUROVASCULAR DOCUMENTATION IN SUPRACONDYLAR FRACTURES: THE LUFA PROFORMA**

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Purpose of study an initial study demonstrated poor neurovascular documentation in children with displaced supracondylar fractures (particularly regarding the Anterior Interosseous Nerve). We developed an emergency department assessment proforma to improve neurovascular documentation in children presenting with upper limb injuries – the Liverpool Upper-Limb Fracture Assessment (LUFA). The aim of this study was to compare neurovascular documentation before and after the introduction of this proforma. Methods and results Prior to the introduction of the LUFA proforma, we found only twelve (8.8%) and nineteen patients (13.9%) out of 137 patients had a complete pre-operative neurological or vascular assessment documented. Only eighteen patients (13.1%) had their anterior interosseous nerve function documented. Following the introduction of the LUFA assessment proforma, 31 of 38 patients (81.6%) patients had a complete pre-operative neurological examination and all had their capillary refill time and integrity of radial pulse documented. The 7 children who did not have their neurovascular documentation adequately documented did not have a LUFA form in their case-notes. Conclusions The LUFA proforma is a simple one-page assessment proforma for children with upper limb injuries and initial results indicate that it's introduction has led to a substantial improvement in neurovascular documentation in children presenting with upper-limb injuries at our institution. We have adopted the proforma as standard practice for children presenting with upper limb injuries and wish to share the proforma with the orthopaedic community.

**Abstract no.: 33735**

**USE OF RAPID PROTOTYPING TECHNOLOGY FOR COMPLEX ORTHOPEDIC & JOINT REPLACEMENT CASES – A CASE SERIES**

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Medical Imaging technologies like CT scan, MRI and X-rays have revolutionized the way doctors arrive at diagnosis and plan surgeries. The images from MRI and CT scan though could be exported in medical file format such as DIACOM. The process of Rapid prototyping generates a 3D model based on the inputs from 2D DIACOM images of CT and MRI scan. The DIACOM image is then visualized, segmented and three dimensionally reconstructed. The entire process of medical modelling is broadly split into three areas: data acquisition, image processing and production of actual model. The paper would elucidate recent development in this field and present a case series about the use of medical CT/MRI scanning, three-dimensional reconstruction, anatomical modelling, computer-aided design, RP and computer-aided implantation in treating a complex fracture of acetabulums, calcaneum, and medial condyle of femur (Hoffa's fracture), devising newer patient specific joint replacement products. The use of RP technology helped to understand the fracture configuration, reduced the surgical time, decreased the requirement of an anesthetic dosage, decreased intraoperative blood loss, and helped to achieve near anatomical reduction. In cases of joint replacement, it helped customization as per the patient anatomy. The merging of computational analysis, modelling, designing, and fabrication will serve as important means to treat conditions and fractures around joints, spine, acetabulum, and craniofacial region. It will also help design and plan patient specific instrumentations for joint replacement surgeries specifically complex and revision surgeries.

**Abstract no.: 33736**

**MUSCLE STRAINS IN PROFESSIONAL SOCCER PLAYERS DURING PAST SEVEN YEARS**

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Purpose: The aim of this investigation is to characterize muscle strains and examine their impact on playing resources in professional soccer players. Materials and Methods: Between 2006 and 2012, muscle strains in professional soccer players (28-34 players, ages 18-34) belonging to a Japan professional football league club were investigated. Result: There are 79 muscle strains that had required a player to stand down for one more days. Hamstrings was the muscle most involved (40 cases, 50.6 %) followed by quadriceps femoris ( 13 cases, 16.5%), adductors muscles, ( 10 cases, 12.7 %) and calf muscles( 9 cases, 11.4 %). The injury rate per 1000 athlete exposures was greater during competition (1.63 ) than practice(0.49 ). Re-injuries constituted 19.0 %( 15 /79). Although the right-and-left leg difference was not observed in the hamstring muscle strains, muscle strains of quadriceps and adductor had occurred on kicking leg mostly. On the monthly distribution muscle strains occur mostly in May, June, July. These results provide greater insight into the extent of the problem of muscle strains in professional football.

**Abstract no.: 33742**

**TOTAL HIP ARTHROPLASTY AFTER FAILURE OF DYNAMIC HIP SCREW FIXATION IN INTERTROCHANTER FRACTURES**

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Introduction: Intertrochanteric fracture is a challenging fracture with high rate of complications. One of the most common complications is nail cutout. It seems total hip arthroplasty is a reasonable treatment of this complication. Materials and Methods: Sixty four patients (22 male, 42 female) with a mean age of 61 years were prospectively studied after undergoing total hip replacement (long stem, distal fixation) after failed treatment of intertrochanteric fractures. Results: The mean time from primary surgery to the salvage arthroplasty was 14 months (range, 4 to 32 months). The mean follow-up period was 32 months (range, 18 to 58 months). Intraoperative femoral fracture occurred in eight patient and postoperative dislocation in six patients. At the last follow-up, we were able to review 52 patients with arthroplasties; the other 9 patients had died. The majority had good pain relief and marked functional improvement. Fourty four patients had either no or mild pain and 46 patients were able to walk with or without support. Almost 78% of patients had either excellent or good clinical results based on Harris hip score. Heterotopic ossification was noted in 8 hips. Conclusion: Total hip arthroplasty was found in this study to be an effective salvage procedure with minimal comlications after failed treatment of intertrochanteric fracture in elderly patients.

**Abstract no.: 33749**

**OSTEOCHONDROMA AT ITS RAREST SITE**

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Background: Osteochondromas usually arise from the metaphyseal region of the growing skeleton but extraskeletal cartilaginous tumours are rarest. Case presentation: A 65 year old woman presented with anterior knee pain and inability to flex her knee more than 90° since 1 year. Clinical examination and imaging studies revealed a nodular calcific mass in the anterior portion of the knee i.e. patella. Following excision, histopathology confirmed the diagnosis of extra-osseous osteochondroma-like soft tissue mass, with no recurrence in 36 weeks. Conclusion: An integrated clinical-pathologic diagnosis helps to clarify the nature of extraskeletal cartilaginous tumours that can arise at unusual anatomic site viz. patella. Complete local surgical excision is the management of choice.

**Abstract no.: 33752**

**A NEW TECHNIQUE FOR SURGICAL MANAGEMENT OF OLD UNREDUCED ELBOW DISLOCATIONS: RESULTS AND ANALYSIS**

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Background: Open reduction of neglected dislocations of elbow often leads to less than optimal results. Extensive release during reduction leads to instability. Immobilisation given to recover the stability leads to loss of ROM. We have used a new technique of creating an intra-articular ligament like structure to provide inherent stability so that we can give early movement to patient. Materials & Methods: 18 patients with a dislocated elbow of duration ranging from 4 to 48 months were operated. We performed the standard open reduction and fixation with k wire followed by immobilisation for 3 weeks for the first 8 cases. In the last 10 case we added a cruciate ligament like structure both on the medial and lateral side using autogenous semitendinosus graft. Post op moment was given the very next day. Results were evaluated using MEPI scores, complication rate and radiological evaluation. Results: The average follow up duration for the 46 patients is 5.4 years. All patients achieved full functional ROM . The mean increase in the MEPI score was significantly more for group II(45) than group I(32.5).Movement , activities and stability was better for this group II. Complication rates for both were similar.Conclusion: Providing stability at the time of operation with a mediolateral cruciate ligament provides the option of immediate mobilisation post operatively in open reduction of neglected dislocations of elbow. Thus this technique provides excellent results disregarding the duration of dislocation with minimal morbidity for the patient.

**Abstract no.: 33756**

**ANATOMIC TRANSTIBIAL SINGLE BUNDLE ACL RECONSTRUCTION  
(NEW SURGICAL TECHNIQUE)**

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Introduction: There are 2 major techniques for creating the femoral tunnel. One is Transtibial technique (TTT), and the other is the trans-portal technique. A number of authors have described technical modifications to the TTT to improve femoral tunnel obliquity and restore the native ACL footprint. Methods: From September 2009 to October 2010, 80 ACL reconstruction surgeries were performed by the two senior surgeons. Inclusion criteria were primary ACL reconstruction. Surgical technique: A standard anterolateral portal was established as the viewing portal. A low anteromedial portal was established as the working portal, clearing the lateral wall of the notch and notchoplasty is preformed. Hamstring graft harvesting and preparation is preformed. Tibial tunnel preparation by setting the tibial tunnel ACL guide at 55° with the intraarticular exit point of the guide pin 5mm lateral to the medial tibial spine and 3-4mm posterior to the anterior horn of the lateral meniscus, the external starting point was at anterior border of the MCL insrtional fibers to allow for oblique orientation of the guide for approximately 60° from the horizontal and the expanded head reamer with the same diameter of the graft is used to drill the tibial tunnel. Anatomic transtibial femoral tunnel preparation is performed by using free hand technique. RESULTS: In 76 cases a 35-mm tunnel depth was established. In the remaining 4 cases, only 25 mm tunnel lengths was established. The mean IKDC scores had increased from 55.5 +/- 18.0 to 76.8 +/- 15.3 postoperatively



**Abstract no.: 33758**

**LONG ILIOPECTENIAL PLATES AND FORMAL ILIOINGUINAL APPROACH: ARE THEY ALWAYS NEEDED TO FIX ANTERIOR ACETABULAR FRACTURES?**

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**Introduction:** Anterior acetabular fractures have routinely been fixed using long iliopectenial plates through a formal ilioinguinal approach. This entails a risk of injuring the external iliac vessels or the corona mortis during dissection, plate insertion or fixation. Through a limited approach and using the plate as-a-clamp concept of Letournel, shorter reconstruction plates could be used to buttress high anterior column fractures without screw insertion distal to the fracture. In cases with low anterior fractures an inverted L-shaped spring plate could be used, which also reduces the medial wall/posterior column fragment. **Materials:** Nineteen patients were operated upon with mean age of 33 years. Short pelvic brim plates were used to reduce the anterior column fragment in all except 3 cases with low fractures in which we used spring plates. Fixation of the posterior fragment was done using spring plates (8 cases) and one or two posterior column screws (16 cases). The approach was limited keeping the entire dissection lateral to the vessels. Average operative time was 45 minutes. Average blood loss was 350 cc. **Results:** Anatomical reduction was achieved in 18 cases. Weight bearing was started at 6 weeks and was full (with complete union) at 12 weeks with no cases of reduction loss. Average hip score was 93 ranging between 89 and 96. **Conclusion:** Using short and spring plates, the lateral ± middle window of the ilioinguinal approach is usually enough for reduction and fixation with shorter incision, decreased dissection, less blood loss, shorter operative time and fewer complications.

**Abstract no.: 33770**

**INNOVATIVE MANAGEMENT OF ELBOW ANKYLOSIS IN A DEVELOPING NATION: PEDICLED RADIAL RECURRENT FASCIAL INTERPOSITION FLAP**

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The use of various materials in interposition arthroplasty for elbow ankylosis has been on for many decades and the search for an ideal material has not ended. In Nigeria, Total Elbow Arthroplasty is yet to be established and so fascia lata from the thigh is still commonly used. There is thus the need for a material that will provide durable and functional results with little or no donor site morbidity hence, the pedicled ipsilateral radial recurrent fascial flap. The use of this flap in elbow interposition arthroplasty as far as we know is yet to be reported. We therefore report its use as interposition material in a patient with elbow ankylosis after extirpating the tissues blocking the joint, and describe the surgical technique. Post operatively the patient had improved arc of motion of the elbow to functional levels with good Mayo's elbow performance score of 80, and still improving. Using the regional pedicled radial recurrent fascial flap in interposition elbow arthroplasty is associated with minimal donor site morbidity, shorter operation time, good function, and is cost effective. It is a vascularized flap that is invaluable in cases associated with infection and thus comes highly recommended.

**Abstract no.: 33772**

**ARTHROSCOPICALLY ASSISTED FIXATION OF LOWER THIRD FEMORAL FRACTURES WITH RETROGRADE INTRAMEDULLARY NAIL: OPERATIVE TECHNIQUE**

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Abstract: The use of retrograde interlocking intramedullary nails has been described for the treatment of selected supracondylar fractures. Although a closed technique of nail placement has been described, the risks of damaging intra-articular structures with a blind approach have precluded the use of this method. In this article, we present a simple arthroscopically assisted method for the retrograde intramedullary nailing of lower third femoral fractures. This new method, combining the advantage of arthroscope and retrograde interlocking intramedullary nail, can provide a stable and reliable fixation, and meanwhile is less invasive to the soft tissue and knee, less operative time and blood loss, minimal disruption of the blood supply in fracture site. It is conducive to the fracture healing and the functional recovery of the knee joint and worthwhile to be recommended.

**Abstract no.: 33778**

**OPEN REDUCTION AND INTERNAL FIXATION OF TYPE III TIBIAL EMINENCE FRACTURE IN ADULTS**

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Introduction: Intercondylar eminence fractures of the tibia first described by Poncet in 1875. These injuries result from extreme ACL tension that causes tibial bone avulsion. Fractures of the tibial eminence are more common in children and adolescents than in adults. However, in a recent study, the average age of patients with ACL avulsion fractures was 21.5 years. A widely used system of classification is that of Meyers 1959. Currently, operative techniques range from arthrotomy with screws, wires, staples, pins, or suture fixation to arthroscopic assisted internal fixation. Different arthroscopic suturing techniques were reported yet they did not prove stable enough to allow immediate mobilization and weight bearing. Method: The study included 28 adult cases of intercondylar eminence fracture, treated between 2007 and 2012. MRI was performed in 12 patients and CT was performed in 16. Technique: medial parapatellar approach was used to drain the hematoma, irrigate the joint. Necrotic tissue was curetted and fracture surfaces and bed were debrided of interposed soft tissue. Anatomic reduction of the fragment to its bed, and preliminary fixation with 2 K wire had been done, and then An ACL drill guide is inserted and is fixed on the medial side of the avulsion fragment. A guide pin is inserted from the medial side of the anterior tibial tubercle and a bone tunnel is made using a K-wire 2.0 mm in diameter. A fixation wire 0.55 mm in diameter is folded to make a loop, and this is inserted to the joint via the bone tunnel.

**Abstract no.: 33781**

**TREATMENT OF CONGENITAL CLUBFOOT IN CHILDREN BY METHOD OF I. PONSETI**

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Introduction: According to different authors, congenital clubfoot is one of the most common malformations and reaches 35.8% of congenital diseases of the musculoskeletal system. Objective: To expand the use of the Ponseti method in Kazakhstan in the treatment of congenital clubfoot in children. Material and Methods: Staged redressment using I. Ponseti method was applied by Professor AJ Abdrakhmanov in 25 patients aged from 7 days to 2.8 years. 23 patients were born with clubfoot. 5 of them received atypical form, and 2 received equinvarus deformity because of cerebral palsy. Treatment technology included plaster bandaging with the correction of cavus foot, adduction and varus correction, and then removing equinus by percutaneous achillotomy and final plaster bandaging for 21 days followed by wearing braces abductor. Result: As a result of follow-up, 22 patients received good results, 2 patients received satisfactory results in the form of neurogenic genesis of clubfoot. 1 patient developed recurrence of disease of one foot in bilateral clubfoot because of failure to observe orthopedic regime. Conclusion: The Ponseti method used in treatment of clubfoot has shown high efficiency, which depends on terms of treatment and further compliance with orthopedic treatment regime, and demonstrates the cost-effectiveness and technical simplicity.

**Abstract no.: 33789**

**SALMONELLA OSTEOMYELITIS FOLLOWING TYPHOID VACCINATION -  
A CAUSE UNREPORTED**

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Introduction: Salmonella osteomyelitis is a rare condition especially in a non-immunocompromised patient or in the absence of sickle cell disease. We report a case of salmonella osteomyelitis involving iliac bone following typhoid vaccination and we believe, this has not been reported in the literature. Case Report: A 12 year old boy attended A&E with complaints of right hip pain for 3 weeks. He had typhoid vaccination 4 weeks before, on his left arm. On examining, he had difficulty in weight bearing on right side and tenderness over the trochanter. All hip movements were decreased on the right side. CRP was 151mg/L and ESR was 51mm/hr. Blood test for sickle cell anaemia did not reveal any sickle cell disease. Microbiological examination of faeces did not show any ova or cyst. Radiograph of his pelvis did not show any obvious pathology. MRI of the pelvis showed extensive osteomyelitis involving right acetabular region. A fluoroscopic guided aspiration of the collection was done and culture of the aspirate had grown Gram Negative bacillus, identified as Salmonella species that is missing 'O' antigen and 'V' antigen, similar to the attenuated salmonella found in typhoid vaccine. He had IV Tazocin 4.5g, four times daily for a week followed by oral ciprofloxacin for 6 weeks. Conclusion: salmonella osteomyelitis is a rare cause of infection in a healthy patient. Imaging studies can help to localise the pathology. The investigation of choice is open biopsy. The treatment is a combination of surgery and antibiotics and the antibiotic of choice is ciprofloxacin.

**Abstract no.: 33792**

**THE USE OF A TITANIUM DUAL MOBILITY CUP SYSTEM**

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The concept of stainless steel dual mobility cups in total hip arthroplasty has demonstrated very low long-term instability rates and a 98% survival rate after 12 years. We systematically implanted titanium alloy acetabular cups during a one year period. The purpose of our retrospective study was to report the 18-year clinical outcome data in a homogeneous and continuous series of 103 primary total hip replacements after implantation of a cementless titanium cup. All patients were implanted with NOVAE Ti (SERF®) cups made of titanium alloy combined with a retentive polyethylene liner and a 22.2 mm cobalt chrome prosthetic head. Mean patient age at the time of surgery was 53 years. All patients were clinically and radiographically evaluated. The overall 18-year actuarial cup survival rate with a 95% confidence interval was 87.4%. At last follow-up, there was no evidence of implant instability whereas acetabular aseptic loosening was reported in one case and high wear of the retentive liner in 9. The results of this investigation confirmed the long-term stability of dual-mobility implants. The main limitation of this system was early wear of the polyethylene liner in contact with the titanium metal back and reaction with third body along with loss of liner retentivity. In our study, titanium demonstrated favourable osteointegration properties but poor tribologic characteristics, therefore suggesting its interest at the bone-cup interface only.

**Abstract no.: 33793**

**INTRA-PROSTHETIC DISLOCATION; A SPECIFIC COMPLICATION OF THE DUAL MOBILITY CUP**

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The dual-mobility concept was proposed as an alternative to prevent postoperative dislocation events. However, intraprosthetic dislocation (IPD) is a troublesome and specific complication induced by the loss of the polyethylene retentive rim and escape of the femoral head from the polyethylene liner. The factors associated with IPD are unknown as only isolated cases have been reported and do not provide a clear understanding of the mechanisms of failure. We therefore identified features related to different types of IPD and determined factors related to the timing of IPD. **Methods** We identified 81 cases with IPD from among 1960 primary THAs. To classify the types of IPD we considered perioperative (presence of arthrofibrosis, cup loosening, and type of liner wear) and radiographic (radiographic cup loosening or migration, and ossification) features. **Results** We identified three types of IPD with the following causal mechanisms: Type 1 was pure IPD without arthrofibrosis and without cup loosening (n = 26), Type 2 was IPD secondary to blocking of the liner (n = 41), and Type 3 was IPD associated with a cup loosening (n = 14). The mean times of onset were, 11, 8, and 9 years after THA, respectively. We found no difference according to the stem design regarding timing of the IPD. **Conclusions** This new IPD classification allows clinicians to anticipate the possible conditions they will encounter with revision surgery and plan surgery. The implant characteristics and this new classification accounted for the differences in the timing of occurrence.



**Abstract no.: 33794**

**ACCURACY OF SHOULDER INJECTIONS BETWEEN ANTERIOR AND SUPEROMEDIAL TECHNIQUES**

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Background: The objective of this study was to compare the accuracy of shoulder injection between the standard anterior and the new superomedial techniques. New technique was modified from Neviasher arthroscopic portal. In addition, intraarticular location and depth of needles were evaluated for both techniques. Study Design: Experimental study. Methods: Fifty-eight patients underwent shoulder arthroscopy in beach-chair position were recruited. They were 57 + 10 years old. Needle punctures were done by only one skilled orthopaedic surgeon for both techniques. Single needle pass of skin with only one redirection was allowed in each trial. A posterior portal arthroscopy was done to directly assess needle position in shoulder joint and recorded that the needle was inside or outside the joint. If it was inside, determined the location and measured the depth of needle. Results: Accuracy of superomedial technique was 84%. It was significantly more than anterior technique, which was 55%. For superomedial, the inside needle penetrated long head of biceps 4%, while penetrated 28% for anterior. However, superomedial technique penetrated superior labrum 35%, while penetrated 0% for anterior. The depth of needle was 42 + 7 mm for superomedial and 31 + 6 mm for anterior. Conclusions: Superomedial technique had more accuracy and lower penetrating rate of long head of biceps. Small needle was still needed to minimize degree of injury to superior labrum. At last, this new technique needed longer needle to access shoulder joint.

**Abstract no.: 33797**

**FUNCTIONAL OSTEOMYOCUTANEOUS FLAP COVERAGE OF LARGE TRAUMATIC DISTAL LIMB DEFECT - A CASE REPORT**

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A free fibular osteomyocutaneous flap was used to address a large traumatic distal tibial defect with a large area skin and soft tissue loss. The functional restoration of the lower limb was achieved by vascularised fibular strut with adequate skin and soft tissue coverage to allow free and stable ambulation. The sural nerve cable graft used simultaneously resulted in complete recovery of the plantar sensory loss. A single procedure addressing all the problems of bone loss, soft tissue loss and neurological deficit can reduce the overall time of recovery, prevent multiple surgical procedures and complement the other tissues in recovery. The vascularised fibula resulted in faster incorporation and we could allow early weight bearing. Early planning and multidisciplinary approach can go a long way in limiting the number of surgeries and result in early functional recovery.

**Abstract no.: 33800**

**AN ALTERNATIVE METHOD FOR PREDICTING COMPONENT SIZES IN TOTAL KNEE ARTHROPLASTY**

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Introduction: to evaluate the accuracy of a patient's shoe size as a predictor of the implant components sizes in TKA. Methods: A retrospective study was conducted to identify the correlation between shoe size and implant component sizes in a group of patients who underwent TKA using (Stryker) Triathlon system. (260 patients) formed the study sample. Shoe sizes (British system) obtained by telephone questionnaire. Tibial and femoral component sizes obtained from operation notes. Spearman's correlation test and Chi Square test used to assess correlation. Results: We found a positive correlation between shoe size and both femoral and tibial components sizes ( $p < 0.001$ ). For femoral component; A shoe size (3) or less predicted a size 3 or less component, a shoe size (4 -5) predicted a size 3 component, a shoe size (6- 7) predicted a size 4 component, a shoe size (8- 9) predicted a size 5 component, a shoe size (10- 11) predicted size 7 component. For tibial component; A shoe size (4- 5) predicted size 3 component, a shoe size (6) predicted size 4 component, a shoe size (7- 9) predicted a size 5 component, a shoe size (9.5- 10.5) predicted size 6 component, a shoe size (11) or more predicted size 7 component. This relation predicted the component size accurately in 80% of cases Conclusion: Patient shoe size can be a simple and reliable option to predict the implant size in TKA, and can be used preoperatively as an alternative method for templating radiography.

**Abstract no.: 33801**

**CAN THE SOUND OF HAMMERING OBJECTIVELY PREDICT MICRO-FRACTURE IN BONES? A STUDY ON ANIMAL BONE**

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Introduction to prove the hypothesis indicating hammering sound change can predict development of micro-fracture during rasping of long bones. . Methods An experiment using porcine femur bone performed by attaching a bone conduction microphone to the distal part of the bone while hammering a rasps of different sizes through the medullary canal till the point where a fracture developed. The transduce sound resonances recorded and analysed using Matlab software and a spectrum analyzer using Fast Fourier Transforms (FFT). Results Our analysis proved that the sound frequency response (SFR) are influenced by the structural integrity of the Rasp-femur interface. The pitch of the resonance increases as the rasp approaches optimal tension and grip in cortical bone. The SFR graph shifted to the right between successive hammer blows as the fixation stiffness increased and that was reflected by increasing resonance frequencies, Once bone fracture developed this structure was compromised leading to a change in the pitch and duration of the resonance. When the tension decreased due to the fracture The SFR graph shifted to the left as the structure no longer has the capacity to resonate to the same extent. SFR analysis can detect accurately the rasping end point where the risk of fracture increases if hammering continued beyond it. Conclusion There is a relationship between hammering sound frequency response during rasping and internal stress in the bone which could be used as an objective method to predict and prevent the development of intraoperative micro-fracture through the identification of insertion end point.

**Abstract no.: 33802**

**CLINICAL OUTCOMES OF DIRECT REPAIR OF SPONDYLOLYSIS;  
USING A PERCUTANEOUS PEDICLE SCREW AND HOOK-ROD SYSTEM**

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**Introduction:** The purpose of this study is to review clinical and radiographical outcomes after direct repair of using minimally invasive technique for lumbar spondylolysis. **Methods:** Patients with painful pars defect not responding to conservative therapy were considered to be eligible for direct repair of the spondylolysis rather than lumbosacral fusion, if there was no associated degenerative disk disease or spondylolisthesis. The surgical technique stabilizes bone grafted to the defect by a pedicle screw and hook-rod using the Sextant system. Clinical evaluations were performed using the Japanese Orthopaedic Association (JOA) score and VAS. Radiographical evaluationd were performed by measuring intervertebral motion of L5-S1, % slip of L5-S1 using the pre- and post-operative lateral dynamic radiographs of lumbar spine. **Results:** We reviewed all 5 patients (4 men, 1 woman) of bilateral L5 spondylolysis. Mean age was 44.4 years. Mean postoperative follow-up was 26.8 months. The mean JOA score was improved from 14.8 to 26.4 points. The mean VAS also was improved from 7.8 points to 2.5 points. This technique is minimally invasive and could provide good clinical results. Bony fusion was confirmed by CT in all 5 patients. Postoperatively, L5-S1 intervertebral motions in 4 patients were decreased, but the motions were preserved in all patients. The L5-S1 slips were decreased in 5 patients. Therefore, the direct repair can lead to obtain the normal lumbar kinematics. **CONCLUSION:** This procedure is minimally invasive and provide good clinical outcome. Biomechanically, a spinal motion segment can be preserved.

**Abstract no.: 33806**

**THE USE OF SOUND ANALYSIS TO GUIDE FEMORAL REAMING IN UNCEMENTED TOTAL HIP ARTHROPLASTY: A NEW CONCEPT**

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**Introduction** No objective intraoperative method exist to determine proper femoral reaming in cementless hip arthroplasty. **Method** We recorded and analysed the frequencies of sound signals recorded via a bone conduction microphone during reaming of the femoral canal in a series of 10 consecutive patients undergoing uncemented total hip replacement performed by same surgeon. Hammering sound frequencies and intensity were analysed by mean of computer software. The relationship between the patterns of the recorded reaming sound frequencies compared with surgeon judgment of the reaming quality intraoperatively and post operative x rays. All patients were followed up clinically and radiologically for 6 months after surgery to determine the integrity of the fix and to evaluate the stability of the prosthesis. **Results** There was a consistent pattern of frequency changes detected in all cases. Our results showed a definite increase in the resonances of sound frequencies between 600 and 1000Hz when the tension of the reamer moves from loose to tight during hammering. Adding all of the dB values between 600 to 1000 Hz for the loose tension sound and comparing this to the total for the tight tension sound showed an average of 449.6 % increase. Our Analysis of the sound signals changes was comparable to the adequacy of the reaming postoperatively **Conclusion** There are identifiable audio frequency patterns changes associated with satisfactory reaming of the femoral canal. Our findings may pave the way for the development of a real-time intraoperative reaming audio analyser which can guide surgeons to the optimal reaming.

**Abstract no.: 33807**

**THE USE OF WEIGHT RELIEVING SHOES IN FOREFOOT SURGERY**

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**INTRODUCTION:** After reconstructive forefoot surgery, patients require complete or partial forefoot relief, which can be obtained with a variety of shoe designs. **AIM:** to review our experience with the use of the heel bearing shoes for forefoot weight relief and evaluate its use & application in our daily forefoot surgical practice **METHOD:** A retrospective review of all (341) patients who underwent reconstructive forefoot surgery in our unit during the period of January 2003 to October 2007. **RESULTS:** All patients used Barouk heel bearing shoes in the post operative period 283(83%) were females and 58(17%) were males. Average age was 56 years (range 14–84). In March 2006 we changed our postoperative protocol with the introduction of early physiotherapy for the lesser toes. 258 procedures performed between January 2003 to February 2006 (first group), while 83 procedures performed March 2006 to October 2007 (second group). 51(19.77%) from the first group reported stiffness of toes at 6 weeks review whilst only 3(3.61%) out of the second group. 18 (6.98%) reported discomfort and stiffness of the hip from the first group in comparison to only 2(2.25%) patients in group two. From the first group 27(10.47%) reported knee stiffness while only one patient in the second group. The incidence of clinically significant low back pain was 12(4.65%) in the first group and 5(5.61%) patients in the second group. **CONCLUSION:** heel weight bearing shoes have important role in reconstructive forefoot surgery; however some problems may be encountered during their use. Early physiotherapy is essential to avoid problems.

**Abstract no.: 33808**

**VASCULAR INJURIES ASSOCIATED WITH TRAUMATIC BONE INJURIES**

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Introduction: Vascular injuries associated with limb bone fractures are relatively uncommon. Aim: To determine the mechanisms of injury and evaluate the outcome of combined orthopaedic and vascular injuries. Method: A retrospective review of all patients with vascular injury associated with limb bone fractures between January 1992 and July 2006 was performed. Data collected included demographic details, clinical presentation, assessment, management and outcome. Results: Of 22,340 fractures treated during the 14 years period 36 patients sustained a vascular injury that required surgical intervention. Of those, 18 patients (50%) had a concomitant fractures or other orthopaedic injury this group form the basis of the audit. The median age was 31.1 (range 3–80) years, and 66% were male. Road traffic accidents accounted for 12 injuries (66%), other accidents 4(22%), iatrogenic injury 1(6%), and 1 gunshot injury (6%). Four patients had an associated nerve injury with varying severity. Skeletal fixation preceded vascular repair in most of the cases. Perioperative arterial shunting was not used in any patient. The primary vascular procedures included end-to-end anastomosis 2(11%), bypass grafting 1(6%), interposition vein grafts 8(43%), vein patch 1(6%), direct arterial repair 2(11%), ligation 2(11%), primary amputation 1(6%), reposition of normal course of artery 1(6%). During a 17 months follow-up period, the upper and lower limb preservation rate was 100 and 89%, respectively. Nine patients (50%) were symptom free; three patients (16.6%) had a neurological deficit. Conclusion: Vascular injury is uncommon in the orthopaedic patients. High suspicion and early intervention is essential to optimise outcome and function.



**Abstract no.: 33814**

**RECONSTRUCTIVE MICROSURGERY OF THE SEVERE COMBINED INJURIES OF THE UPPER EXTREMITY**

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Introduction: Of all the injuries the number of severe injuries of the upper extremity makes 45% which accompanied by an extensive damage of the vascular-nerve bundle and soft tissue defects that require highly skilled surgical care. The goal of the research is to use microsurgical techniques in reconstructive-recovering surgery of the combined trauma of the upper extremity. Methods: The work based on the treatment of 110 patients with combined injuries who received one-stage reconstructive surgery using microsurgical techniques. 77 patients had injury at the forearm and hand and 33 patients had a shoulder injury. 72 patients (65.5%) got injured performing heavy physical work, 38 (34.5%) at home. Surgical intervention included a recovery of vascular-nerve bundles using microsurgical techniques and the operating microscope, performing osteosynthesis limb bones and hand bones, tendons reconstruction, different types of primary skin plasty. Results: Outcomes of interventions for severe combined trauma of the upper extremities were studied in 98 cases out of the total 110 operations conducted. The results of the restoration of damaged structures were assessed individually and compared with the corresponding segment of the healthy limb and the preoperative state of the damaged structures. 95 patients (86.4%) obtained positive results. Conclusion: In the development of the surgical treatment of combined injuries of the upper extremity a one-time recovery of all damaged structures using microsurgical precision technique is highly important. Necessarily considered the restoration of the main blood flow through the arteries of small diameter and especially revascularization, as the basis of a full recovery of lost functions.

**Abstract no.: 33815**

**CEMENT AUGMENTATION OF THE PERFORATED PROXIMAL FEMUR NAIL ANTIROTATION (PFNA) BLADE DOES NOT CAUSE CRITICAL FEMORAL HEAD INTRA-OSSEOUS PRESSURE ELEVATION**

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The objective of this study was threefold: 1. Quantify the intra-osseous pressure produced within the femoral head during cement augmentation of the perforated PFNA blade. 2. Assess whether the pressure generated is influenced by the injection rate. 3. Assess the amount of force applied during the injection. Methods: Six pairs of human cadaveric femurs were used in the study. A basicervical osteotomy was performed and the heads were instrumented with PFNA blades. Each pair was randomly assigned into one of two groups: slow vs. rapid injection with polymethylmethacrylate cement. In the slow group, the augmentation was done using 6 consecutive 1ml injections, each over 10 seconds. In the rapid group each 1ml injection was carried out over 5 seconds. For intra-osseous pressure measurements, transmitters were inserted to a depth of 5mm at both the superior and inferior apices of the head. The reaction forces on the syringe were also measured. Results: There were no significant differences between the slow and rapid injection rates with respect to the peak pressures measured following cement injection. In both groups, elevations in pressure were transient and returned to baseline values within 30 seconds. The force required after each sequential injection increased in both groups; however, significantly higher forces were required to inject cement over 5 seconds. Conclusion: This in-vitro study demonstrates that the intra-osseous pressures generated during cement augmentation of the femoral head are small and transient. Pressures never reach critical values and are below the published values linked to avascular necrosis.

**Abstract no.: 33821**

**CANCER RISK IS NOT INCREASED IN PATIENTS TREATED FOR ORTHOPAEDIC DISEASES WITH AUTOLOGOUS BONE MARROW CELL CONCENTRATE**

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Introduction: We investigated the risks for systemic and site-specific cancers in patients who had received mesenchymal stem cells to treat orthopaedic lesions (osteonecroses, non-unions...). Methods: 1873 patients were treated from 1990 to 2006 with bone marrow-derived concentrated cells. The average number of stem cells returned to the patients was 483 000 cells (range of 62 000 to 2 095 000 cells). The risk of tumourigenesis at the cell therapy treatment sites (radiographs and/or MRIs) and the risk of cancer diagnosed in areas other than the treatment site were evaluated from 1990 until 2011. The follow-up was 12.5 years (range 5- 21 years). The relative risk of cancer was expressed as the ratio of observed and expected number of cases, i.e. standardized incidence ratio (SIR). Results: No tumour was found at the treatment sites on the 7306 MRIs and 52 430 radiographs among the 1873 patients. 53 cancers were diagnosed in areas other than the treatment site. Based on cancer incidence in the general population during the same period, the expected number of cancers was between 97 and 108 for the same age and gender distribution. The SIR for the follow-up period was between 0.49 and 0.54 (95% CI: 0.30–0.80). Conclusion: This study found no increased cancer risk in patients after application of regenerative cell-based therapies using bone marrow-derived progenitor cells either at the treatment site or elsewhere in the patients after an average follow-up period of 12.5 years, ranging from 5 to 22 years.

**Abstract no.: 33824**

**HIP REVISION ARTHROPLASTY IN PATIENTS WITH SICKLE CELL DISEASE**

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Introduction: The purpose of this study was to characterize the clinical and radiographic outcomes of revision total hip arthroplasty (THA) in patients with sickle cell disease (SCD). Methods: We evaluated 60 hips in 60 patients (35 men and 25 women) with SCD (38 hemoglobin SS, 17 S/C and 5 S/beta thal) who had undergone aseptic revision of THA at mean age of 36 years before the year 1999. The mean follow-up was 15 years (range 10 to 20). The results were compared with matched series of hip revisions (same implants, same surgeons) in patients with osteoarthritis (70 hips) or other causes of osteonecroses (70 hips). Results: Medical complications of transfusions (58%) and 16 orthopedic complications were observed. Infection occurred in 5 hips (8 per cent). The probability of survival of both of the original components after revision in patients with SCD were 90% at five years, 64% at ten years, 44% at fifteen years, and 27% at twenty years. Survival rates of hip revision were significantly better ( $p < 0.01$ ) in patients with osteoarthritis (96% at five years, 85% at ten years, 76% at fifteen years, and 45% at twenty years) and in patients ( $p < 0.001$ ) with other causes of osteonecrosis (94% at five years, 81% at ten years, 71% at fifteen years, and 39% at twenty years). Discussion and conclusion: revision hip arthroplasty in SCD involves a higher complications rate and incidence of failure (with iterative revision) than revision arthroplasty in osteonecrosis related to other conditions or in osteoarthritis.

**Abstract no.: 33827**

**USE OF A NANO-HYDROXYAPATITE/POLYAMIDE-66 CAGE IN SINGLE-LEVEL ANTERIOR CERVICAL DISCECTOMY AND FUSION**

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Cage has been widely used for the reconstruction following anterior discectomy. Due to the prominent stress shielding and high rate of subsidence of metallic cages, recently various metalloid cages become more popular with spine surgeons. The hollow cylindrical nano-hydroxyapatite/polyamide-66 (n-HA/PA66) cage is a new metalloid cage simulating the construction of nature bone. Current study firstly evaluated its effect in anterior cervical discectomy and fusion (ACDF) over a mean 3 years follow-up. 47 consecutive patients with radiculopathy or myelopathy who underwent single-level ACDF using n-HA/PA66 cage and anterior plate fixation were enrolled in this study. Preoperative and postoperative radiographs, 3-dimensional computed tomography scans, Japanese Orthopedic Association (JOA) and Visual Analog Pain Scales (VAS) scores were assessed. Mean correction of segmental lordosis from surgery was  $6.9\pm 3.0^\circ$  with a mean loss of correction of  $1.7\pm 1.9^\circ$ . At last, the rate of fusion was 100% with the rate of cage subsidence ( $>2\text{mm}$ ) as 2%. And both JOA and VAS scores at last follow-up were significant improved than before surgery. We found the n-HA/PA66 cage should be a successful reconstructing device, which can effectively promote graft bone fusion and prevent cage subsidence. In the patients accepted for ACDF, using n-HA/PA66 cage filling by artificial bone or autographic iliac bone associated with satisfactory radiological and clinical outcome.

**Abstract no.: 33829**

**COMPARATIVE ANALYSIS OF CLOSED VS OPEN NAILING FOR  
DISPLACED MIDDLE THIRD FRACTURE OF CLAVICLE**

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Intramedullary nailing for fractures of middle third clavicle has become increasingly popular. Though open nailing has been widely described, closed nailing finds less mention. In this study we compared closed nailing with open nailing in fractures of middle third of clavicle to assess if the former holds any advantage. 29 patients with closed nailing were compared to 26 patients with open nailing in terms of operative time, length of incision, pain, time to union and functional outcome. Only operative time and length of incision were significantly more in open group than in closed group. Therefore we believe that closed reduction can be attempted in all patients undergoing nailing for middle third clavicle fracture but surgeon should have a low threshold to open the fracture if closed reduction fails as functional outcome and time to union remains unaffected.

**Abstract no.: 33838**

**REPLACEMENT OF ACETABULAR DEFICIENCY BY BURCH-SCHNEIDER CAGE FOR REVISION TOTAL HIP ARTHROPLASTY IN RHEUMATOID ARTHRITIS, A MINIMUM 5 YEARS FOLLOW UP**

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Introduction: The absence of good bone stock with massive acetabular bone deficiency has been a major problem in revision hip arthroplasty of rheumatoid arthritis cases. Burch-Schneider cages are used in special cases. Materials and methods: 26 cases of rheumatoid arthritis (18 female, 8 male, mean age 38 years) with substantial bone loss type 3 and type 4 acetabular deficiency after first THA underwent acetabular reinforcement with Burch-Schneider cages and allograft . Patients were followed for loosening, dislocation, infection , screw breakage, allograft resorption, Harris hip score. Results: Revision had been needed after about 3 years (2-5 years) of first THA . After a mean follow-up of 8 (5-8) years, good stability was achieved in 24 patients and no mechanical failure was observed. Radiographic loosening with breakage of the screws was observed in only 2 patient treated with re-revision and grafting. Two cases experienced dislocation which respond to closed reduction. No deep infection was seen. Harris hip scores rises significantly from mean 49 to mean 88 in the last follow up. Discussion: Satisfactory results were observed in all but two of the cases, indicating that effective support of the acetabulum can be achieved using Burch-Schneider cages in RA revision THA cases. Using allograft for reconstruction of bony acetabulum support is mandatory for achieving good results.

**Abstract no.: 33839**

**INDICATIONS AND RESULTS OF INVERTED CRUCIFORM  
RETINACULAR RELEASE FOR TOTAL KNEE ARTHROPLASTY IN  
SEVERE VALGUS DEFORMITY**

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Introduction: Soft tissue balancing is a difficult challenge for total knee arthroplasty especially in genu valgum. We report our results in these cases. Materials and methods: 21 cases of severe genu valgum (more than 15 degrees) had entered our study. Lateral retinacular release by inverted cruciform technique used for soft tissue balancing. Preoperative and postoperative range of motion and knee scores were considered. Results: 21 cases (average age 64 years, 15 female, 6 male) were studied for minimum 2-year follow-up. The posterior cruciate ligament (PCL) was sacrificed in all knees. Preoperative valgus averaged 17 degrees, and range of motion averaged 10 degrees extension to 110 degrees flexion. Postoperative valgus averaged 5.8 degrees, and average postoperative range of motion was 2 degrees to 110 degrees. Further lateral release of the lateral collateral ligament and popliteus were required in 3 knees. Stable flexion and extension gaps were achieved in all cases, and stability was maintained at follow-up. Conclusion: This lateral cruciform retinacular release provides a simple surgical technique for most valgus deformities of the knee and allows for stable ligamentous balancing.



**Abstract no.: 33852**

**TIRUNELVELI EXPERIENCE OF COMPLICATED TRAUMA SURGERY**

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Tirunelveli District is the second-largest district of Tamilnadu State in Southern India. The City of Tirunelveli is the district headquarters. This district has a high population density, mainly residing in villages along the National Highways which pass through these villages. There is an increase in the Complicated Poly Trauma and in this district for the last ten years. Tirunelveli District reported more than 1500 injuries and 300 deaths happen after road accidents annually and this District is noted for knife injuries - approximately 80 to 120 persons get killed by knife injuries every year. This presentation will present our experience of patients with acute poly injuries in less resourced area and their successful management in the Golden Hour of Trauma by the dedicated Trauma team

**Abstract no.: 33854**

**VALGUS IMPACTED FEMORAL NECK FRACTURE, A FOLLOW UP STUDY IN 29 CASES**

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Introduction: some surgeons might manage valgus impacted fracture of the femoral neck conservatively. Our experience shows that conservative treatment may leads to future more extensive surgery, Therefore surgery must be performed. Method: From 2005 to 2010, 29 patients were studied. Five of the patients were treated by conservative methods. Twenty four patients went under surgery from the beginning. We paid special attention with no attempt to disimpact the fracture. Fixation is performed with cannulated screws in situ. In fracture with extreme valgus position, the valgus part of fracture reduced and then fixed. In two patients who were operated, the fracture was not diagnosed at the first visit. But after a week, the fracture was diagnosed by complimentary x- rays and MRI. Result: The mean follow-up was 2 years (15 month to 4 year). In one patient with extreme valgus impacted fracture we didn't try to reduce the fracture and the screws used for fixation were short, resulted in failure of fixation. All remaining patients who were treated by surgery were satisfied. In two patients who treated by conservative treatment, subsequently complicated with displacement of the fractures, later treated by bipolar hemiarthroplasty. Conclusion: There are probability of complications such as future displacement and more extensive surgery. Therefore surgical fixation is strongly recommended for this type of fracture. In extreme valgus position fractures due to probability of AVN and DJD it is better that the surgeon gives pay attention to reduce the valgus part of fracture.

**Abstract no.: 33855**

**LANGERHANS CELL HISTIOCYTOSIS CAUSING CERVICAL MYELOPATHY IN A CHILD**

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Introduction: Langerhans cell histiocytosis (LCH) is a rare disease of unknown origin primarily affects children and young adults characterized by proliferation of langerhans cell causing systemic and local effects. LCH of the craniovertebral junction is rare, reporting a 11 year old boy with LCH causing myelopathy which was treated with C1-C2 fusion. Methods: A 11 year old child presented with difficulty in walking with neck pain, instability and radiculopathy to upper limb and weakness, on further investigation and radiological studies suspected to be tuberculous osteomyelitis. surgical management for pain, myelopathy, C1-C2 destruction on radiological studies C1 and C2 fusion was done. Per-op the aspirate and tissue sample was negative for tuberculosis. Histology was suggestive of LCH and immune histochemistry was diagnosed as Langerhans cell histiocytosis, managed surgically with fusion and tapering dose of steroids. Results: child is pain free with complete recovery of muscle strength and walking with out support and has now a 2 years of follow-up with good clinical outcome. Discussion: LCH is common between 3- 10 years, 90% occurs in the bone, 7-15% occurs in spine and presents with pain, neurological deficits are rare. If there was no instability the child could have been treated conservatively with steroids and follow-up with bone scans. In our case due to instability, the patient required operative treatment.

**Abstract no.: 33858**

**MANAGEMENT OF A NEGLECTED NON-UNION (40 YEARS OLD INJURY) OF LATERAL CONDYLE LEFT ELBOW WITH ULNAR NERVE PALSY – A CASE REPORT**

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Background: Lateral condyle fractures of elbow that occur in child hood are notorious to land in non-union, even if minimally displaced. The late problems can be deformity, instability, stiffness, ulnar nerve palsy, grip weakness or in combination. Treatment in such neglected cases is focused addressing the problem alone, often leaving the non-union zone. Here we present such a case. Material & Method: A 48 yr old gentleman sustained lateral condyle fracture of his non-dominant left elbow at the age of eight. It was dealt by traditional bone setters and resulted in non-union with valgus deformity. He developed tardy ulnar nerve palsy when he was 20yr old. He reported now with cubitus valgus deformity causing a hindrance in his work and mild grip weakness. He has good range of elbow motion with no pain or instability. He underwent a corrective dome osteotomy of the distal humeral metaphysis through mid line posterior approach leaving the non-union site undisturbed. Fixation achieved by a 3.5mm reconstruction locking plate with cancellous bone graft harvested from left proximal tibia. Results: After supervised physiotherapy, he attained full range of motion in 4 weeks and the osteotomy site healed in five months. Patient didn't want any further treatment for his ulnar nerve palsy as his hand grip strength was reasonable. Conclusions: Focused treatment of deformity correction with-out trying to achieve fracture union can still yield satisfactory results in neglected non-union of lateral condyle of elbow.

**Abstract no.: 33859**

**CADAVERIC STUDY TO JUSTIFY IMPLANT SIZE AND PREVENT OVERLENGTHENING IN RADIAL HEAD ARTHROPLASTY**

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**Background:** Insertion of a radial head implant that results in radial overlengthening has been associated with altered elbow kinematics, capitellar erosions and early-onset arthritis. The purpose of this study was to identify clinical and radiographic features that may be used to diagnose overlengthening intraoperatively and postoperatively. **Methods:** Radial head implants of varying thicknesses were inserted into five cadaver specimens, which were then assessed clinically and radiographically. Implants were inserted in 1mm,3mm,5mm&7mm of overlengthening. At each stage, radiographs were made to measure the ulnohumeral joint space and the lateral ulnohumeral joint was visually assessed. **Results:** We identified no difference, regard to medial ulnohumeral joint incongruity as seen radiographically, upto 5mm of overlengthening of the prosthesis. The lateral ulnohumeral joint space gap was negligible when prosthesis of the correct size was inserted, but increased significantly at all stages involving overlengthening (0.9 mm with 1 mm of overlengthening [ $p = 0.005$ ], 2.3 mm with 3 mm of overlengthening [ $p < 0.001$ ], 3.4 mm with 5 mm [ $p < 0.001$ ], and 4.7 mm with 7 mm [ $p < 0.001$ ]). **Conclusion:** Incongruity of the medial ulnohumeral joint becomes apparent radiographically only after overlengthening of the radius by 5 mm. **Clinical Relevance:** This in vitro study indicates that the visual observation of a lateral ulnohumeral joint gap is a reliable indicator of overlengthening following a radial head prosthesis. In contrast, radiographic measurements are relatively insensitive and cannot reliably demonstrate overlengthening of <5 mm.

**Abstract no.: 33860**

**MORPHOMETRIC STUDY OF LUMBAR PEDICLES IN ADULT INDIAN POPULATION AND ITS CLINICAL IMPLICATION**

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Transpedicular screw fixation of spine is a very successful method of spinal fixation. The problem with pedicular fixation is the high index of complications due to improper placement of the screw in the vertebral pedicle. Precise anatomical measurements of the shape and orientation of lumbar pedicles are therefore necessary for the development and use of implantable devices and spinal instrumentation. Since racial variations in pedicle morphometry are well known we undertook this study in Medical College Kolkata to analyse the morphometry of lumbar pedicles in the adult Indian population. We obtained 30 sets of lumbar vertebrae from preserved sets of bones of individual adult dead bodies and measured the height, width, transverse and sagittal angulations of the lumbar pedicles and distance from the point of pedicle screw insertion to the tip of transverse process and midline. Our study found significant differences in pedicle morphometry as compared to other foreign studies, thus proving that racial and ethnic variations in pedicles do exist. Intraoperative readings were comparable with the readings obtained on dry bone thus confirming the clinical correlation of our study. These morphometric findings on lumbar vertebrae could be of some use possibly in designing pedicle screws especially in context to the Indian population. The distance of the point of screw insertion from the midline and from the transverse process can serve as useful intraoperative tools while deciding the entry point of the pedicle screw.

**Abstract no.: 33863**

**PATIENT-LEVEL CLINICALLY MEANINGFUL IMPROVEMENTS IN PAIN AND ACTIVITIES OF DAILY LIVING AFTER TOTAL KNEE ARTHROPLASTY**

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Introduction: To study patient-level clinically meaningful improvements in pain and limitation of key Activities of Daily Living (ADLs) after primary or revision total knee arthroplasty (TKA). Methods: We analysed prospectively collected data from the Mayo Clinic Total Joint Registry for clinically meaningful improvements in index knee pain severity and limitation in three key ADLs (walking, climbing stairs and rising from a chair), from pre-operative to 2- and 5-year post-TKA. Results: The primary TKA cohort consisted of 7,229 responders preoperatively, 7,139 at 2- and 4,234 at 5-years postoperatively. Revision TKA cohort consisted of 1,206 responders preoperatively, 1,533 at 2- and 881 at 5-years postoperatively. In primary TKA cohort, clinically meaningful pain reduction to mild or no knee pain at 2-years was reported by 92% with moderate and 93% with severe preoperative pain; respective proportions were 91% and 91% at 5-years follow-up. For revision TKA, respective proportions were 71% and 66% at 2-years and 68% and 74% at 5-years. 3% with no/mild preoperative overall limitation and 19% with moderate/severe preoperative overall limitation had moderate/severe overall activity limitation 2-years postoperative; at 5-years, the respective proportions were 4% and 22%. Respective proportions for revision TKA were up to 3% and 32% at 2-years and 4% and 34% at 5-years. Discussion: Our study provides comprehensive data for patient-level clinically meaningful improvements in pain and key ADLs. These data can be used to inform patients preoperatively of expected outcomes, based on preoperative status that can help patients set realistic goals for improvements after TKA.

**Abstract no.: 33873**

**EN BLOC OPEN DOOR LAMINOPLASTY FOR LUMBAR SPINAL CANAL TUMOURS**

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Introduction: Laminectomy typically are used to approach intraspinal lesions. When removal of the posterior elements have been attempted, the effectiveness of the technique has been limited by the amount of bone sacrificed. Because cases of kyphotic spinal deformity after laminectomy have been reported, the importance of the posterior supporting elements has recently been emphasized. Patients underwent En bloc open door laminoplasty in the lumbar spine for extirpation of spinal cord tumours. Objectives: We examined the safety and efficacy of the En bloc open door laminoplasty for lumbar spinal canal surgery. Methods: Seven patients who had undergone this laminoplasty for excision of spinal cord tumours. There were three men and four women, with a mean age 59.0 years. The mean follow-up period was 42 months. Two-level laminoplasty was performed in three patients, and three-level in four. The patients did not need their spinal canals to be enlarged after the intradural procedure had been performed. After excision of spinal cord tumours, the excised laminae were replaced exactly in situ to their original anatomic position. Results: The operative field was wide enough for an intradural procedure to be performed in all patients. No complications such as postoperative spinal canal stenosis, kyphosis were observed except in one patient. Findings on radiographs confirmed primary bony union in all patients. Conclusion: En bloc open door laminoplasty is a useful and safe procedure that can be used to reconstruct the posterior spinal elements throughout the whole spinal region after the intradural procedure has been performed.



**Abstract no.: 33876**

**PAINFUL LYTIC LESION OF THE PHALANX: A CASE REPORT**

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Intraosseous ganglion is a benign cyst. They are unusual, asymptomatic and often diagnosed incidentally. We describe a rare case of pain in the middle finger due to intraosseous ganglion arising in the middle phalanx. The lesion was treated with curettage and autologous cancellous bone graft which helped in relieving the pain.

**Abstract no.: 33880**

**AN ANALYSIS OF MORPHOMETRIC CHARACTERISTICS OF CROSS-SECTIONAL AREA OF PATELLAR LIGAMENT AND QUADRUPLED HAMSTRING TENDONS SAMPLES IN RELATION TO AGE AND GENDER**

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The middle of the patellar ligament and quadrupled hamstring tendons (gracilis and semitendinosus) are two types of grafts predominantly used in ACL reconstruction. The aim of this study was to determine morphometric characteristics of patellar ligament grafts and hamstring tendons grafts and to compare the obtained values in relation to subjects' age and gender. The study was carried out on 120 samples in total, out of which there were 40 samples of gracilis tendons, 40 samples of semitendinosus tendons and 40 samples of patellar ligament, distributed equally according to gender, age (between the ages of 50 and 75 years) and the side of the body from which the sample was harvested. Morphometric and histologic analyses of the samples showed that patellar ligament samples had less cross-sectional area than quadrupled tendons samples (49.29 mm<sup>2</sup> and 51.46 mm<sup>2</sup>, respectively). Sexual dimorphism was noticed in distal cross-section of gracilis tendons ( $p=0.09$ ), cross-section of quadrupled tendons ( $p=0.07$ ) and patellar ligament samples ( $p=0.01$ ) as a result of different muscular build. Also, all samples obtained from male subjects had larger cross-sectional areas in all types of samples. Furthermore, samples obtained from subjects under 60 years of age had larger cross-sectional areas than samples obtained from subjects over 61 years of age in all types of graft samples, whereby the level of statistical significance was  $p<0.001$ .

**Abstract no.: 33881**

**BONE TUMOURS**

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Although bone tumours are very rare they are of big clinical value as it is possible that any of them becomes malignant and also some of these tumours are among the most malignant tumours overall with great ability of widespread methastase. Because of the great variety of bone tumours, difference in their origin from wide range of cells that build bones and their ability to build specific histological pattern these neoplasms are very complicated to diagnose and it is common that it is not possible to set pathological diagnosis without great knowledge concerning theirs clinical and x-ray characteristics. The aim of the study was to show the incidence of bone and joint tumours on our ward during last 12 years

**Abstract no.: 33885**

**DRUG THERAPY OF OSTEOPOROSIS IN PATIENTS WITH FEMORAL NECK FRACTURES**

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Femoral neck fractures often occur because of osteoporosis. Objective. To study the effectiveness of medication treatment for osteoporosis in patients operated for femoral neck fractures. Materials and methods. 26 patients (mean age  $64,5 \pm 7,2$  years), who received hip fracture osteosynthesis, were appointed medical therapy with "Calcium-D3 Nycomed", a daily dose of 1 g of calcium carbonate and 800 IU of cholecalciferol. Control group had 29 patients. Analysis of results was assessed as a percentage of initial value of mineral density in femoral neck, greater trochanter, Ward's triangle. The influence of osteogenon on bone mineral density was assessed in 17 patients who took 2 tablets during a year. Each tablet contains 291 mg of ossein, 444 mg of hydroxylapatite, 178 mg of calcium and 82 mg of phosphorus. Mean age of patients is 63,7 years. Results and discussion. After a year the use of "Calcium-D3 Nycomed" showed an increase of bone mineral density of greater trochanter and Ward's triangle (9,8% and 12,1% respectively). Bone loss of femoral neck was 3.7%, which is associated with cortical type of structure and a low rate of metabolism. More intensive and progressing bone loss was observed in patients of control group. We analysed 17 patients with osteoporosis treated with drug for 1 year. The bone mineral density in trochanter increased by 3.9%, in ward triangle by 2.6%, in femoral neck by 0,05%. Conclusions. It should be noted that "Calcium-D3 Nycomed" and osteogenon have positive influence on bone mineral density of proximal femur.

**Abstract no.: 33890**

**POST-OPERATIVE STAPHYLOCOCCUS AUREUS INFECTION: CAUSE OF NON-UNION AND IMPLANT FAILURE**

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Introduction: Bone infection after implant surgery leading to non-union and implant failure is one of the most challenging Orthopaedic complications. This study is done to find out relation of type of pathogens causing postoperative infection with that of fracture non-union, chronic osteomyelitis and implant failure. Methodology: This is a retrograde study of 20 cases, in which post operative wound infection occurred after implant surgery from 2009 to 2012. Results: Out of 20 postoperative infected cases, 12 were infected by S aureus, 2 by pseudomonas and 1 from E-coli. 5 cases had their culture sterile. Out of 12 cases infected by S. aureus 7 developed infected non union in which 4 had serious infection also leading to chronic osteomyelitis. 5 cases of S aureus infection got cured after implant removal following union. Conclusion: Most of the postoperative wound infections are caused by S. aureus. S. aureus is the commonest organism isolated from infected non-union. Majority have early onset of infection. Early culture positive infection (within seven days after surgery) have poor outcome. In our setup S Aureus strain is sensitive to linezolid, clindamycin and vancomycin. The use of ceftriaxone for preoperative surgical prophylaxis in orthopaedic implant surgery is questionable. The ideal strategy for S. aureus infected implant is lacking. By surgical debridement, culture sensitivity specific antibiotic for 6 to 8 week and retention of implant, union were not achieved in majority of cases. New approach is required for prevention and management of postoperative S. aureus infected implant.

**Abstract no.: 33891**

**NEGLECTED CLUB FOOT MANAGED BY J.E.S.S FIXATOR  
(JESS =JOSHI'S EXTERNAL STABILISING SYSTEM) A CASE SERIES**

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**BACKGROUND:** Neglected club foot deformities remain a challenging problem for the orthopaedic surgeon. We present a case series of neglected club foot deformities treated by Joshi's External Stabilising System (JESS). **MATERIALS AND METHODS:** 8 Patients (12 feet) with club foot deformities were treated with JESS fixator and limited surgery from Jan 2010 to June 2012 in our KLE University's Dr.Prabhakar Kore Hospital & MRC, Belgaum, Karnataka State, India. The mean age was 3 years (range 1- 4). A limited soft tissue surgery like tendoachilles tenotomy or lengthening was done. Progressive correction of deformity was done by standard and simple JESS frame. After removal of JESS fixator, a short leg walking cast was applied for additional 6 weeks, followed by CTEV shoes advised till skeletal maturity. **RESULTS:** The mean follow up period was 10.9 months (range 3-24 months). The mean duration of fixator application was 3.6 months (2-5 months). A plantigrade foot and gait was improved in all patients. Forefoot adduction relapsed in one patient. Out of 12 feet, 11 were rated excellent and 1 fair according to Reinker and Carpenter scale. **CONCLUSION:** Short term functional outcome of neglected club foot managed with JESS fixator is promising and apparently a good option. **KEY WORDS:** JESS, Neglected club foot

**Abstract no.: 33892**

**GALLIAZI VARIANT: A CASE REPORT**

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Fracture of the distal radius along with dislocation of the inferior radio-ulnar joint is classically called as a Galliazi fracture dislocation. This is because radius and ulna are connected together by superior and inferior radio-ulnar joints at fix points and if a bone fractures near the joint with overlapping of fragments, depending on velocity of trauma this is compensated by dislocation of nearby radio-ulnar joint i.e. fracture of proximal ulna with superior radio-ulnar joint dislocation called as Monteggia fracture dislocation and the opposite as Galliazi fracture dislocation. Multiple variants of Monteggia fracture dislocation are described in literature but no variant has been described for Galliazi fracture dislocation. The paper describes a case in which the patient developed a Galliazi fracture dislocation along with fracture of ipsilateral displaced ulna at the same level. Routinely this is not possible because the force will get dissolved either with fracture of adjacent bone or with joint subluxation/dislocation. Both injuries denotes double trauma as happened in this patient of assault when he first fell on a out stretched hand and then tried to save his head by assault taking the force on ulna at the same level. We are reporting this case as it is unique, gives an understanding to fracture mechanisms and has not been reported yet as Galliazi Variant.

**Abstract no.: 33897**

**SIGNIFICANCE OF FIXING FIBULA IN MAINTAINING ROTATION AND ALIGNMENT IN AO TYPE 43-A FRACTURES**

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Introduction: Role of fixing fibula in AO type 43-A fractures treated by interlocking nailing of tibia is poorly defined. Current study assesses its role clinico-radiographically and functionally. Methods: Sixty patients with such fractures were followed-up for an average of 18 months. Patients were divided into two groups- Group A- fibula fixed and Group B- fibula not fixed. Tibia was nailed in all cases. Fibula was fixed with LCDCP (3.5mm). The groups were compared for differences in rotation at ankle, fracture site angulation, union time and complications. Clinical and functional outcomes were assessed at the end of 6, 12 and 18 months. 'Merchant and Dietz' criterion was used to assess ankle function. Final results were evaluated at the end of 18 months using 'Johner and Wruhs' criteria. Results: Demographics of two groups were similar with respect to age, sex, side, fracture classification and mode of injury. Average valgus angulation was significantly less in group A (avg-5°) vis-à-vis group B (avg-9°). There was significantly low incidence of rotational malalignment at ankle in group A (avg-7°) vis-à-vis group B (avg-15°). Outcome of two groups for clinical ankle score, union time and complications showed no significant differences. Conclusion: Fibula fixation with tibial interlocking nail helps in maintaining rotation and alignment of ankle in AO type 43-A fractures as compared to only tibial interlocking.



**Abstract no.: 33901**

**TRANSPEDICULAR BONE GRAFTING IN THORACOLUMBAR SPINE BURST FRACTURES**

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B. K. S. Sanjay and Gaurav Sanjay Spine Orthopaedic & Spine Centre, Dehradun, Uttarakhand 248001 The burst fracture is the commonest fracture at thoracolumbar junction. Transpedicular screw fixation is now a day is a standard procedure to fix the fractured vertebrae. However complications of delayed significant collapse of anterior body height of fractured vertebra and delayed failure of implant fixation are not uncommon. 18 patients of thoracolumbar spine (D10-L3) fractures were treated from July 1999 to June 2010. There were 13 male 5 female with the age ranging from 23 To 60 years. The procedure consists of transpedicular screw fixation of one vertebra above and one below the fractured vertebra. The height of the fracture was restored with distraction. The fractured vertebral body was reconstructed with transpedicular bone grafting. Bone graft was procured from iliac crest and from removed lamina and spinous process. Surgery was performed by a single surgeon. Whole procedure is done under fluoroscopy. All patients were followed up for at least 2 years. At last follow up, all implants remained intact. All patients had improved neurologically from at least 1 to 5 grades from preoperative status. In our opinion, transpedicular fixation and bone grafting of body of fractured vertebra restore the vertebral body height; prevents delayed anterior body collapse and enhances the chances of neurological recovery in these fractures.

**Abstract no.: 33908**

**AN UNUSUAL CAUSE OF RADIAL NERVE PALSY**

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Abstract: Iatrogenic radial nerve palsy occurs incidentally while treating humerus fracture operatively. Usually neurapraxia occurs following traction injury to nerve intra operatively leading to radial nerve palsy which usually recovers in 5-30 weeks. In our case we had operated distal humerus fracture of a young patient & fracture was fixed with the 4.5 narrow dynamic compression plate and in immediate post operative time, all sensorimotor functions of radial nerve were normal. At second postoperative day suddenly radial nerve palsy occurs with wrist drop following the suction drain removal and dressing. We had reviewed literature and found no obvious cause for second day post-operatively nerve palsy and concluded that it was due to traction injury to radial nerve while removing the suction drain in negative pressure. Radial nerve palsy recovered in three months and fracture was united.

**Abstract no.: 33910**

**A NEW METHOD IN APPLYING ISOMETRIC QUADRICEPS STRENGTHENING EXERCISE**

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**Introduction:** Demonstrating the superiority of a new exercise method which is developed to gain quadriceps strength lost after knee surgeries in a faster and stronger way. **Methods:** Thirteen patients who had knee surgeries included in this study. Patients were taught to apply isometric quadriceps strengthening exercise firstly in unaffected knee, then in affected knee (having knee surgery) when they were in supine position. Firstly, patients were taught by classical order for isometric quadriceps strengthening exercise which includes “press the back of knee downward through bed and hold leg in same position for 10 seconds”. Then, our new alternative method was taught by order of “pull the patella superiorly tightly and hold leg in same position for 10 seconds”. Afterward, quadriceps muscle contraction forces were evaluated by non-invasive Enraf-Nonius Myomed 932 EMG-Biofeedback with self-gel containing electrodes (size of 48 mm, Turklab Company, Turkey) placed on both knees. **Results:** Isometric quadriceps strengthening exercise applied by our new method (pull the patella superiorly tightly and hold leg in same position for 10 seconds) had better results in contraction forces when compared to classical order ( $p < 0.01$ ). **Conclusions:** Isometric quadriceps strengthening exercises form the main part of physical therapy programs applied after orthopedic knee surgeries. Classical order is not enough to achieve sufficient rehabilitation success. We propose that our new method containing order of pulling patella superiorly may be better choice which can be applied easily, leading better results in patient compliance and quadriceps force after arthroscopic and other knee surgeries. **Keyword:**EMG biofeedback, Quadriceps, Strengthening.

**Abstract no.: 33912**

**RADIOLOGICAL AND FUNCTIONAL OUTCOME IN UNSTABLE, OSTEOPOROTIC TROCHANTERIC FRACTURES STABILIZED WITH DYNAMIC HELICAL HIP SYSTEM**

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Pt BD Sharma PGIMS Rohtak, Rohtak (INDIA)

Abstract Introduction: Dynamic hip screw remains the implant of choice for stabilization of trochanteric fractures because of its favourable results and low rate of non-union or hardware failure. But complication rates of DHS are higher in unstable and osteoporotic trochanteric fractures. Dynamic Helical Hip System has the potential to decrease the cut out rates in such fractures. Methods: Mean age in 51 patients (24 men and 27 women) was 72.8 years. Fractures were type 31A2.2 in 28 patients, 31A2.3 in 23 patients. According to DEXA scan 41 patients had osteoporosis and 10 patients had osteopenia. Osteoporosis was grade 3 in 36 patients and grade 2 in 15 patients according to Singh's index. The mean follow-up was 1.84 years. Results: The average sliding of lag screw was 3.6 mm (range, 2-10 mm). The mean operative time was 54.74 (range, 48-65) minutes. The average Tip-apex distance was 20.24mm (range, 12-28 mm). All but one fractures united. The average time to union was 13.14 (range,11-24) weeks. There were four mechanical complications namely late helical blade migration (n=1), late medialization of shaft (n=2) and varus collapse with cut through (n=1). No patient had side plate pull-out. Average Harris hip score was 92.87 (range, 76-97). Conclusion: The use of dynamic helical hip system for stabilization of unstable(AO31A2), osteoporotic trochanteric fractures in the elderly patients was associated with reliable rates of union and functional outcome, and decreased incidence of screw cut out and side plate pull-out.

**Abstract no.: 33918**

**PROSPECTIVE STUDY COMPARING THE ORAL FACTOR XA INHIBITOR EDOXABAN WITH THE SUBCUTANEOUS INJECTION FONDAPARINUX FOR THE PREVENTION OF VENOUS THROMBOEMBOLISM IN PATIENTS UNDERGOING TOTAL HIP ARTHROPLASTY**

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Background: Recently, edoxaban is developed as a direct factor Xa (FXa) inhibitor for the prevention and treatment of venous thromboembolism (VTE) by oral administration. On the other hand, fondaparinux, which is an indirect FXa inhibitor, requires subcutaneous administration. Objective: To compare edoxaban with fondaparinux for the prevention of VTE in patients undergoing total hip arthroplasty (THA). Methods: Subjects comprised 50 hips of 50 patients (average 58 years), scheduled for primary THA. With the approval of the ethical committee, we alternately divided the subjects into two groups, Group E (edoxaban 30mg) and Group F (fondaparinux 2.5mg). There were no differences between two groups in the baseline characteristics. Each drug was administered the day after surgery and continued once daily for 11 days. On the 6th day after surgery, blood examination was performed. On the 13th day, CT venography was performed to detect VTE. We compared the incidence of VTE and side effect (bleeding and abnormal changes in the blood examination) between both groups. Results: The thrombus of internal iliac vein was observed in only one case of Group F. In one case of Group E, blood transfusion was required because of a decrease in hemoglobin (5.6g/dl) on the 6th day. The average value of D-dimer in Group E was significantly smaller ( $p < 0.001$ ) than that in Group F (5.4 versus 8.0 $\mu$ g/ml, respectively). There were no other adverse effects found by blood examination in both groups. Conclusion: Oral FXa inhibitor, edoxban, might be more effective than fondaparinux for the prevention of VTE.

**Abstract no.: 33921**

**MIS TRATMENT OF TIBIAL PLATEAU FRACTURES - ROLE OF ARTHROSCOPY**

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Introduction: The tibial plateau fractures necessitate a perfect alignment, because they have joint trajectory. It is difficult to treat these fracture especially type 5 and type 6 Schatzker. Hypothesis: the mini-invasive treatment could be applied in all cases. Method: We used the reduction of the fracture's fragment with K wire under RX and arthroscopic control, and then we fixed the fragments with K wire and screws. Results: We used this technique for the treatment of 293 tibia plateau fractures. We used Schatzker classification for their identification. For this technique we used different kind of material: K wire, screws, external fixation, fluoroscope, and arthroscopy. Discussions': First of all it is important to establish the fracture's type. It is essential in the preoperative diagnosis the laboratory investigation; radiological, and CT scan. The preoperative planning is necessary. The advantages of this method are: minimal blood lost, small infection rate, good mobilization of the knee without pain, cheaper implants. We used a single dose of antibiotics during surgery and anticoagulant for thrombembolism prophylaxis. Conclusions: This kind of articular fractures requires perfect alignment of fracture's fragments. We consider this technique minimal invasive is useful for the treatment of this kind of fracture and in most cases we have good outcome.

**Abstract no.: 33924**

**MIS TREATMENT IN ACETABULAR DISLOCATION FRACTURES WITH ARTHROSCOPIC CONTROL**

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Aim: The percutaneous reduction under fluoroscopic and arthroscopic control in fractures dislocations of the hip is a big challenge. Method: Between 2006-2012 we had 4 hip dislocations which necessitated arthroscopic control and in 3 of these the hip stability was achieved with a labral fixation by anchors. In fracture dislocation of the hip, with a big fragment of the posterior wall, we performed percutaneous reduction with K wires and canulated screw, under fluoroscopic and arthroscopic control. Results Discussions: The advantages of this method are: the articular reduction, debridement control and evacuation of the hematomas, the capsular stability, by arthroscopic fixation. In most cases the skeletal traction was used for 4 weeks and in the case with hip fracture-dislocation a 6 weeks the traction was used. During the skeletal traction the patients performed movements in hip joint by adduction- abduction, flexion – extension, and some rotations. We administrated clexane for two weeks for thrombembolism prophylaxis. A good functional outcome we obtained and the stability was achieved. In simple dislocations, or stable construct fixation full bearing is allowed at 6 - 10 weeks. Conclusion: The hip dislocations require perfect reduction and a capsular or labral tears repair, the hip arthroscopy allows this treatment using anchors fixation. The role of arthroscopy in these fractures is twofold: 1. to confirm the quality of a good reduction, 2. to accurately asses and treat the associated lesions of the labral or capsular disruption. Our experience is limited but we consider an open horizon for this pathology

**Abstract no.: 33925**

**PROPHYLACTIC SYNTHESIS OF CONTROLATERAL HIP FRACTURE IN OSTEOPOROTIC PATIENTS**

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Introduction: the study tried to evaluate the advantages of mini-invasive prophylactic synthesis of controlateral hip fractures in osteoporotic patients. Material and method: 4 patients have been operated between 2009-2010 with hip fractures in osteoporotic patients. Neck fractures Garden IV in 2 patients and pertrochanteric fractures Kyle III and IV in two others patients. The fracture site was operated in dorsal decubitus under spinal anaesthesia, we took advantage of this operation and anaesthesia to perform a minimal invasive percutaneous synthesis for the nonfracture controlateral side. We used a simple implant, a quickly method during the same surgery time and anaesthesia. The K wires with injected cement were percutaneously inserted. Through a 5 mm skin incision, a channel is created in the proximal femur bone and the implant, made of a fabric pouch hosting Titanium rods, is built percutaneously within the femur. A small amount of bone cement is then added, and interdigitates to the osteoporotic bone to further fixate the implant. Results: Rehabilitation was obtained and full weight bearing was allowed immediately. The potential benefits expected with the use of this minimally invasive method are: Quick procedure – 15 min, No soft tissue or bone damage, No bleeding, short rehabilitation period, reduced morbidity and mortality, Low cost, same drape, single anaesthesia. Conclusions: The method is simple, reproducible and economically. It can be made in emergency by the resident surgeon. The patient will be operated during the same anesthesy after the operation of fractured hip.



**Abstract no.: 33929**

**RADIOLOGICAL OBSERVATION OF LEG LENGTH DISCREPANCY AND KNEE DEFORMITY AMONG UNILATERAL DEVELOPMENTAL HIP DISLOCATION PATIENTS**

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To observe the leg length discrepancy (LLD) and accompanied knee varus/valgus deformity in matured patients with unilateral developmental dislocation of the hip (UDDH). Skeletal leg length (SLL), the length from lesser trochanter of the femur to the tip of medial malleolus (LT-MM), caudally migration of femoral head (CMFH) and the degrees of varus/valgus knee deformities was measured on the standing full leg length X-ray film and pelvic AP view. There were totally 28 patients who had unilateral hip dislocation involved in this study. 17 cases were Hartofilakidis classification II, 11 cases were Hartofilakidis III, average age was 29.80 yrs (range 13.4 - 66.2 yrs). Everyone shows caudally migration of femoral head, from 4.6mm-40.9mm, meaning 30.9mm. 20 (71.43%) cases had longer SLL on dislocated side than contralateral side ( $P=0.022$ ). 24 (85.71%) cases had longer LT-MM on the dislocated side ( $P=0.000$ ). On dislocated side 12 knees (42.86%) showed valgus and 1 knee showed varus deformities; while 15 knees (53.57%) showed varus, 1 knee showed valgus on the contralateral side ( $P=0.000$ ). Unilateral hip dislocation demonstrates distinctive characteristic of leg length discrepancy and accompanied knee deformity. There are 70% dislocated legs showed longer lengths than contralateral side, 85.71% showed longer with LT-MM. 40% of the knees on the dislocated side presents valgus deformity, 50% of the knees on the contralateral side presents varus deformity. This study comes up with warning that majority of UDDH has longer skeletal leg length on the affected side, and LT of AP pelvis X-ray film cannot predict the LLD among this group of patients.

**Abstract no.: 33933**

**DO WE REALLY NEED TO DISTALLY LOCK A PROXIMAL FEMORAL NAIL (PFN) IN 31-A1 AND A2 FRACTURES?**

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Introduction: Intra medullary implants are a preferred choice of treatment for trochanteric fractures. Distal locking of these implants is affiliated with a lot of complications. The aim of our study is to compare the results between 2 groups of PFN for 31-A1 and A2 fractures with or without distal locking. Material and Methods: A non randomized prospective study is done from July 2011 to Jan 2012. A total of 40 cases of 31-A1 and A2 fractures are included. Group A consisted of 14 patients in whom distal locking is performed and group B consisted of 26 patients in whom distal locking is not done. All patients are followed till union. Comparison is done between these 2 groups in relation to mean duration of surgery, number of radiological exposures needed intra operatively, duration for union, anterior thigh pain and mean collapse at fracture site. Results: Union is achieved in all 40 patients. The mean duration of surgery is more in group B as compared to group A. Mean number of exposures needed are also more in group B (statistically significant). 3 out of 14 in group A and 5 out of 26 in group B developed postoperative thigh pain. Comparison between the groups for mean duration for union and collapse at fracture site is found to be insignificant. Conclusion: Distal locking of PFN in 31-A1 and A2 fractures is not needed and it increases the duration of surgery and the fluoroscopy exposures.

**Abstract no.: 33935**

**EXCISION OF SEVERE HAGLUND'S BUMP (INSERTIONAL TENDINOPATHY) AND TA AUGMENTATION WITH FHL TRANSFER – OUR EXPERIENCE IN 5 FEET**

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Introduction: A wide range of surgical techniques are described for insertional tendinopathy of tendo achillies ranging from endoscopic calcaneoplasty, tendon splitting approach to complete detachment followed by reattachment of TA tendon. The aim of the current study is to assess our results of excision of bony bump for severe insertional tendinopathy of tendo achillies (Haglund's disease) and TA augmentation with FHL transfer. Material and Methods: A total of 3 patients (5 feet) suffering from severe insertional tendinopathy of tendo achillies are operated by a paramedian incision. Bumpectomy is done and in all the 5 feet the calcific nodules are found intratendinous as well as retro calcaneal. In one foot accidental detachment of TA tendon occurred intraoperatively. Debridement is followed by FHL harvest and augmentation of tendoachillies with FHL. Results: All feet had uncomplicated wound healing. At a minimum follow up of 6 months the mean FAOS score is 72.8 compared to pre operative score of 37.2. Conclusion: Surgery for severe for insertional tendinopathy of tendo achillies is always affiliated with complication of TA detachment or TA weakening, hence we recommend TA augmentation with FHL transfer routinely for such severe condition.

**Abstract no.: 33936**

**EARLY RESULTS OF PRIMARY TOTAL KNEE REPLACEMENT IN RURAL SETUP**

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Background: Total knee replacements are one of the most successful procedures in all of medicine. Materials and methods: This study is carried out at rural hospital from Nov 2010-Jan 2012. During this period 18 patients were operated. 11 patients were operated bilaterally. 16 of patients had indication of end stage osteoarthritis and Two with posttraumatic arthritis knee. 10 patients with bilateral knee affections were operated in single stage. Postoperatively patients were given anti thrombotic and antibiotics and mobilized on day 3. Patients evaluated preoperatively and postoperatively according to knee society score, which take into account pain, range of motion, stability and deduction for flexion contracture, extension lag, malalignment. It also takes into consideration function like walking and climbing upstairs. Results: Total 18 patients were operated with minimum age 45 yrs to maximum 80 yrs. Maximum follow up period is 26 mth. Patients evaluated according to knee society score. All eleven patients had pain free knee joint. One patient was having ROM 90 degrees while others had full range of motion. One of the patient had subluxation of knee postoperatively which was treated with closed reduction. All the knee joints are stable with no complaint of implant loosening. Till now we didn't face any complication like thrombo-embolism , infection etc. Conclusion: Major problem with TKA in rural setup is financial. But with proper techniques and better nursing and medical care, excellent results can be obtained in rural setup also.

**Abstract no.: 33939**

**MANAGEMENT OF NEGLECTED CERVICAL FLEXION DISTRACTION INJURIES: REPORT OF 24 CASES**

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Aim: Flexion distraction cervical spine traumas result in discoligamentous injury which can be missed because o the lack of neurological deficit or might be mismanaged without considering the posterior ligamentous complex integrity. Method: This study will demonstrate 24 such patients including 14 males and10 females. The patients were classified in three groups upon the duration passed from the initial injuries to the time of diagnosis. Group:I: those being diagnosed from a month to three months after accident(9Cases). Group II patients who were diagnosed from two months to nine months after accident (10 Cases)Group III : those who were diagnosed in a period more than nine months after trauma. (6 cases). Result: While reduction of the pathology in group I could be achieved rather easy. Reduction of group II required more complicated surgery mostly 360 degree. Reduction could not be done in group III ,although optimal alignment could be undertaken with one level corpectomy. Conclusion : management of neglected cervical flexion distraction injuries require an appropriate preoperative planning . Reduction can be achieved if the patient is diagnosed before nine months. If the interval between the injury and diagnosis passes one year reduction will be impossible ,but alignment can be achieved with one level corpectomy replaced by an autogenous bone graft or an expandable cage, stabilized by posterior instrumentation

**Abstract no.: 33941**

**MANAGEMENT STRATEGY IN POSTTRAUMATIC THORACIC AND LUMBAR KYPHOSIS**

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59 patients seen with post-traumatic kyphosis from 6 months to 11 years after trauma are presented including 13 cases of thoracic, 41 cases of thoracolumbar and 5 cases of lumbar region. Neglected compression fractures, inadequate or failed posterior instrumentation, failed reductions in type B and inappropriate laminectomy in 34 males and 25 females were the cause of kyphosis, pain and development of neural impairment. Kyphosis secondary to failed surgery were more seen in females while posttraumatic neglected kyphosis was more common in males. Foresee of surgical management, we classified these cases into two major groups. The patients were classified into two groups.: Group I : The patients with focal kyphosis Group II : the patients with Complicated Kyphosis ( Focal kyphosis associated with global kyphosis). Each group were divided into two subgroups with neurology ( + N) and without neurology (-N) For focal kyphosis without neurology (I – N) complicated anterior surgeries were used in the past but in recent years we use more often PSO. For complicated ones with global kyphosis ( II-N) combination of PSO and SPO are preferred. Once neurological signs exist (I+N & II+ N) decompression of the cord or cauda equina is necessary. This can be achieved with anterior only, anterior and posterior. We conclude that this simple formulation will provide a reasonable strategy for correction of post-traumatic kyphosis and restoring acceptable sagittal balance.

**Abstract no.: 33952**

**ARTHROSCOPIC MICROFRACTURE TREATMENT FOR FULL-THICKNESS CHONDRAL DEFECTS IN OSTEOARTHRITIC KNEE**

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**Aim:** to evaluate the clinical and radiological outcomes and second look arthroscopic findings after microfracture for full-thickness chondral defects in patients with osteoarthritis of the knee. **Methods:** From May 2010 to May 2012, 29 knees in 26 patients who had moderate osteoarthritic changes of the knee subjected to arthroscopic debridement in which we diagnose femoral full thickness chondral defect treated by microfracture; 20 patients (20 knees) had second-look arthroscopy performed after 1 year. The clinical outcomes were assessed by the radiological findings and the use of Knee Society Score (KSS) and KOOS (Knee Injury & Osteoarthritis Outcome) scale. **Results:** There was large improvement (P.05) in normal daily activities regarding tolerance and pain. The X-ray findings shows that joint spaces were increased by 1.35 mm on standing lateral and by 1.05 mm on standing anteroposterior radiographs, which showed statistical significance (P.05). During the second-look arthroscopy the defects were filled with white hard tissue resembling cartilage distributed throughout the defect. **Conclusions:** Patients with osteoarthritis of knee and full thickness chondral defects can have improvement in their function and an increase in joint space after arthroscopic microfracture procedure.

**Abstract no.: 33955**

**THE USE OF DUAL MOBILITY THR FOR FRACTURED NECK OF FEMUR-  
IS IT THE WAY FORWARD?**

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Background: Trimodular (dual mobility) hip replacements, have an increasing body of evidence supporting their low dislocation rate when used in elective surgery. There are minimal data available regarding the use of dual mobility total hip replacements for acute fractured neck of femur. Methods: A series dual mobility THR for acute femoral neck fractures were analysed with a minimum six months radio-clinical follow-up. 121 patients were identified. 9 patients had died, and 5 were lost to follow-up,. Survivorship was determined as no dislocation, nor periprosthetic fracture. Results:Of the 107 patients analysed, 1 patient had dislocated at 2 months requiring open relocation and 1 periprosthetic fracture occurred. The survivorship was 98%, with a mean follow up of 15 months (range 6-28 months).Conclusion: Although the follow up period is currently short, the low rate of dislocation, in what has previously been thought to be a high risk group for post operative dislocation, adds further evidence to the use of dual mobility cups in patients with femoral neck fractures. Whilst many aspects regarding the patient must be considered when deciding on the appropriate management of such patients, this study demonstrates that the risk of dislocation is not as high as previously thought. Further analysis will be undertaken at a longer follow up interval.



**Abstract no.: 33960**

**CARPAL TUNNEL DUE TO AN EXCEPTIONAL ETIOLOGY**

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Introduction: The carpal tunnel syndrome (CTS) is most often idiopathic. Secondary causes are uncommon. We report a case where the origin of the compression of the median nerve (MN) in the carpal tunnel is exceptional. Materials: Our female patient was 42 years of age and right hand dominant. The diagnosis of CTS was made. For seven months, she had right wrist pain, nocturnal paresthesia in the MN territory and weakness in the hand. Both the Tinel's sign and Phalen test were positive. An electrophysiological study confirmed severe CTS. The patient underwent an open carpal tunnel release. After dividing the palmar fascia, there was a bulging of fatty tissue at the distal edge of the transverse carpal ligament which was divided. A yellowish tumour measured 0.6 cm in diameter was within the epineurium. Complete excision of tumour was achieved. The histology confirmed the diagnosis of fibrolipoma with mature fat cells within the epineurium of the nerve. The nerve fasciculi were normal. Results: At the two-year follow-up, our patient did not complain of paresthesia. On examination and the Tinel's and Phalen sign were negative. Discussion: The CTS of secondary origin are rare. The literature review shows that the fibrolipoma of MN is exceptional tumour, rarely reported with a difficult management. This rare case is presented especially for the treatment because the excision was easy (not reported in the literature) and to expose a review of literature which show that some symptoms help surgeon to predict the diagnosis in order to make other explorations.

**Abstract no.: 33961**

**OUR STAGED MANAGEMENT OF KNEE DISLOCATION IN POLYTRAUMA INJURED PATIENTS**

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Knee dislocation (KD) could be incorporated in Polytrauma injured patient. There are several principles that guide management, but optimal treatment strategies remain controversial. Our aim was to present experiences in a management of KD in polytrauma injured patients. We evaluated experience during 5 years in Clinic with staged treatment of 275 polytraumatic injured patients (p), including 180p with lower leg injuries. KD was presented in 14p of patients. Following principles of primary Damage Control Orthopaedics after Advanced Trauma Life Support procedures were performed, we used our staged treatment protocol for KD trauma. Primary bleeding control was followed by secondary potential fracture identification, neurovascular control, emergency surgical care with KD reposition-immobilisation simultaneously with reanimation procedures and intensive care. Upon full evaluation of patient status we performed knee MR diagnostics and proceed to final operative treatment. In 14p with KD we found range of different injuries combination: 4p-PL corner/LCL/ACL/PCL ruptures, 3p-tibial tubercle avulsion fracture, 2p-LCM,MFPL,PCL,ACL rupture, 5p bi-ligamentar rupture; 3p concomitant transitory peroneal palsy; 0 popliteal artery injury. In all patients we performed 1-3 staged operative reconstruction regarding torn structures. Clinical results were satisfactory in all patients, upon 1 year after last performed operation. A type of knee injury and general clinical status of polytrauma injured patient dictate timing of definitive operative treatment. KD with combined instability patterns issue PCL reconstruction and repair of any torn structures. The best timing for first operation is period 7th-21st day after accident. If it is not treated appropriately, KD results in significant functional disability.

**Abstract no.: 33966**

**INFLAMMATORY CYTOKINES LEAKAGE THROUGH ANNULAR TEAR PLAYS AN IMPORTANT ROLE IN LOW BACK PAIN CAUSED BY DEGENERATIVE INTERVERTEBRAL DISC**

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**Objectives:** To investigate the relationship between inflammation cytokines expression and Low Back Pain (LBP), and disc degeneration pattern. To explore the role of annular tear in LBP in intervertebral disc degeneration (IVDD) patients. **Methods:** Human IVDs from 38 single segment IVD protrusion patients were collected during surgery. Patients were divided into two groups: LBP (+) and LBP (-). IVDD were classified into mild, moderate and severe group. Immunohistochemical staining and RT-PCR were performed to investigate the expression of TNF- $\alpha$ , IL-1 $\beta$ , iNOS, Substance P. Additionally, 91 IVD protrusion patients MRI were collected to investigate the incidence of high intensity zone (HIZ) and IVDD pattern. **Results:** No significant difference of mRNA and protein expression for TNF- $\alpha$ , IL-1 $\beta$ , iNOS, Substance P between LBP (+) and LBP (-) patients. TNF- $\alpha$ , IL-1 $\beta$ , iNOS, Substance P mRNA and protein expression were higher in moderate and severe degenerated discs than mild degenerated discs. TNF- $\alpha$ , IL-1 $\beta$  mRNA and protein expression were higher in moderate degenerated discs than severe degenerated discs. The incidence of HIZ was higher in LBP (+) than LBP (-) patients (73.8% VS 40.8%). The proportion of LBP in HIZ (+) was higher than HIZ (-) (60.8% VS 27.5%). **Conclusion:** The inflammation cytokines expression in IVDD was correlated with the severity of IVDD. The inflammation cytokines expression reached highest level in moderate IVDD. Annular tear was associated with LBP. Inflammatory cytokines leakage through annular tear played an important role in LBP in IVDD patients.

**Abstract no.: 33967**

**BOTH HIGH EXPRESSION OF CYTOKINES AND POSTERIOR ANNULUS FIBROSUS RUPTURE ARE ESSENTIAL FOR PAIN BEHAVIOR CHANGE INDUCED BY DEGENERATIVE INTERVERTEBRAL DISC: AN EXPERIMENTAL STUDY IN RATS AND A CLINICAL INVESTIGATION**

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**Aim:** Our study aim to analyse the relationship between IVDD and pain behaviour in IVDD model rats. **Methods:** L4/5 IVDD rat model was established by annular puncture anteriorly or posteriorly, sham surgery as control. MRI and histology studies were performed to confirm punctured IVDD. Pain behavioural tests were performed before and after surgery. Expression of cytokines in the nucleus pulposus (NP) including NF- $\alpha$ , IL-1 $\beta$ , IL-6, substance P and iNOS were examined by western-blot, immunohistochemical staining and RT-PCR. Additionally, the relationship between high intensity zone (HIZ) of lumbar disc and LBP was studied in 67 consecutive lumbar disc herniation patients **Results:** In both anterior and posterior models, MRI and histology studies showed remarked IVDD 2 weeks after puncture. Expression of NF- $\alpha$ , IL-1 $\beta$ , IL-6, substance P and iNOS elevated in both puncture models. The anterior disc puncture didn't induce pain behaviour changes, while posterior disc puncture lead to mechanical allodynia 1-21 day after puncture. 67.65% (23 of 34) LBP (+) patients had HIZ, and 39.39% (13 of 33) HIZ (-) patients had LBP, the incidence of HIZ in LBP (+) patients was significantly higher than LBP (-) patient. **Conclusion:** Our study indicated that rat disc puncture model could induce IVDD. Degenerated disc NP expressed high level of inflammatory cytokines. Posterior disc puncture could lead to mechanical allodynia, while no pain behaviour changes in anterior disc puncture. Both high cytokines expression and posterior AF rupture in IVDD are essential for pain behaviour change.

**Abstract no.: 33968**

**INFLAMMATORY CYTOKINES ENHANCE NOTCH SIGNALING ACTIVITY IN NUCLEUS PULPOSUS CELLS THROUGH NOTCH-JAGGED2 AXIS: A POSSIBLE TISSUE REPARATIVE RESPONSE?**

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**Objective:** To investigate how inflammatory cytokines, IL-1 $\beta$  and TNF- $\alpha$  control Notch signalling activity in nucleus pulposus (NP) cells of the intervertebral disc. **Methods:** qRT-PCR and Western blot were used to measure expression of Notch signalling proteins in NP cells treated with IL-1 $\beta$  and TNF- $\alpha$ . Transfections were used to determine role of NF- $\kappa$ B and MAPKs on cytokine mediated Notch expression. **Results:** An increase in expression of selective notch receptors (Notch2), ligands (Jagged1 and 2) and target genes (Hes1, Hey1 and Hey2) was observed in NP cells following treatment with IL-1 $\beta$  and TNF- $\alpha$ . A concomitant increase in notch signalling activity was also seen. Treatment of cells with NF- $\kappa$ B and MAPK inhibitors abolished the inductive effect of cytokines on Notch2 mRNA and protein expression. p38 $\alpha$ / $\beta$ / $\delta$  ERK1 and ERK2 contributed to cytokine dependent induction of Notch2 promoter function. Gain and loss of function studies confirmed the inductive effect of p65 on promoter activity. In contrast, p50 blocked the cytokine induction of promoter activity. Supporting the promoter studies, lentiviral delivery of sh-p65, and sh-IKK $\beta$  significantly decreased cytokine dependent change in Notch-2 expression. **Conclusions:** In NP cells, IL-1 $\beta$  and TNF- $\alpha$  promote the expression of selective Notch pathway genes and signalling activity through MAPK and NF- $\kappa$ B. These results provide an explanation for the previously observed dysregulated expression of Notch genes in degenerative disc disease. Thus controlling IL-1 $\beta$  and TNF- $\alpha$  activities during disc disease may restore notch signalling and nucleus pulposus cell function.

**Abstract no.: 33970**

**OUTCOMES OF CERAMIC ON CERAMIC CEMENTLESS TOTAL HIP ARTHROPLASTY USING A ACCOLADE TMZF FEMORAL STEM: MID-TERM RESULTS FOCUSING ON THE STEM**

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To evaluate clinical and radiological outcomes and the complications of primary total hip arthroplasty with using ceramic on ceramic non-cemented, tapered stem after five-to ten-year follow-up. 100 cases among 127 cases underwent total using Accolade TMZF femur stem and ceramic on ceramic and Secure Fit PSL acetabular cup from January 2002 to January 2007 were analyzed retrospectively after 60 months minimum follow-up. Mean follow-up was 6.6 years and mean age was 51-years. We evaluated clinical outcomes by Harris hip score and VAS score, also radiological outcomes The Student t test was used for statistical analysis. The mean Harris Hip Score improved from 57 to 92 and mean VAS score improved from 7.2 to 2.8 at the last follow up. Overall both statistical scores of patients showed a significant improvement ( $P<0.05$ ). On the last follow-up X-ray, all the femoral stems (100%) showed stable fixation but there were 51 cases of stress shields and 30 cases of cortical hypertrophy. Also, there were 22cases of "Spot welds" sign. The acetabular component revealed stable fixation in 99 cases (99%) and loosening in one case (1%). 30 cases of radiolucency were observed in the Dee Lee and Charnley zone II. As complications, there were 8 cases of heterotrophic ossification, 2 case of dislocation, 2 cases of intraoperative periprosthetic fracture, 1 case of greater trochanteric bursitis and 1 case with a squeaking sound. Primary total hip arthroplasty using TMZF femoral stem showed good results in mid term follw-up but long term studies are needed.

**Abstract no.: 33971**

**A NEW CHALLENGE TO THE C2 ANCHOR**

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Several methods have been used to stabilize the cervical spine including the use of C2 pedicle, intralaminar, transarticular screws. In past literatures, biomechanical comparisons of C2 pedicle screws with C2 intralaminar screws were reported. The stabilization technique using C2 intralaminar screws offered similar biomechanical stability to C2 pedicle screws excepting lateral bending. However, fixation methods with both C2 pedicle and intralaminar screws at a time were not reported until now. Three cases were undergone cervical spine fixation and occipitocervical fixation with C2 pedicle and intralaminar screws at a time. Case1 was vertical subluxation with rheumatoid arthritis, Case2 was reoperation with cerebral palsy, Case3 was drop head syndrome with severe osteoporosis. Case1 and 2 were undergone occipitocervical fixation, Case3 was undergone cervical spine fixation. Using C2 intralaminar screws technique is a good option because of the reduction of the risk to the vertebral artery injury during C2 screws replacement. If the patient is young with solid bone, intralaminar screw is suitable to consider safety. However, stronger anchors may be required when fusion surgery in patients with osteoporosis or rheumatoid arthritis. Theoretically, fixation with both C2 pedicle and intralaminar screws at a time can get the strongest fixed power. If the patients have a breakable bone by many different conditions, using both C2 pedicle and intralaminar screws at a time might be one of the good choices.

**Abstract no.: 33972**

**ORDINARY HERNIATION CHANGING INTO A POSTERIOR EPIDURAL MIGRATED LUMBAR DISC FRAGMENTS CONFIRMED BY MRI: A CASE REPORT TREATED WITH ENDOSCOPY**

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Posterior epidural migrated lumbar disc fragments (PEMLDF) is an extremely rare disorder. The process of posterior epidural migration of lumbar disc fragments is unknown. To the best of our knowledge, there are no reported cases of the change into PEMLDF from ordinary herniation in MRI. We described a very rare case of PEMLDF treated with micro endoscopic surgery. A 26-years-old male complained of left buttock and lateral leg pain. An ordinary herniation was showed at L4-5 in the first MRI. Unilateral symptoms changed into bilateral symptoms while waiting admission in our hospital. PEMLDF was showed at L4-5 in the second MRI at the time of admission. Micro endoscopic surgery was performed. The huge disc fragment had been out to the posterior epidural space and wrap-around the nerve root from outside. A deflection of the nerve root was observed after removal of disc fragments. A fairly high pressure for the nerve root was expected. It has been speculated that the nerve root was working as an inhibitor to posterior migration. His symptoms were relieved after surgery. PEMLDF have never reported to be treated with micro endoscopic surgery until now. Micro endoscopic surgery could get detailed observation, and may become one of the choice of surgical treatment not only the PEMLDF but also epidural lesion. An ordinary lumbar disc herniation has a possibility of development to the posterior migrated lumbar disc fragments.



**Abstract no.: 33975**

**RISK FACTORS OF DEVELOPING NEW SYMPTOMATIC VERTEBRAL COMPRESSION FRACTURES AFTER PERCUTANEOUS KYPHOPLASTY**

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**Objectives:** The purpose of this study was to evaluate the incidence and risk factors of newly recurrent compression fracture after PKP in osteoporotic vertebral compression fractures patient. **Methods:** 93 patients (mean age 69.3 years) who underwent PKP for OVCFs were retrospectively enrolled. Patients were divided into new OVCFs group and control, according to developed new acute/sub-acute symptomatic OVCFs or not. According to location of new VCFs, patients were classified into adjacent and remote fracture. Possible risk factors were analyzed using univariate and multivariate analysis, including age, gender, Body mass index (BMI), presence of old fracture, wedge angle, treated vertebral level, injected cement volume, intradiscal cement leakage, and Symptom-free interval. **Results:** 18 patients (17.5%) with 20 vertebra developed new VCF, and 40% (8/20) new fractures were at adjacent level. BMI, the treated vertebral level and intradiscal cement leakage were risk factors for new VCF; Symptom-free interval was risk factor for adjacent or remote new VCF. However, age, sex, number of total VCF, number of vertebroplasty, injected cement volume, and History of old fractures were not risk factor. Logistic regression analysis showed that intradiscal cement leakage and low BMI (BMI<18kg/m<sup>2</sup>) were the risk factors for new VCFs. The occurrence of new VCF was 15% one year after PKP. **Conclusions:** These data demonstrated an correlation between PKP and new vertebral fractures. Specifically, intradiscal cement leakage and high BMI (BMI <18kg/m<sup>2</sup>) were the risk factors of new VCFs after PKP. After PKP, adjacent level vertebral fractures occur sooner than nonadjacent level.

**Abstract no.: 33978**

**CLINICAL OUTCOMES OF 4 RIB CONSTRUCT IN TREATMENT OF SEVERE PREVIOUSLY FUSED THORACIC KYPHOSIS IN ADULTS, REPORT OF 3 CASES**

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Summary: 3 cases of severe previously fused thoracic kyphosis treated with 4 rib construct were reviewed .We report on the patient's radiographic data and complications. Introduction: Correction of severe rigid thoracic kyphosis in adults has been accomplished via a combination of anterior /posterior approaches, posterior multiple osteotomies and posterior VCR . The 4rib construct is a reliable, safe, and less demanding procedure for correcting this deformity Methods: Retrospective view of three adult patients (two male, one female), were above 18 years of age. They all displayed combined coronal and sagittal deformities and had underwent previous surgeries with associated complications. The 4 rib construct via posterior approach was operated , with minimum 2 years follow-up Results : All patients underwent proximal fixation with 4 rib construct beginning with 2nd rib to the 5th in clawing fashion with distal fixation with pedicular screws T12-L4 , Smith Peterson osteotomy was done in 2 patients Thoracic kyphosis decreased from 107 to 66 , while the main thoracic coronal curve dropped from 85 to 50 Temporary weakness in left arm in one patient was detected but was completely resolved after 2 weeks Conclusion : 4 rib construct is a valuable technique in treating severe previously fused thoracic kyphosis in adults . Though all cases had previous complications, no neurological deficit occurred after the procedure.

**Abstract no.: 33979**

**TREATMENT OF EXTRA-LARGE CARTILAGE LESIONS WITH AUTOLOGOUS CHONDROCYTE IMPLANTATION: A REVIEW OF 2 YEARS RESULTS**

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**Introduction:** A very large cartilage lesion with  $> 8 \text{ cm}^2$  in size is a big challenge. Osteochondritis dissecans, osteonecrosis and cartilage injuries are the common reasons for such a huge lesion. Patients having such lesions at a young age are bound to have a painful joint, if not treated. Autologous Chondrocyte Implantation (ACI) is the only technique that can give normal life at a young age. Purpose of this study was to find out results at two years, who had undergone this treatment. **METHODS:** A total of 8 patients underwent ACI procedure for a cartilage lesion bigger than  $8 \text{ cm}^2$  of the knee joint. There were 7 males and one female with average age of 27 years. All patients were evaluated preoperatively with X-rays, 3 Tesla MRI, Clinical examination, International Cartilage Repair Society (ICRS Score), Lysholm Score, Kujala Score, Tegner activity scale and the VAS scale. The patients underwent follow-up MRI along with clinical evaluation at 1 year and at 2 years. Patients were also evaluated with all the scores at both the times. **RESULTS:** There was no failure and all the patients had returned to the active life. There was good healing of the cartilage defect on MRI scans. All clinical scores improved substantially at 2 years duration. None of the patient required a re-surgery at the time of follow-up. **CONCLUSION:** Autologous Chondrocyte Implantation gave very good results at 2 years endpoint. However, long term follow-up with higher number of patients is must to establish the technique.

**Abstract no.: 33981**

**LARGE TIBIAL BONE GAP COVERED BY TIBIALISATION OF FIBULA**

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Large tibial gap is a major therapeutic challenge. It can be a sequel following traumatic loss of bone, infection of tibia, tumour excision, sequestrectomy, pseudoarthrotic excision. A small series of 10 cases treated by tibialisation of fibula by ilizarov method. It is a staged procedure in which excision followed by stabilization by frame and double levelled osteotomy of fibula leads to medial transport to bring fibula underneath tibial defect. After centralization of fibula acute docking of the distracted tibial ends is done with removal of olive wires and open reduction and fixation by CC screws and SS wires if needed. Frame is kept till fibular ends get united with tibia and then PTB cast is given till adequate consolidation occurs. Further protection with PTB type of corset is provided for support till fibula hypertrophied. We have analysed our result considering criteria like covering of gap by fibula, range of movement in knee and ankle, union time, patient satisfaction. Our results as per our criteria 70% excellent, 20% good and 10% poor. A well planned step by step ilizarov surgery to cover the large defect in tibia is an excellent method in challenging cases of large bone gap. It is different from classical huntington procedure wherein fibula is transported to tibia in a single step. Fibula can grow within 1 yr and completely replacing tibial gap.

**Abstract no.: 33987**

**TARSOMETATARSAL FRACTURE-LUXATION - AN INJURY NOT TO SKIP**

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The tarsometatarsal fracture-luxations, referred as Lisfrank injury, are common enough so that orthopedic trauma surgeons will probably encounter few, but still rare in the daily practice. As these are often associated with other prominent, high-energy fractures the rule is confirmed that the second one is missed. Clinical suspicion, examination and diagnostic X-ray protocol is the key to prevent the seriously disabling complications these injury can lead to if not diagnosed and treated promptly. The example case is a 40 y.o. man, crushed by a falling tree. A bimalleolar fracture of the same ankle occurred, L3 to L5 compression fractures - all stabilised. The midtarsal fracture-luxation was neglected and four months after the injury he was still not able to walk on the leg. The gross soft tissue disfigurement of the foot, repeated X-ray and CT confirmed the clinical suspicion of a neglected non-treated Lisfrank injury, presented as a homolateral lateral shift of the mediotarsus related to the tarsal bones by a complete row. Dorsal subluxation of the second and third metatarsal bases was present as well. Fragmentation of the cuboid bone could be still clearly seen. Through two parallel dorsal incisions an open reduction and internal fixation with canulated screws was performed with concomitant fusion of the medial three tarsometatarsal joints. In 8 more weeks full weight bearing was allowed with no associated pain and excellent cosmetics of the foot. The Lisfrank injury must not be skipped as it is always disabling if not recognized and treated.

**Abstract no.: 33988**

**DISSEMINATED INTRAVASCULAR COAGULATION (DIC) AFTER  
CERVICAL SPINAL CORD INJURY**

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DIC is abnormalities of coagulation caused by internal or external factors and micro-thrombosis causes multiple organ failure (MOF), and the massive bleeding occurs because of consumption of platelet and coagulation factors. We report two rare cases of DIC following cervical spinal cord injury. Case1: A 26 year-old man suffered from C5 fracture and incomplete paralysis below C5 level (Frankel B). He got better after several adequate treatments but suddenly DIC occurred at day 16 and he died at day 19. Case2: A 70 year-old man suffered from C4 dislocation and complete paralysis below C5 level (Frankel A). Reposition and proper treatments were performed but DIC occurred and he died at day 4. Many cases are reported that trauma with head injury causes DIC. Brain parenchyma and highly vascular connective tissue of the choroid plexus and meninges might be important pools of systemic coagulation components. But few reports are available that patients with spinal cord injury accompanied by damage of dura or arachnoid cause coagulopathy. This report reveals that only spinal cord injury has a possibility of causing DIC. Further studies must be made, antifibrinolytic (thrombotic) DIC might be occurred in case 1 because acute inflammation and multiple organ failure were seen at the same time and massive hemorrhage was seen later. On the contrary, fibrinolytic (hemorrhagic) DIC might be occurred because suddenly hemorrhage was occurred without organ failure in case 2. We must take care of coagulopathy when we treat these patients and once DIC occurs, it makes fatal prognosis.

**Abstract no.: 33990**

**KNEE STABILITY AFTER ARTHROSCOPIC ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING THE MIDDLE THIRD OF THE PATELLAR LIGAMENT AND QUADRUPLED HAMSTRING TENDONS GRAFTS (A TWO-YEAR FOLLOW-UP)**

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Knee stability after surgical anterior cruciate ligament (ACL) reconstruction using quadrupled hamstring tendons graft (gracilis and semitendinosus) and the middle third of the patellar ligament was compared. All subjects participating in this study had ACL rupture diagnosed by clinical examination and MRI and underwent identical surgical procedure apart from the choice of graft. Total of 112 patients with either patellar ligament or quadrupled hamstring tendons graft were evaluated during 24 months after the surgery. Patients were similar according to age, sex, activity level, knee instability level and rehabilitation programme. Clinical tests and a measuring instrument KT-1000 arthrometer were used to evaluate the knee stability after the reconstruction. During the 24-month study there were no significant differences in clinical stability of the knee and the use of both grafts resulted in satisfactory knee stability. The difference between the groups according to the graft was noticed 6 months after the reconstruction when the results obtained by a measuring instrument showed that knee stability was significantly higher in patellar ligament graft (Fisher's exact test,  $p=0.022$ ).

**Abstract no.: 33993**

**EVALUATION OF ACHILLES TENDON FULCRUM IN THE MANAGEMENT OF COMPLEX FRACTURES OF CALCANEUM BY EXTERNAL FIXATOR**

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Background: Controversies exists regarding the prognostic factors in the management of calcaneal fractures. This study was conducted to evaluate the achilles tendon fulcrum for its predictive value in the surgical management of complex fractures. Methods and Materials: Fifty-four patients with complex fractures (comminuted, compound and intra-articular) of calcaneum, managed by surgical intervention were included in this study as per inclusion-exclusion criteria. All were managed by an External Stabilisation System (JESS) based on ligamentotaxis. Sixteen (29.6%) patients with significantly depressed subtalar articular surface required additional bone grafting (cancellous autograft). The mean follow-up period was 19.5 months. These patients were evaluated for their functional outcome by American Orthopaedic Foot and Ankle society (AOFAS) Score for the ankle and hind foot. Observations and Results: Achilles tendon fulcrum was measured in normal side of these patients, which was then compared with the postoperative fulcrum length. Only thirteen (24.0%) patients had persistent heel pain in long-term follow-up and all of these patients were having shorter achilles tendon fulcrum. Thirty-nine patients (72.2%) had good final long-term outcome as evaluated by AOFAS. Twenty-one (38.9%) patients had shorter postoperative achilles tendon fulcrum. All patients with small post-operative achilles fulcrum showed poor and unsatisfactory results. Conclusion: Achilles tendon Fulcrum length shortening is one of the factors associated with suboptimal results of surgical management of fractures of calcaneum.



**Abstract no.: 33994**

**A MULTIPLANAR EXTERNAL FIXATOR ASSEMBLY FOR COMPLEX PROXIMAL HUMERAL FRACTURES: A NOVEL MANAGEMENT MODALITY**

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Proximal humeral fractures are the second most common upper-extremity fracture. Osteoporotic, comminuted, and displaced fractures of upper-end humerus with or without compromised soft tissue were considered as complex fractures. Displaced proximal-end humeral fractures are often unstable and could be associated with injury of the rotator cuff and avascular necrosis of the head of the humerus. Avascular necrosis of the head is found in 12% to 34% cases of 3-part fracture and 41% to 59% cases of 4-part fracture. The reason attributed to this is an increased risk of loss of blood supply to the head of the humerus in 3-part or 4-part fractures. Many modalities of management, including nonoperative management, percutaneous multiple K-wire fixation, fixators, and open reduction and internal fixation by plate/screws have been described for the treatment of these complex proximal humeral fractures. Despite early exercise programs, the problem of shoulder stiffness is associated with a conservative protocol. To overcome this problem, early mobilization of the joint is mandatory, which is not possible with conservative treatment / K-wire fixator before 3 weeks. Open reduction and internal fixation requires soft tissue stripping, which may lead to higher chances of avascular necrosis of the head of the humerus and stiffness of the shoulder. Thus, the above-described complex fracture patterns present extra challenge to practicing orthopedic surgeons. In this report, we aimed to present a multiplanar external fixator assembly with the technique of indirect closed reduction of complex proximal humeral fractures.

**Abstract no.: 33997**

**MANAGEMENT OF NON-UNION OF TIBIA WITH MONORAIL EXTERNAL FIXATOR**

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**Introduction:** Tibial non-union as a sequelae to compound fractures are increasing due to increase road traffic accidents. Tibial non-union is functional and economical challenge for the patient, as well as a challenging for the surgeon. Tibial non-union includes infective non-union, gap non-union secondary to traumatic bone loss. Treatment includes resection of infected bone creating bone gap followed by application of either ring or unilateral external fixator. Conventionally ilizarov ring fixator is use and bone transport is done with principle of distraction osteogenesis. Ring fixator has many limitations. Monorail external fixator can be used as treatment modality in these complex tibial shaft non-union.

**Methods:** 26 patients (19 male and 7 female) aged 18 to 54 years underwent surgery with resection of nonviable bone, followed by application of monorail external fixator for non-union of tibial shaft fractures with or without bone loss. Bone transport was done with monorail fixator in cases of bone gap. The lengthening index, Radiographic consolidation index, functional status, bone healing, and various problems, obstacles and complications encountered during the treatment were assessed and analyzed.

**Results:** All patients achieved bone union. Bone healing was excellent in 18 and good in 8 patients. None had neurovascular complications, joint subluxations, or refracture of the regenerated bone. Most common complication encountered with treatment was pin track infection which were managed by regular pin track care and local antibiotic injections. Eight patients had delayed union and underwent bone grafting.

**Conclusion:** Bone transport using a monolateral external fixator is safe and effective for treating Complex non-union of the tibial shaft.

**Abstract no.: 34001**

**CLINICAL AND RADIOLOGICAL COMPARISON OF PLF AND PLIF TECHNIQUES IN MULTILEVEL LUMBAR SPINAL STABILIZATION: A RANDOMIZED PROSPECTIVE STUDY**

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**Aim:** In literature, it is claimed that there is not a significant difference between PLF and PLIF techniques. However most of these studies investigate fusion cases concerning short segments. In this study, clinical and radiologic comparison of these techniques was aimed in fusions concerning 3 or more segments in degenerative spinal diseases. **Method:** A total of 84 patients with degenerative spinal diseases treated between January 2006-June 2009 were included in the study. PLF was applied after a standard decompression in Group 1 and fusion with PLIF technique was applied in Group 2. Radiologic assessments were done besides postoperative ODI and VAS scores preoperatively and postoperatively with 6 month intervals. **Result:** There was a significant difference in favour of Group 1 in terms of operative time and blood loss. According to 41 month clinical and radiologic results, ODI declined to  $11,98 \pm 3,10$  from  $52,81 \pm 9,09$  in Group 1 and  $7,84 \pm 4,02$  from  $49,73 \pm 4,13$  in Group 2. VAS scores declined to  $4,62 \pm 1,98$  from  $7,91 \pm 1,34$  in group 1, to  $3,24 \pm 1,14$  from  $8,18 \pm 0,98$  in Group 2. Radiologically better results were obtained in correction of coronal plane lumbar lordosis angles in Group 2. Better results were obtained in evaluation of lordosis angles (to  $27.5^\circ$  from  $22.4^\circ$  and to  $35.3^\circ$  from  $20.7^\circ$ , respectively) **Conclusion:** PLIF must be preferred in treatment of multilevel degenerative spinal diseases and instabilities which do not respond well to conservative treatments. Long operative time and high blood losses must be taken into consideration in terms of mortality and morbidity particularly in the elderly and disabled patients when PLIF technique is preferred.

**Abstract no.: 34004**

**REMOVAL OF DISTAL LOCKING SCREW OF INTERMEDULLARY NAIL OF FRACTURES OF SHAFT OF LONG BONE OF LOWER LIMBS**

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33 patient with 37 fractures in shaft of long bones of lower limbs had been followed up at time of admission for removal of distal locking screw and following data collecting about them age, sex, diagnosis, site of fracture, pattern of fracture, hospital stay, anaesthesia given for removal, duration between application and removal and union status at time of removal Sample consist of 33 patients with 37 fractures, 22 of them are femori and 15 are tibia fractures Age of patients range from 18 to 70yrs with mean of 30 yrs There are 5 females and 28 males. Mean hospital stay is 2 days. Duration between application and removal range from one and half month to 13 months with mean of 4.2 months. All screws removed under local anaesthesi except two cases removed under spinal and one under general. All cases locked by one screw except 5 cases locked by two. Dynamization should not be considered as routine but it is indicated in some cases.

**Abstract no.: 34006**

**OPEN GRAFTJACKET REPAIR OF IRREPARABLE ROTATOR CUFF TEARS**

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**Introduction:** The management of symptomatic irreparable rotator cuff tears remains a challenge for shoulder surgeons with numerous techniques described and mixed results shown. There has been a search for biological techniques to restore normal anatomy and biomechanics. GraftJacket© allograft is one of these biological options. We describe our results using an open technique and look at the results of allograft for irreparable rotator cuff tears in the literature. **Methods:** Twenty patients with massive irreparable rotator cuff tears were treated with an open placement of GraftJacket© allograft by a single surgeon. All patients were evaluated preoperatively and postoperatively using the Disability of the Arm, Shoulder and Hand (DASH) score along with an assessment of the range of movement. **Results:** The range of motion within the shoulder improved significantly ( $p < 0.001$ ) for external rotation, abduction and forward flexion. The DASH scores improved significantly within 6 months of surgery ( $p < 0.001$ ) and continued to improve up to the 24 month period with significant improvement also seen between 6 months and 12 months ( $p < 0.0001$ ) and 12 and 24 months of follow-up ( $p < 0.026$ ). The surgical time was less than 90 minutes. **Conclusions:** Our study shows that an open technique with GraftJacket© allograft in the management of irreparable rotator cuff repairs shows results similar to that of arthroscopic techniques with significantly reduced operative time. Whilst allograft for rotator cuff tears in the literature has had mixed results, GraftJacket© shows good results with continued improvement for at least 24 months and does not restrict further surgical options.

**Abstract no.: 34008**

**INTRAMUSCULAR MYXOMA MIMICKING LOW GRADE FIBROMYXOID  
SARCOMA**

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We describe a case of IM of the buttock region mimicking low grade fibromyxoid sarcoma. A 55-year-old woman exhibited a slowly growing mass in her buttock for a period of eight years. The tumour appeared as a well-defined ovoid mass with a cystic lesion on MRI images, and mild uptake on PET images was seen. This was originally misdiagnosed as low grade fibromyxoid sarcoma (LGFMS) after core-needle biopsy. The mass was excised en bloc and sent for histology. The surgical specimen showed the features of LGFMS with the same characteristics as those mentioned in the previous biopsy report. One year after surgery, MUC4 expression, a highly sensitive and specific immunohistochemical marker for LGFMS, was not detected upon re-examination; therefore, a conclusive diagnosis of IM was made. The patient had no local recurrence at the 3-year follow-up. Our case suggests that IM with mild FDG uptake is a rare condition that is frequently confused with other low grade malignant myxoid tumours.

**Abstract no.: 34009**

**USE OF AUTOGENOUS HAMSTRING TENDON GRAFT FOR RECONSTRUCTION OF TENDOACHILLIS TENDON RUPTURE WITH LARGE GAPS**

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**Aim:** To study simple yet effective method of reconstruction of Tendoachillis tendon ruptures with large gaps using Autogenous Hamstring tendons. **Material:** Study includes 25 cases of Tendoachillis tendon ruptures with gap more than 5 cm. Gaps were resulted due to neglected trauma or degenerated tendon ruptures- both Insertional and non insertional. **Method:** Reconstruction of tendoachillis tendon was done with autogenous hamstring tendons either Semitendinosus tendon or gracillis tendon. Till date various studies have been done with reconstruction using Peroneus brevis or FHL tendons, but they have limitations in closing large gaps and are associated with morbidity due to loss of action of the donarmuscle /tendon. **Results-** 1) In present study, it was easy to manage the large gaps without keeping the foot in equinus , 2) Wound healing was satisfactory, 3) Post-operative strength of Tendoachillis tendon was near normal. This technique is easy to close large gaps in traumatic conditions, while in degenerative conditions allows surgeon to debride the calcified or degenerated tendon generously without worrying about the gaps created. Hamstring tendons are routinely used in ACL reconstruction, similarly Tendoachillis tendon reconstruction is successful using Hamstring tendons when gaps are large than 5 cm.

**Abstract no.: 34010**

**EDOXABAN COMPARED WITH FONDAPARINUX FOR THE PREVENTION OF VENOUS THROMBOEMBOLISM AFTER TOTAL KNEE ARTHROPLASTY**

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Introduction: Despite thromboprophylaxis, total knee arthroplasty (TKA) carries a high risk of venous thromboembolism (VTE). Edoxaban and Fondaparinux are factor (F) Xa inhibitor in clinical development for the prevention and treatment of thromboembolic events. Purpose: The aim of this study is to evaluate the effect and bleeding complication compared between Edoxaban ( E group ) and Fondaparinux (F group) for the prevention of VTE after TKA. Methods: We randomly assigned 30 consecutive patients who underwent TKA to receive subcutaneous doses of Fondaparinux or oral administration of Edoxaban for ten days. Clinical outcomes was evaluated by amount of bleeding post-operative drain, transfusion rate, haemoglobin value, D-dimer value, incidence of venous thromboembolism (VTE), post-operative range of motion, post-operative complications. Results: The incidence of VTE was 4 knees (26.7%) in the E group and 1 knee (6.7%) in the F group (P=0.16). There was no incidence of pulmonary embolism in both groups. There was no significant difference between both groups in the amount of bleeding post-operative drain, transfusion rate, haemoglobin value, D-dimer value and the range of flexion at postoperative 5 months. 4 knees in E group and 8 in F group had wound swelling and delayed wound healing. 2 knees in F group had flexion contracture. There was no infection in both groups. Conclusion: In patients undergoing TKA, there was no significant difference between Fondaparinux and Edoxaban in the incidence of VTE and bleeding complication.



**Abstract no.: 34011**

**INTERNAL FIXATION OF FRACTURES OF MID-SHAFT CLAVICLE –A BETTER ALTERNATIVE TO CONSERVATIVE TREATMENT IN SELECTED ADULTS**

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**Introduction:** The purpose of study was to evaluate the results of internal fixation with conservative treatment. **Methods:** 44 cases of fractures of mid-shaft of clavicle in adults (average age 26.5 years) treated by plating - 36 cases and nailing - 8 cases .The functional and cosmetic results were compared with 56 cases of adult fractures treated conservatively. All patients were assessed clinically and radio logically at 1, 6, 12 and 20 weeks. At Clinical assessment, functional outcome was assessed by Constant Murley score, visual analogue score, and return to daily activities and by patient's satisfactory rating. Out of 24 cases, 15 were males & 9 were females. All patients were followed up from 2.5 to 5 years with an average of 2.5 years.**Results:** At 6 weeks, the mean constant Murley score was 86, the average visual pain analogue score was 2 out of 10, and average time to normal functional recovery and resumption to work was 48 days. 88% of patients were satisfied and 84% would choose the same operation again. 42 patients show radiological union at 18 weeks. Two patients develop infection and require implant removal. More than 70% of patients treated conservatively had dissatisfaction in terms of prolonged recovery, persistent deformity and residual pain for as long as 18 months. **Conclusion:** Grossly displaced mid-shaft fractures of clavicle in adults treated by plating or nailing results in better earlier functional and cosmetic outcome and earlier resumption to work as compared to conservative treatment

**Abstract no.: 34014**

**BILATERAL TRAUMATIC KNEE DISLOCATION WITH VASCULAR INJURY  
IN ONE KNEE**

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Introduction: Knee dislocations are rare and result of high velocity injuries requiring urgent diagnosis and treatment to avoid vascular complications and amputation. Injury to peroneal nerve is common and recovery is unpredictable. Methods: Patient with history of fall from height of 6 floor after cable snapped. Unable to stand with dislocation of both knees. Right knee revealed decreased Sensations, cold and absent distal pulses with foot drop. Angiogram showed occlusion of right popliteal artery at the knee with no distal flow. Closed reduction of both knees and stabilization with k-wires of right knee as it was unstable, repair of popliteal artery with resection and end-to-end anastomosis with fasciotomy. 4 weeks later k-wires removed and skin grafting done. MRI right knee showed ruptured ACL and PCL, disrupted fibular collateral ligament and posterior joint capsule with undisplaced fracture of fibula head. ENMG showed right lateral popliteal nerve injury. MRI left knee showed ruptured ACL, Grade 2 fibular collateral ligament injury. 3 months later arthroscopic ACL reconstruction of left knee after achieving flexion of 120 degrees on CPM. 5 months later LCL tear right knee and common peroneal nerve treated with LCL reconstruction using tibialis posterior allograft in figure of 8 between lateral femoral condyle and fibular head and double breasting, arthrolysis and common peroneal nerve neurolysis. Results: 7 months pain free with left knee ROM 120° and right 80° and 2/5 power right ankle dorsiflexion. Right knee arthroscopic ACL and PCL reconstruction now planned for right knee.

**Abstract no.: 34022**

**SEVERE THORACICOLUMBAR COMMUNATED BURST FRACTURES  
TREATED WITH POSTERIOR PEDICLE SCREW FIXATION**

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Treatment of severe thoracolumbar comminuted burst fracture remains challenge. It has been recommended that severe fractures with load sharing scores 7-9 should be surgically managed with anterior fixation systems. Anterior fixation, however, is technically demanding with extensive soft tissue disruption. In this retrospective study, we reported 53 cases of severe thoracolumbar comminuted burst fracture of scores 7-9 who were treated with posterior pedicle screw fixation followed by 2-month bed rest. Finite element method was used to simulate the bone healing after fixation. In an averaged 38.9 month follow-ups, all the patients had improvement in pain and function evaluated by Frankel scale and Oswestry disability index. Six had failure of screws at a minimal one year post-operation after achieving the stability. Finite element simulation showed the posterior pedicle screw system with biomechanical stability and required strength. Our results indicated that the posterior pedicle screw system combined with bed rest could gain satisfied clinical results in management of severe thoracolumbar burst fracture.

**Abstract no.: 34024**

**REIMPLANTATION OF A TOTAL HIP PROSTHESIS IN A GIRDLE STONE HIP**

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Hemiarthroplasty (unipolar or bipolar) of the hip is a commonly performed procedure in elderly patients with intracapsular displaced fractures of the neck of femur. An improperly implanted bipolar prosthesis creates more problems, with one of the treatment options being a girdlestone arthroplasty. And the decision of reconstruction of a girdle stone hip is a tough one to make. A 60 year old male patient had sustained fracture neck of femur following a fall while working one and half years back. He underwent a cemented bipolar hemiarthroplasty. Postoperatively the patient had a painful and stiff hip as the prosthesis was improperly implanted, with the prosthesis being proud and the cement extravasated. Girdlestone arthroplasty was done as a treatment for painful, stiff hip joint. We successfully converted the girdlestone hip to a total hip arthroplasty. The cement was removed without the need of an extended trochanteric osteotomy and a long cemented stem and an uncemented acetabular cup was used to reconstruct the hip.

**Abstract no.: 34025**

**E-TRAUMA- FACT OR FICTION?**

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**Introduction** The trauma list is a unique operating list that is dedicated to treating acute orthopaedic trauma. It is important in order to; reduce unnecessary delays in operating upon trauma patients, reduce the amount of operating performed out of normal hours and avoid cancellation of elective surgical cases to accommodate trauma patients. The aim of this re-audit is; 1. To identify reasons for delays and cancellations 2. To determine if suggestions and recommendations from original audit have reduced delays and cancellations on the trauma list. **Material and methods** Data was collected prospectively over a 105 day period. **Results** A total of 457 operations were booked on a total of 89 trauma lists (mean 5.13/list versus 4.6/list from original audit). 80 (17.5%) operations were cancelled (versus 24.7% original audit). The mean delay to list start time was 43 minutes (versus 40 minutes original audit), while the mean intra-operative delay was 15 minutes (versus 21 minutes original audit). **Conclusion** The main reasons for cancellations were; list overrunning (71%), patient deemed unfit by anaesthetist (15%), and patient did not arrive for operation (5%). The main reasons for delay in starting the list were; operating team and/or anaesthetist still seeing patients (61%), delays in patient being transferred from ward to theatre (9%) and late change to the order of list (7%). Whilst list start time, inter-operative delays and number of cancellations were all improved from the original audit, we conclude that trauma lists are routinely delayed, which can result in patients being cancelled.

**Abstract no.: 34027**

**DOG TOOTH PRESENTING AS A RETAINED FOREIGN BODY IN THE HAND**

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Accidental penetration of foreign body in the hand is common particularly in the labor class. These foreign bodies can sometime be missed initially and the patient can present later with some complication. We present a case of dog tooth presenting as a retained foreign body, which has been rarely reported. A 35 year old male presented with pain and swelling in the right hand 2 months after a dog bite to the same hand. A radiograph showed a foreign body resembling a dog tooth, which was confirmed with a CT scan. The patient underwent removal of the foreign body without any complication.

**Abstract no.: 34028**

**MARRIAGE, FERTILITY, AND UNEMPLOYMENT RATE AFTER TREATMENT OF MALIGNANT BONE AND SOFT TISSUE TUMOUR: A JAPANESE SINGLE CENTER EXPERIENCE**

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**Introduction:** The prognosis of malignant bone and soft tissue tumour has improved markedly in recent years. Marriage and giving birth are important events for human beings including cancer survivors, and labor also affects the quality of the remaining life. We investigated these events after treatment of malignant bone and soft tissue tumours. **Materials and methods:** We surveyed the clinical data of 35 patients who had been treated for bone and soft tissue sarcoma under the age of 40 years old, primarily diagnosed in our hospital. The average age was 25.9 years old. There were 19 males and 16 females. The average follow-up period was 38.1 months. We examined the marriage rate (married persons/total number of patients), fertility rate (number of offspring/ married patients), and the unemployment rate at last follow up. **Results:** The marriage proportion for male patients was 0.42 (8/19), whereas that of female patients was 0.38 (7/16). A total of 18 offsprings were born to the married patients. These offsprings had no birth defects or congenital anomalies. The fertility rate of male patients was 0.75 (6/8), whereas that of female patients was 0.86 (6/7). There were no significant differences between these rates. The unemployment rates were significantly higher in female (7/16), compared to male (1/19). **Conclusions:** These results suggest that treatment of malignant bone and soft tissue sarcoma had little influence on marriage and fertility of the patients between male and female. Health of their offspring were not disturbed. The unemployment rate of the female patients were high.

**Abstract no.: 34031**

**INCIDENCE OF INFRAPATELLAR BRANCH OF SEPHANOUS NERVE INVOLVEMENT IN DIFFERENT SKIN INCISIONS USED FOR AUTOGENOUS HAMSTRING GRAFT HARVEST FOR ARTHROSCOPIC ACL RECONSTRUCTION**

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**Aim:** To find out the incidence and extent of sensory loss caused by different skin incisions used for autogenous hamstring graft harvest in arthroscopic ACL reconstruction. **Method:** Thirty patients were included in the study and randomized into two groups as per the skin incisions used for graft harvest i.e. Vertical and oblique. They were followed up to period of six months after ACL reconstruction. They were evaluated with VAS score, SF-12 questionnaire and area of sensory loss. Length of incision was also noted. **Results:** The groups did not differ in demographic data and outcome measures at baseline. Incidence of sensory loss was significantly higher in vertical incision group than oblique incision group. Area of sensory loss was higher in vertical incision group than oblique incision group. Patients with oblique incision were more satisfied than vertical incision group patients. **Conclusions:** Vertical incision group patients has higher incidence of injury to infrapatellar branch of sephanous nerve than oblique incision group patients. Although better outcome was reported in oblique incision group, but the sensory loss does not impair normal daily activities in the patients of vertical incision group.



**Abstract no.: 34033**

**SINGLE STITCH DHS FOR STABLE INTER-TROCHANTERIC FRACTURES**

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Dynamic Hip screw(DHS) or the sliding hip screw is the golden standard for stable inter trochanteric fractures. With the availability of Intra Medullary (IM) nails for such fractures, more and more fractures are being fixed by nails even though there is no evidence to prove that IM nails are better than the DHS for such fractures. We describe here a minimally invasive keyhole technique of fixing such stable inter trochanteric fractures with a regular DHS. The whole surgery can be done through a small skin incision of less than two centimetres in length using a sleeve through which all the regular instruments are passed. We have been doing such surgeries for the past 12 years with very gratifying results. The technique also has been refined over the years. The advantages of this procedure are – Closed surgery, preservation of fracture hematoma, less tissue dissection, cosmetic scar, early mobilisation due to lesser pain, lesser post operative analgesics required, less bleeding as the sleeve itself retracts and stops bleeding, lesser hospital stay, less nursing care, lesser assistants during surgery, etc. It becomes more economical as less number of suture material is required to sew the wound, drain may not be required, OT time is reduced leading to better utilisation of the OT, etc. The Disadvantages are - Useful only for stable fractures, few additional instruments are required, learning curve is high. In this presentation the technique is demonstrated with a video clip and its advantages are compared with a regular DHS technique.

**Abstract no.: 34034**

**STABLE FIXATION OF COMMINUTED FRACTURES OF PATELLA (CFP) USING MULTI-ARMED (“STAR”) PLATE OF AUTHOR’S CONSTRUCTION.**

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Introduction: Traditional surgical treatment of patellar fractures are similar without exception for comminuted fractures of patella (CFP). Some researchers recommended partial or total patellectomy, despite the fact patella plays key role in biomechanics of knee joint. Nowadays, popular surgical method for CFP is tension band wire with or without inter-fragmentary screw fixation. Some suggested tibial tubercle osteotomy. Our experience shown above mentioned methods are not effective Methods: We developed alternative method of treatment for CFP using cadaver models and a multi-armed (“star”) plate. Aim of this study, approved by our Institutional Review Board, was to test the newly designed implant for CFP in clinical conditions. All patients gave their written consent prior to participation in our study. Between 2007 and 2013, 32 patients with CFP were hospitalized in Odessa (Ukraine) Centre of Traumatology and Orthopaedics treated using “star” plate. Of those 32 patients, 18(56%)-male and 8(25%)-female with mean age of 58 years (range:23-73 years). common mechanism of injury was fall onto the knee. Patients were followed for 24 months. “Star” plate was removed after one year. Results: usage of our universal multi-armed (“star”) plate for treatment of CFP yielded success rates with 91% survival. This method allowed stable fixation of CFP with earlier mobilization, 10-14 days after surgery without weight bearing and with it one month later. We achieved almost complete functional restoration of patellar-femoral joint with no limitations of movements. Thus we recommend application of this plate as an optimal method of treatment of CFP. No conflict of interest

**Abstract no.: 34036**

**ZHANG'S MODIFIED POSTERIOMEDIAL APPROACH FOR FIXATION OF TIBIAL AVULSION FRACTURES OF POSTERIOR CRUCIATE LIGAMENT : OUR EXPERIENCE OF 20 CASES**

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Introduction: PCL (Posterior Cruciate Ligament) avulsions usually occur at the tibial attachment and are more common in young individuals. Partial PCL avulsions with a negative posterior translation can be well managed conservatively whereas complete avulsions with posterior subluxation are an indication for surgery. Methods: From January 2011 to December 2012 we treated 20 patients with complete PCL avulsions using the modified postero-medial approach of gastrocnemius as described by Zhang et al . Whereas most of our injuries were fresh (n=16); 4 patients had delayed presentation (>3 months after injury). The PCL was easily accessible in fresh cases, though peripheral releasing was necessary in delayed cases to overcome the ligament retraction and to refresh the fracture bed. Fixation was done with lag screw and washer in 18 and suturing of bony fragment was done in two cases as the fracture was comminuted. Results: At the mean follow-up period ranging from 1-3 years (mean 1.72 years), bone union had occurred in all patients and the mean Lysholm score was 94.27. Functional outcome as evaluated by Lysholm score revealed excellent results in 15, good in 4 and fair in 1 case. Posterior drawer test was positive in 1 case with Grade I laxity; MRI was done which revealed abnormal signal intensity, suggestive of a partial intra-substance PCL tear, which was missed at initial presentation. Conclusion: Our overall results with Zhang's modified posteromedial approach are quite encouraging and we recommend it for fixation of avulsed PCL fractures as it is easy, safe and time-saving.

**Abstract no.: 34037**

**MALIGNANT AND AGGRESSIVE BONE TUMOURS AROUND KNEE : IS STRAIGHT-PLASTY WORTH DOING?**

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With advances in adjuvant chemo and radio therapy limb salvage can be performed in 85% of patients with bone tumours. Rotationplasty where the leg is rotated by 180° so that the ankle acts as a knee and foot faces backward, has been explained as a partial-limb-salvage procedure where endoprosthetic reconstruction is not feasible. In Indian scenario, we found the acceptability of this procedure poor. We hereby discuss our experiences with Straightplasty, a technique in which the leg and foot kept in neutral position after intermediate stump resection. Although the patient loses the advantage of using ankle as knee joint, there is advantage of preservation of proprioception in foot and ankle with psychological satisfaction of salvaged foot. There is no risk of complications associated with amputation. It can be performed in situation where rotationplasty is technically not feasible e.g. where resected segment is large so that the ankle would come at a higher level than the opposite knee. The amount of resection is less, as there is no need to bring the ankle at the level of knee joint. There is possibility of limb lengthening at a later stage if patient wants. Prosthesis required is shorter than after an above-knee amputation, thus decreasing weight and leading to better gait with conservation of energy. In our experience of 17 cases, we found this procedure to be worth doing than to a above knee amputation especially in patients who detest rotationplasty due to religious or superstitious reasons.

**Abstract no.: 34042**

**RADIALIZATION V/S CENTRALIZATION PROCEDURES FOR HIGH GRADE RADIAL CLUB HAND: A RANDOMISED TRIAL**

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Background: Both radialization and centralization procedures have been described in literature for correction of radial club hand without any consensus as to which procedure has better results. This study aims to compare them in terms of radiological, clinical and functional outcomes. Methods: 16 high grade ( Heikel grade 3 and 4) radial club hands (14 patients) were randomized into 2 groups. 1st group (9 hands) underwent centralization and 2nd group (7 hands) underwent radialization. All patients were evaluated for clinical, radiological and functional outcome preoperatively and postoperatively at 3 months, 6 months and 1 year. Results: Preoperative mean Clinical hand forearm angle (CHFA) in group 1 was  $71.7^{\circ}$  which improved to  $10^{\circ}$  at post operative 3 months and worsened to  $14.4^{\circ}$  and  $21.1^{\circ}$  at 6 months and 1 year respectively. In group 2 preoperative CHFA was  $62.9^{\circ}$  which improved to  $1.4^{\circ}$  at postoperative 3 months and deteriorated to  $2.1^{\circ}$  and  $2.9^{\circ}$  at 6 months and 1 year respectively. The radiological hand forearm angle (RHFA) for group 1 was  $80.3^{\circ}$  preoperatively which changed to  $13^{\circ}$ ,  $18.6^{\circ}$  and  $27.2^{\circ}$  at postoperative 3 months, 6 months and 1 year respectively. The RHFA for group 2 was  $65.1^{\circ}$  preoperatively and changed to  $2.1^{\circ}$ ,  $3.6^{\circ}$  and  $7.0^{\circ}$  at postoperative 3 months, 6 months and 1 year respectively. The functional outcome of both the groups was similar at all follow ups. Conclusion: In our study, radialization fares better than centralization in terms of clinical and radiological outcome. However no significant difference in functional outcome was seen.

**Abstract no.: 34044**

**MODIFIED PULL OUT SUTURE TECHNIQUE FOR AVULSION OF ANTERIOR TIBIAL SPINE**

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Background-The problem with pull out sutures is that the anterior end of the fragment is tilted up even when the sutures are tightened. Technique –Two ethibond no.5 sutures are passed from medial to lateral aspect of ACL using any suture passing device like the Spectrum® device passed from anteromedial portal. Using a suture grasper it is taken out accessory anterolateral portal. A 2-inch incision is made on anteromedial tibia. Using the ACL aiming device, tunnels are drilled on the medial and lateral aspect of the fracture bed in tibia and they exit on anteromedial tibia. Using a crochet hook device through the tunnels, ethibond sutures are pulled down through the medial and lateral tibial tunnels. A third Ethibond suture is passed through the anteroinferior aspect of ACL very close to the bony fragment. A portal is created very close to anterior horn of medial meniscus. A straight small hemostat is passed through this portal just under the intermeniscus ligament. Using a suture grasper both the ends of the third suture are pulled under the intermeniscus ligament and out of this portal. Using a hemostat the two ends of the third Ethibond are tunneled into the anteromedial incision through subcutaneous plane. All the three pairs of sutures are tied over the post. Discussion-This method helps in 2 ways. It prevents the lifting off of the anterior part of the fragment and keeps the intermeniscus superior to the bony fragment and prevents its interposition between the fracture bed and the fragment.

**Abstract no.: 34046**

**PRIMARY NON-HODGKIN'S LYMPHOMA OF TALUS: A CASE REPORT OF RARE OCCURRENCE**

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Primary lymphoma bone (PLB) is an uncommon tumour with a relatively homogeneous morphology and clinical behavior accounting for approximately 4-5% of extra nodal lymphoma and less than 1% of all Non-Hodgkin's lymphoma. Distinguishing PLB from other bone tumours is important because the PLB has a better response to chemotherapy and a good prognosis. Sites commonly affected are the long bones, femur has been reported as the most common bone to be involved. In this paper we report a case of Non-Hodgkin's Lymphoma of talus in a 6 year old boy presented in the outpatient department with pain and swelling in the right ankle region of 4 months duration. Radiographs of ankle showed osteolytic lesion in the right talus and histopathology showed highly cellular sheets of atypical lymphoid cells. Immunophenotyping showed positivity for CD45, CD1a, CD79a, CD20, CD22. Systemic evaluation was insignificant. Hence diagnosis of primary lymphoma of bone was made. The child was given three courses systemic chemotherapy (CHOP) cyclophosphamides, doxorubician, vincristine, prednisolone along with involved-field radiotherapy. At the recent follow-up of 1 year and 6 months child was completely asymptomatic with no evidence of local recurrence. Keywords: Primary lymphoma bone, Immunophenotyping, systemic chemotherapy, radiotherapy

**Abstract no.: 34049**

**ASYMMETRICAL BILATERAL HIP DISLOCATION: A CASE STUDY**

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PGIMER, CHANDIGARH (INDIA)

Bilateral hip dislocation is relatively rare and accounts for approximately 1-2 % of all hip dislocations. Bilateral asymmetric dislocations of the hips are extremely rare injuries with 17 cases reported in English literature and those associated with unilateral acetabular fracture are even more rare with four cases reported in literature. In this case report we present a 68 year old male patient who suffered anterior dislocation of the right hip and posterior dislocation of the left hip with associated fracture of the left posterior wall of acetabulum following a motor vehicle accident. Both hips were reduced within one hour of presentation by closed manipulation under general anaesthesia. A radiograph after reduction confirmed concentric reduction of both the hips. Then, bilateral skeletal upper tibial pin traction was applied for 4 weeks. The patient was allowed to full weight bearing on right side and partial weight bearing on left side after 4 weeks. Full weight bearing on left side was delayed till 6 weeks. At the recent follow up of 24 months after injury, the patient is having painless full range of motion of both hips without radiographic changes of avascular necrosis in either femoral head. Key Words: Bilateral hip dislocation, acetabular fracture, skeletal traction, avascular necrosis.



**Abstract no.: 34050**

**MACRODYSTROPHIA LIPOMATOSA -A CASE SERIES**

Shivaprakash SS, Rajesh KUMAR, Pebam SUDESH  
PGIMER, CHANDIGARH (INDIA)

Introduction: Macrodystrophia lipomatosa[MDL] is a rare nonhereditary congenital form of localized gigantism of fingers or toes, characterized by an increase in all mesenchymal elements, particularly fibroadipose tissue. We present a series of six cases of macrodystrophia lipomatosa (MDL) and their outcome after debulking surgery. Material and methods: The cases are selected from outpatients department. The patients were in the age group of 2–5 years of age with the complaints of progressive increase in size of the toe, difficulty in walking and recurrent injury to the foot. All patients underwent simple debulking. Results: There were no complication in three (50%) cases but two cases (33%) had skin blackening along the suture margins, One case (16%) was under corrected. And none of the cases had recurrence. Conclusion: Simple debulking surgery is sufficient for MDL. Keywords: Macrodystrophia lipomatosa, recurrent injury, debulking

**Abstract no.: 34051**

**EPIDEMIOLOGICAL PROFILE OF FAT EMBOLISM SYNDROME IN PATIENTS WITH FRACTURE SHAFT OF FEMUR – A REVIEW ANALYSIS**

Shivaprakash SS, Ramesh SEN  
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Introduction: Fat embolism syndrome (FES) is a potentially fatal complication of long bone fractures. The reported incidence of FES varies from 0.25 to 29 percent with mortality ranging from 10-36%. In this retrospective study we report data of modern epidemiologic results for FES in long bone fracture. Methods: A retrospective review of patients over past six years i.e 2006-2012 in our institute was analyzed. Patients in age group of 16 – 40 years of both sexes, who presented within 12 hours of injury and with the fracture of the femoral shaft either isolated or with other skeletal injuries were included in the study. The patients were observed clinically and monitored over a period of 72 hours. The diagnosis of FES was established based on Gurd's criteria. Analysis made for incidence and mortality of FES. Results: 203 patients met the inclusion criteria with 38 patients were females and 165 were males with mean age of 27.11 years. 43 cases(21.2%) of FES was found as per Gurd's criteria. Mortality seen in 12 % of FES cases. All three major signs of fat embolism syndrome seen in 22(51.2%) of 43 patients of FES. Conclusion: Compared with the available literature in the recent decade, the incidence of FES in long bone fracture in our institution and the mortality rate is similar. Key Words: Fat embolism syndrome, Gurd's criteria, skeletal injuries.

**Abstract no.: 34052**

**PRIMARY DIAPHYSEAL TUBERCULOSIS OF THE TIBIA-A CASE REPORT**

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Extrapulmonary tuberculosis is more common in children than in adults and about one third of children who have tuberculosis have extrapulmonary manifestations. The site of involvement is primarily metaphyseal, however tuberculous osteomyelitis involving primarily the diaphysis without articular involvement is very rare. There are no incidence figures for this particularly rare disease entity although there have been reports of its incidence. We come across a case of 2 year old child at the outpatient clinic with pain and swelling of the left leg for three months duration, radiography of left tibia revealed mild thickening of the medial cortex of midshaft, with an intracortical lytic bone lesion. Histopathological examination revealed chronic granulomatous tissue with areas of caseous necrosis and Langhan type giant cells confirming the tuberculosis infection. The child was treated with appropriate anti-tuberculous regimen for 12 months and followed for 2 years. The child is completely asymptomatic and the lesion healed clinically and radiologically without any deformity. Keywords: Extrapulmonary tuberculosis, diaphysis, anti-tuberculous regimen

**Abstract no.: 34053**

**MANAGEMENT OF NEGLECTED LEVINE AND EDWARD TYPE III HANGMAN'S FRACTURE-A REVIEW OF THREE CASES**

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Introduction: The diagnosis of hangman's fracture may not be made several days after injury, especially if the fracture follows a simple fall with no other injury. Methods: We treated three cases of Levine and Edward type III neglected hangman's fracture (unstable traumatic spondylolisthesis of C2 over C3) presented to us after nine days, twenty three days and fifty days after injury. In two cases fracture occurred in road traffic accident and in one after trivial fall at home. Initial symptoms are some local discomfort and stiffness of the neck along with occipital neuralgia in all the three. One case developed quadriparesis three weeks after fall. We used skeletal traction to reduce the facets in all the three and followed by anterior C2-C3 fusion. Results: The patients' pain and spasm subsided completely and went back to normal activities in three months period including the quadriparesis patient.

**Abstract no.: 34058**

**INSTABILITY OF THE DISTAL RADIOULNAR JOINT (DRUJ) - A DESCRIPTION OF THE PROBLEM AND OWN EXPERIENCE WITH EARLY RESULTS.**

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**Objective** The distal radioulnar joint (DRUJ) is important for rotation of the forearm and stability of the ulnar wrist. Any DRUJ injury can cause limitation of the range of motion, decreased strength, pain, and instability. This paper deals with DRUJ instability, and reviews treatment methods and outcomes. Instability due to injury may be acute or chronic in nature. **Method** 22 patients (7 female, 15 male); with an average age of  $35.55 \pm 12.41$  years (range 17-55 years) with DRUJ instability were included in this study. Eighteen of the 22 patients had a history of previous trauma and there was one patient with a Madelung deformity and three with an ulna positive variance. Different operative procedures were used due to the variety of clinical presentations: 10 patients underwent a Sauvé-Kapandji procedure, four patients were treated with Adams-Berger anatomic ligament reconstruction, three patients underwent an arthroscopic TFCC repair, 2 patients underwent a Breen-Jupiter procedure, and one patient each underwent an arthroscopic Feldon procedure, ulnar shortening osteotomy and ORIF for non-union of type II ulnar styloid fracture. The average follow-up was  $6.77 \pm 3.73$  months (range 1-14 months). **Result** Pain reduced significantly ( $p < 0.05$ ) in all patients. The range of motion postoperatively did not differ significantly ( $p > 0.05$ ). DRUJ stability was restored in all cases. **Conclusion** DRUJ instability can result in significant disability. In such cases surgical treatment restores stability and decreases symptoms. Return to pre-injury activities is possible following treatment in carefully selected cases.

**Abstract no.: 34062**

**DO THE EXISTING TOTAL KNEE ARTHROPLASTY IMPLANTS MATCH THE ARTHRITIC INDIAN KNEES? – A CASE STUDY**

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Most of the existing commercial implants are designed to suit the knee anatomy of the Western population. Studies have shown that there are striking variations in knee anthropometry between the Asian and Western population but, the data still remains unclear. We conducted a case-control study to investigate the anthropometry of the Indian knees using three dimensional knee models and evaluate them morphologically against TKA implants currently available in the Indian market. The morphologic measurements of the femur and tibia included femoral mediolateral width (fML), femoral anteroposterior width (fAP), tibial mediolateral width (tML), tibial anteroposterior width (tAP) and aspect ratios of each. Morphological measurements of the ML and AP dimensions revealed that the Indian female has a smaller femur and tibia than the Indian male, and both have smaller values than the Western population. The relationship between aspect ratio and anteroposterior dimension of the tibia and femur should also be taken into account while designing the prostheses

**Abstract no.: 34069**

**THE INCONSISTENCIES IN ANKLE FRACTURE FIXATION: PILOT STUDY**

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**Introduction** Ankle fractures are common with an annual incidence of ~10,000 per year in the UK (Van Staa et al., 2001). Fixation of “simple ankle fractures” are seen as index cases within the logbooks of aspiring orthopaedic trainees prior to selection to a training post, yet controversy remains with regard to almost every step of the treatment pathway. **Method** We conducted a pilot survey of 30 questions aimed at all grades of orthopaedic and trauma surgeons in a small area of the UK. The survey was carried out anonymously via “survey monkey”. **Results** We obtained 42 responses (35 specialist registrars and middle grades, 7 consultants). Only 3 respondents had a special interest in Foot & Ankle (2 x consultant and 1 x SpR6). The practice of routine immobilisation had the greatest consistency (41/42 respondents) with 40/42 respondents using a sandbag, and 38/42 respondents using a tourniquet. Tourniquet pressure produced answers ranging from 200mmHg to 350mm/Hg but 62% stated 300mmHg as their answer. No agreement could be found with respect to skin closure; 21 respondents routinely use ethilon/nylon sutures, 6/42 vicryl, and 4/42 skin clips. **Conclusion** This pilot survey highlights many inconsistencies in “ankle fracture fixation”. Our results suggest there is no clear agreement on most aspects of operative fixation of ankle fractures. We suggest there is a need for up-to-date reviews on all aspects of perioperative ankle fracture fixation to potentially bring about greater uniformity in practice on the background of an evidence base.

**Abstract no.: 34071**

**SYNCHRONOUS MULTICENTRIC GIANT CELL TUMOUR OF BONE – A RARE CASE REPORT**

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Introduction: Giant cell tumours (GCT) account for 4-5% of primary bone tumours. The typical presentation is a solitary lytic lesion involving metaphyseal-epiphyseal region of long bones of adults. About 1% of cases present with multiple synchronous or metachronous lesions and are designated as multicentric giant cell tumours (MCGCT). About 101 such cases and up to a maximum of 11 lesions in one patient were reported in literature till date. Most of these cases are metachronously multicentric. Case report: We report a rare case of synchronous multicentric giant cell tumour of bone in a 23 year old woman who presented with multiple pathological fractures (fracture left humerus, fracture neck of right femur and periprosthetic fracture right femur) and found to have multiple lytic lesions of bone at various sites (right femur, left femur, right tibia, left fibula, left humerus, right humerus, right radius, left and right middle fingers), a total of 13 radiologically osteolytic lesions out of which 7 were confirmed as giant cell tumour on histopathology.



**Abstract no.: 34076**

**UNUSUAL PRESENTATION OF POPLITEAL SOFT TISSUE SARCOMA**

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We present a 80 year old female with three month old history of gradual onset swelling in the back of her right knee, painful right leg and swelling in right ankle. There was no history of trauma, weight loss or loss of appetite. On examination she had a non tender 5 X 5 cm fluctuant, non pulsatile lump in popliteal fossa with no overlying skin changes. An ultrasound scan revealed a large mass lesion with heterogeneous appearances in the popliteal fossa extending between the two heads of the gastrocnemii and large blood vessels in the central region of the mass. MRI scan showed large mass lesion in the posterior aspect of the right knee extending into the popliteal fossa and into the upper third of the right leg having appearance of bursal pathology. A differential diagnosis of complicated synovial cyst and Baker's cyst was made. She was admitted a month later with right leg swelling, calf tenderness, pitting oedema, faint peripheral pulses. Venogram ruled out deep vein thrombosis and X-ray of the knee revealed extensive ill defined calcification within the soft tissue mass in the popliteal fossa extending posteriorly to the proximal tibia but no other bony abnormality was found. Two months later she was admitted under vascular surgeons with critical ischaemia of the right leg. Examination revealed swollen calf, reduced sensation in the foot, and absent pulses in posterior tibial and dorsalis pedis arteries on Doppler examination. Urgent incisional biopsy of the popliteal mass was performed which revealed soft tissue sarcoma.

**Abstract no.: 34078**

**CYST FORMATION AFTER MOBILITY TOTAL ANKLE REPLACEMENT**

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**Introduction** Periprosthetic cyst formation following ankle replacement, requiring revision surgery, has previously been reported. Our objective was to review the incidence of periprosthetic cyst formation following Mobility ankle replacement and their outcome. **Patients and Methods** We reviewed all the Mobility ankle replacements performed by the senior author from Oct 2005 till May 2012. Serial radiographs were reviewed to identify the presence of cystic lesions in the tibia or the talus. **Results** 124 Mobility ankle replacements were performed in 116 patients during our study period. Average age was 65 years (22 to 88) with male to female ratio of 2:1. Average follow-up was 32 months (7 to 73). Radiographic review showed cystic changes in the distal tibia in 10 patients (8%). One patient had cystic appearance pre-operatively which was not progressive after replacement. Seven patients were asymptomatic. Three patients presented with ankle pain, which was thought to be due the cyst. One of the symptomatic patients had undergone revision of tibial component and bone grafting of the cyst 32 months after primary surgery. The second patient is awaiting surgery for exploration and possible bone graft (40 months after primary surgery). The 3rd patient is awaiting CT scan for further evaluation of the cyst. **Conclusion** Our study shows that cystic changes were present in 8% of TAR at medium term review. 70% (7 patients) were asymptomatic and 30% required intervention for being symptomatic. Regular review of the TAR patients is essential to identify the patients who develop cyst formation.

**Abstract no.: 34080**

**CT NAVIGATION SYSTEM ENABLES ACCURATE SURGICAL RESECTION OF AN OSTEOID OSTEOMA (OO) IN A LIMB. : A CASE REPORT.**

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Introduction: As it is difficult to distinguish the nidus of osteoid osteoma (OO) from surrounding reactive bone, en bloc resection is preferred. This case report details how we performed a surgical resection of OO using a CT navigation system that enabled accurate nidus resection and minimized the curettage area. Methods: A 26 years old male was referred to our hospital due to a one-year history of leg pain. An x-ray showed a region of marked cortical thickening at the posterior tibia wall without apparent radiolucent zone. CT scan showed a small nidus in front of the posterior cortical bone within the sclerotic area. We performed the surgical resection of the nidus by an anterior approach making a small cortical window in the anterior wall followed by curettage of the posterior nidus through the anterior cortical window using CT navigation system. Result: The extent and depth of the nidus was easy to confirm with the navigation system. Then curettage was performed through the anterior small cortical window preserving cortical bone where located on the nidus. Conclusion: To avoid incomplete resection, en bloc resection is preferred if surgical resection is to be performed, However en bloc resection increases risk of post operational fracture. Percutaneous treatments under CT control such as core needle resection, or radiofrequency ablation have been reported. Nevertheless, surgical resection is superior in biopsy rates and cure rates to percutaneous treatment. CT navigation system enables accurate surgical resection and minimizes the risk of post-operative fracture.

**Abstract no.: 34084**

**CLINICAL AND RADIOLOGICAL OUTCOMES AFTER SURGICAL CORRECTION OF ADOLESCENT IDIOPATHIC SCOLIOSIS**

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Introduction: Adolescent idiopathic scoliosis(AIS)with Cobb angle over 45°on radio-graphs which is a progressive curve can be treated by surgical correction.Advent of modern implants has led to good correction in all 3 dimensions with better fusion and cosmesis.We present our outcomes after surgical correction of AIS. Materials and Methods:This single center prospective study was done over a period of 12 months between 2011 and 2012 in a University hospital in England.22 consecutive patients underwent posterior single stage correction with pedicle screw construct.All patients underwent standing whole spine postero-anterior and lateral radio-graphs during their follow up clinic appointments.SRS-30 questionnaire was completed preoperative and one year post-operatively. Results:Of the 22 patients who underwent surgical treatment 8 were Right thoracic,12 were double major, 2 were thoraco-lumbar curves.Their age at surgery varied between 13-16 years (mean 14.8).There was a gender preponderance female over Male in a ratio 20:2.Cobb angle improved from pre-operation range 46-90°(mean 63°) to post-operation range 3-35°,(mean 12°).There was a mean difference of reduction of coronal balance and sagittal balance 17mm and 11mm respectively.Increase in height of the patient following the operation was 1.5-7.5cms(mean 4cms).Analysis of pre-operation and 1 year post-operation questionnaires showed improvement in all 5 domains function/activity-pre-operation mean 3.8/5, post-operation 4/5 pain-pre-operation mean 3.5/5, post-operation 5/5 self-image pre-operation mean 2.4/5, post-operation 4/5 Mental health pre-operation mean 3.2/5, post-operation 4.3/5 Satisfaction with treatment pre- operation mean 3.6/5, post-operation 4.7/5 respectively.Length of hospital stay was 5-8 days (mean 5.9).We had no major complications and all our patients returned to school within 6 weeks.

**Abstract no.: 34085**

**STABLE NON-UNION OF LONG BONE - SHOULD IT BE NEGLECTED?**

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**INTRODUCTION:**The aim of study is to convey a message to facilitate nature's healing & rehabilitation process in such cases of non-union of long bones, where despite repeated sincere surgical attempts, fracture failed & refused to unite but lead to stable pseudoarthrosis offering good soft tissue stability leading to good functional outcome accepted by patients. **METHODS:**Sixteen cases of fractures long bones viz. tibia, humerus & femur treated conservatively initially and / or operated repeatedly in an attempt to get union but failed & refused to unite. Ultimately in all these cases , patients were not willing to under go any more surgery and tired of surgical , economical, social and familial burden and treated themselves conservatively. In many of these cases , it was found that even though fracture did not unite, stable pseudoarthrosis & good and adequate soft tissue stability could be achieved to offer functional activities and good weight bearing capacity with or without external support over a period of few months to few years. **RESULTS:**Sixty percent were able to perform weight bearing functions with external support or brace while 40 % were able to perform full activities including running , driving , running, weight lifting et.without support. **DISCUSSION AND CONCLUSION:**From these rare but definite group of patients, the remedy i.e. reassurance, patience and courage to continue activities and neglecting the fracture ultimately helped to come out of fracture disease psychology and surgical cycle and encouraged to continue more activities helping nature's rehabilitative process despite non union..

**Abstract no.: 34089**

**LONG BONE FRACTURE HEALING: THE EFFECTS OF DIABETIC MEDICATIONS**

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Introduction: To date no studies have investigated the effects of diabetic medications on fracture healing in humans, despite over 40,000 diabetic patients being treated surgically for trauma and orthopaedic injuries each year in the UK alone. Method: Adult diabetic patients sustaining fractures of the femur or tibia, treated operatively between 2004 and 2010 were eligible for participation. Output measures were: time to callus first appearance, bridging of involved cortices and union, along with the eventual outcome: union/non-union. Matched non-diabetic controls were identified for each diabetic patient. Results: 36 (25 male) eligible patients were identified, with a mean age of 55.6. The control group consisted of 195 patients (160 males) with a mean age of 44.7. Class of medication was found to have a significant effect on the time to first callus appearance, to bridging of involved cortices and the eventual outcome of union vs. non-union. The mean time to callus formation in diabetic patients taking biguanides (128.8 days) or sulphonylureas (168.0 days) was more than double that found in the control group (60.2 days). Rate of non-union was 28.5% higher in diabetic patients receiving hypoglycaemic polypharmacy vs. controls or those on monopharmacy. Conclusion: All classes of medication demonstrated anti-osteogenic effects compared to the control cohort, biguanides to a greater extent, in contrast to the in-vitro evidence to date. Clinicians should be aware of these delays in bone-healing, along with the increased risk of non-union with polypharmacy. Further research is indicated to differentiate between medication class effects.

**Abstract no.: 34100**

**OUTCOME AND COMPLICATIONS ASSOCIATED WITH SURGICAL  
FIXATION OF TALUS FRACTURE.**

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Talus fractures are associated with high morbidity. With an average incidence of around 20 cases annually In Hamad General Hospital in Qatar. This study aims to analyze outcome and complications associated with this injury. A retrospective analysis of patients with talus fracture was done. Management of these fractures and outcome measured by time of full weight bearing, residual pain, avascular necrosis and post-traumatic degenerative joint disease were analyzed. Hawkins classification was used. An average of two years follow up. Results: 32% developed arthritis in subtalar joint and 9% developed it in tibiotalar joint. Avascular necrosis was seen in 6%. The most disabling of these injuries are associated with displaced comminuted talar body fracture. Conclusion: Better outcome is observed when anatomic reduction is achieved.

**Abstract no.: 34102**

**SIMULTANEOUS BILATERAL ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION**

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Introduction: The ideal treatment for patients presenting bilateral ACL deficiency remains controversial. The purpose was to evaluate cost and functional results after one stage bilateral ACL reconstruction. Methods: This prospective comparative study compared the outcome of 7 patients (14 knees) who had one stage bilateral ACL reconstruction with that of a matched group of patients who had unilateral reconstruction (21 patients). Results: The median length of hospital stay was 4 (3 - 5) nights for the bilateral group and 2 (1 - 4) nights for the control group. Duration of rehabilitation process in patients from control group with unilateral ACL reconstruction was one week shorter (9 versus 8 weeks). In the bilateral group, the median Lysholm score was 96 (85-100) and in the control group, the median score was 93 (81-100). The median time to return to full-time work and to full sports was 9 weeks and 7 months for the one stage group and 8 weeks and 6 months for the unilateral group. 6 patients (86%) in the bilateral group and 17 patients (81%) in the control group were still performing at their pre-injury activity level. National Health Institution saved 2925 EUR when we performed one stage bilateral reconstruction instead of two stage ACL reconstruction. Conclusions: Mid-term clinical results suggested that one stage bilateral ACL reconstruction using either hamstring or patella tendon autograft is clinically effective. For patients presenting bilateral ACL deficient knees, one stage bilateral ACL reconstruction is reproducible, cost effective, and does not compromise functional results.



**Abstract no.: 34103**

**ANATOMICAL FEMORAL & TIBIAL GRAFT POSITION IN ACL RECONSTRUCTION BY SINGLE BUNDLE STG GRAFT USING MODIFIED TRANSTIBIAL TECHNIQUE- A RADIOLOGICAL & FUNCTIONAL ASSESSMENT**

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**Introduction:**Accurate placement of an ACL graft is crucial in obtaining successful outcome after reconstruction.In this study,we assessed radiologically the position of femoral,tibial tunnel for anatomical acl footprint.We also analysed the relationship between tunnel placement and clinical outcomes over a period of two years. **Methodology:**40 patients with acl injury who underwent arthroscopic acl reconstruction from 2009 to2010 in the age group of 18 to 60 years were assessed pre-operatively and at 6weeks,3month,6month,1year and 2years.Lysholm knee score and IKDC score.Ligamentous laxity by Lachman and pivot-shift tests were performed. Tunnel position was assessed in the sagittal and coronal planes, and the inclination angle was measured. **Summary:** Mean Lysholm knee score at 2 years was 93 (56 to 98).The mean IKDC subjective score at 2 years was 86 (64 to 96).At 2 years after surgery 29 of 40 patients (73%) reported they were regularly participating in very strenuous activities.In these patients,the tibial tunnel was a mean of 46% (SD 8%) posteriorly along the tibial plateau and the femoral tunnel was a mean of 86% (SD 7%) posteriorly along Blumensaat's line. The mean coronal graft inclination angle was 24°(SD 5°).In all,29 of 40 patients (73%) were thought to have ideal tunnel placement. **Conclusion:**Any non-isometric positioning is likely to have an adverse effect on the graft owing to abnormal forces during activity.In our study we obtained anatomical femoral tunnel position in 73% of patients through modified transtibial technique,and functional results after 2 years in these patients were good or excellent in more than 80% of them.

**Abstract no.: 34113**

**ADHESION, PROLIFERATION AND DIFFERENTIATION OF OSTEOBLASTS ON ZIRCONIA FILMS PREPARED BY CATHODIC ARC DEPOSITION**

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Zirconia films were prepared on titanium by cathodic arc deposition technique. The surface topography and element composition of the films were characterized by scanning electron microscopy and X-ray photoelectron spectroscopy, respectively. Osteoblast-like MG63 cells were cultured on the surface of the zirconia films in vitro, and cell behaviour was investigated, with titanium as control. The results obtained from scanning electron microscopy and immunofluorescence studies showed that the MG63 cells on ZrO<sub>2</sub> films spread better than those on Ti. The CCK8 assay indicated that the zirconia films promoted the proliferation of MG63 cells. The results of alkaline phosphatase (ALP) activity test and the expression of osteogenic marker genes, such as ALP, collagen I, and osteocalcin, demonstrated that the differentiation of MG63 cells was enhanced by Zirconia films. In addition, the Zirconia films also regulated osteoclastogenic gene expression by stimulating the expression of osteoprotegerin and reducing the expression of receptor activator of nuclear factor-kappaB ligand. The present work suggests that the ZrO<sub>2</sub> film is worth further consideration for orthopedic implant applications.

**Abstract no.: 34114**

**COMPARISON OF THE CLINICAL RESULTS OF TRADITIONAL MICROENDOSCOPIC DISCECTOMY AND DESTANDAU MOBILE MICROENDOSCOPIC DISCECTOMY**

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Introduction : The technique of microendoscopic discectomy (MED) has been developed for decades. In our institute, we have used MED since 1998. From 2009, a novel Destandau mobile microendoscopic technique has been used to perform discectomy. Objective: To compare the learning curve and clinical results of lumbar disk herniation patients treated with traditional MED and Destandau mobile MED. Methods: The author retrospectively analyzed the data of surgical time, blood loss, length of surgical wound, surgical complication, hospital day and clinical results (VAS and ODI) in the first 50 lumbar disk herniation patients who treated with MED, and compared that with the technique of Destandau. Results: The results showed that surgical time is shorter and the surgical complications were lesser in Destandau mobile technique group , however , the other parameters showed no difference. Conclusion: The shorter learning curve and less surgical complications of Destandau mobile technique group than the traditional group may be due to the sophisticated mobile technique.

**Abstract no.: 34118**

**THE USE OF OUTCOME MEASUREMENTS IN INTERNATIONAL MULTICENTER TRIALS – A REVIEW OF THE MULTICULTURAL ISSUES WHICH ARISE.**

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The two main issues in using outcome measures in international multicenter trials are measuring the same data at each site (i.e. the same variable) and obtaining the same data (i.e. overcoming infrastructural and environmental barriers to collect the necessary data). Validating outcome measurements is a difficult but necessary task. It may be the case in international multicenter trials that instruments are not available in the local language of one or more of the clinics. This means either forgoing this element of the study in those clinics or developing a local language version. However, patient-reported outcomes can be a confounding factor if they have been translated but not undergone a process of cross-cultural adaptation and testing. This involves forward and back translating as well as synthesis and expert review. Our organization has experience of cross-cultural adaptation of outcome measures. Each adaptation takes up valuable time and also means that clinics where the new version of the outcome measure is required are unable to begin recruitment until the rigorous process (including testing) has been completed. An international multicenter study could be affected by any of these elements. Outcome instruments intended for use in a study should be carefully chosen, with their availability in local languages checked before the protocol is finalized. For all these reasons, any noticeable variances in outcomes from different countries should also be examined from a cultural, as well as a methodological perspective.

**Abstract no.: 34120**

**DOES EARLY HIP SURGERY INCREASE BLOOD LOSS IN ELDERLY PATIENTS RECEIVING ANTI-PLATELET AGENT WITH DISPLACED FEMORAL NECK FRACTURE**

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**Introduction:** Recent studies showed early surgical intervention in elderly hip fracture significantly reduce postoperative mortality and morbidity; however, there still was inconclusive evidence in some specific outcome such as perioperative blood loss (PBL) especially in the patients who previously received antiplatelet agent. **Methods:** This was a retrospective cohort study performed between 2008 and 2011. Elderly femoral neck fracture patients who took antiplatelet medication and received hip hemiarthroplasty treatment in Ramathibodi Hospital, were included and then allocated into two groups according to time between surgery and the date stopping the drug; (1) Early surgery (ES) group (less than 72 hours), and (2) Delay surgery (DS) group (more than 72 hours). Blood loss was shown as perioperative blood loss (PBL), and calculated total blood loss (CTBL). The amount of blood transfusion was recorded. Postoperative complication and function were followed for one year. **Results:** A total of 100 patients were included and allocated into ES group (n=57) and DS group (n=53). The mean PBL, CTBL and transfusion requirements were non-significant difference between both groups (p=0.67, 0.26, and 0.1 respectively). Overall postoperative complications in ES group (ten, 19%) were significantly lower than in DS group (thirty-three, 58%) (p<0.001). Postoperative ambulation status in ES group also better than DS group (p=0.03). **Conclusion:** Early hip surgery was not associated with a significant increase of perioperative blood loss and blood transfusion. Moreover, early hip surgery showed benefits in reduction of overall postoperative complications and better functional recovery.

**Abstract no.: 34122**

**VTE PROPHYLAXIS IN PRIMARY HIP AND KNEE ARTHROPLASTY -  
COMPARISON OF RIVAROXABAN VERSUS LMWH**

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Introduction: Literature suggests Rivaroxaban thromboprophylaxis is superior to low-molecular-weight heparin (LMWH) in patients undergoing hip and knee arthroplasty. American College of Chest Physicians and National Institute of Clinical Excellence, UK recommend two weeks of thromboprophylaxis for TKR's and four/five weeks for THR's. Objectives: To evaluate the efficacy of Rivaroxaban versus LMWH thromboprophylaxis in patients undergoing hip and knee arthroplasty. Methods: In group 'A', (June 2008 - June 2010), Tinzaparin 4500 IU/day was used for primary TKR's (1063) and THR's (1052). Length of administration was based on patient's postoperative mobility and pre-existing risk factors. On average it was given for 7.6 days. In Group 'B' (July 2010 - August 2011), Rivaroxaban 10mg OD in TKR's (818) for two weeks and for four weeks in THR's (786) was used. Deterred by haematomas and postoperative bleeding wounds, it was changed from August 2011 onwards to Deltaparin 5000 IU for 2 weeks in TKR's (1232) and four weeks in THR's (1162). All patients received similar mechanical prophylaxis and were worked up for risk factors. Results: The incidence of VTE in Group A was 0.47% (THR), 2.18% (TKR), Group B 0.69% (THR), 1.19% (TKR), Group C 0.32% (THR) and 1.27% (TKR). There was no statistical difference between group 'B' and 'C' (p value < 0.001) but was significant when compared to Group 'A'. Conclusions: There is very little difference between Rivaroxaban and LMWH when administered according to ACCP and NICE guidelines but higher rates of VTE are seen when thromboprophylaxis is for suboptimal period.

**Abstract no.: 34124**

**INTERTROCHANTERIC # NECK FEMUR - FIXATION WITH TROCHANTERIC FEMUR NAIL- 250 CASES.**

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Intertrochanteric # neck femur is bread and butter of a orthopaedic surgeon. The incidence of it is increasing day by day and old age with osteoporosis is the common occurrence. The present study is an evaluation of new technique with fixation of 250 cases of unstable ¾ part itnf #'s with TROCHANTERIC FEMORAL NAIL- ORTHO CARE & CURE MAKE .The average age is about 70 yrs.130 males and 120 females were evaluated.The period was between October 2008 to december 2012. The surgery time was average 40 min, with small incisions and very minimal blood loss, no drain. Immediate post op knee and hip movements were allowed with partial wt. bearing on 10th post op day and full wt. bearing after 21 days. Advantages over older methods are:- .Can be put with very small incision. .Less blood loss , Less muscle stripping. .Rapid rehabilitation ,Earlier wt. bearing,Earlier discharge from acute care settings. .Potential mechanical advantage –reduce lever arm of the implant and limiting the amount of collapse of the #. Good to Excellent score in all cases. This is a study of 250 cases with 3 yrs follow up, the results are encouraging with very less failure. This technique can be a boon to severe osteoporotic and unstable intratrochanteric neck #'s with associated comorbidities.

**Abstract no.: 34125**

**CLINICAL AND RADIOLOGICAL RESULTS OF RECOMBINANT BONE MORPHOGENIC PROTEIN TYPE-2 IN POSTERIOR LUMBAR INTERBODY FUSION**

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From March 2007 to Dec 2010, 20 patients with sign and symptoms of more than 6 months duration of single level degenerative disc disease, diagnosed by plain radiographs and MRI of LS spine, were picked up from orthopedics OPD of Northern Railway Central Hospital and Sir Gangaram Hospital New Delhi.. Among them 11 were males and 9 were females with average age was 51.75 years ranging from 20 to 80 years with average weight 153 pounds. Most common pathology found is prolapsed intervertebral disc in 45% of cases and spinal stenosis and listheis in rest of cases. Surgery:All 20 patients were underwent surgery instrumented posterior lumbar interbody fusion with rhBMP-2. Most pathologies found at L4-L5 level (in 60% of cases) and at L5-S1 in 35 % of cases. Mean blood loss during surgery was 302 ml. mean hospital stay was 13.9 days. Mean surgery time was 2.5 hours. Post surgery clinical outcomes: Clinical outcomes measured using owestry disability scores, back and leg pain scores were assessed at 6, 12 and 24 months. There was marked improvement in all these at each follow up compared to pre-operative levels. There was 87.72% improvement in ODI scores, 80% improvement in leg pain scores and 70.8 % improvement in back pain scores compared to preoperative levels which was quiet significant ( p value<0.05).Radiological outcomes: Radiological fusion assessment done using plain radiographs and CT scans at each follow up. At 24 months interbody fusion was 86.2% in our study.



**Abstract no.: 34126**

**OUTCOME OF HIGH ENERGY TIBIAL CONDYLAR FRACTURES TREATED BY JESS HELMET FRAME WITH PERCUTANEOUS SCREW FIXATION – A MINIMUM INVASIVE APPROACH – A PROSPECTIVE CLINICAL STUDY.**

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Background: High energy tibial condyle fractures are recognized radio graphically by complex fracture patterns and clinically by serious soft tissue injuries. Middle path of minimally invasive techniques of closed reduction and stabilizing the fractures by limited internal fixations is being developed to overcome the drawback of nonoperative and operative modalities. Which utilized percutaneous screws and Kirschner wires, external fixation frames to stabilize tibial plateau fractures. Methods: 21 cases of High energy tibial condyle fracture (Schatzker type IV,V and VI) were treated between 2009 to 2010 in our institute. Clinical examination done carefully, X-ray and 3D CT scan done to gauge the anatomical configuration of tibial plateau . Patients were followed up at 2,4, 6, 10,16 and at 24 weeks. Then every 2 month for one year. Rasmussen's criteria and IOWA knee score were used to evaluate the final outcome. Results: Final end results as per the Rasmussen's criteria were excellent 13, good 4, no poor results. Final end results as per the IOWA knee score were excellent 10, good 7, no poor results. 17 patients did not have any major complication except 3 patients had mild pin track infection which was easily control by antibiotics & pin track dressing. In 1 patient earlier removal of frame done because of pre op sciatic nerve injury requiring surgical intervention. Conclusion: The technique is more biological, Require less surgical time, Less amount of blood loss, Short duration of post op. hospital stay. It has better functional outcome so it can be treatment of choice for high energy tibial condyle fracture.

**Abstract no.: 34129**

**RANDOMIZED CONTROL TRIAL ASSESSING CLINICAL AND RADIOLOGICAL OUTCOME AFTER STABILIZATION OF FRESH FEMORAL SHAFT FRACTURE IN CHILDREN OF 6-12 YEARS WITH TITANIUM ELASTIC NAIL SYSTEM VERSUS RUSH NAIL**

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Thirty patients between 6- 12 years of age with clinico-radiological diagnosis of fracture shaft femur were included in our study and randomized into two groups with fifteen patients each: Group I: fracture stabilized by titanium elastic nail system(TENS) Group II: fracture stabilized by Rush nail. All the patients were followed at 3 weeks ,6 weeks ,3 months and 6 months postoperatively and assessed for the following: Pain at fracture site ,Pain at nail insertion site, Remodeling (mature) callus formation across fracture site in two orthogonal views(antero-posterior and lateral), Limb length discrepancy, Hip range of motion(flexion extension arc), Knee range of motion. Intraoperatively there is significant difference between duration of surgery between the groups (i.e. 43.47 min in group-1 and 58.87 in group-2). At 3 weeks of follow up there is significant difference in no. of patients having pain at fracture site (i.e. 13 patients in group-1 and 7 patients in group-2) and mean knee range of motion (i.e. 36.67 degree in group-1 and 60.00 degree in group-2) in two groups .At 6 weeks, 3 months and 6 months there is no significant difference in clinic-radiological outcome of two groups. Cost of RUSH nail is much less than TENS with comparable clinico-radiological outcome in children (6-12 yr) with femoral shaft fracture at 6 months follow up.

**Abstract no.: 34135**

**NECK PRESERVATION IN PRIMARY HIP ARTHROPLASTY WITH CFP STEM.**

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The modern prosthetic hip surgery isn't any more an articular substitution but a reconstruction of biomechanical parameters as hip rotation center, femoral offset, muscle lever arm and limb's length: obtaining such results means good function, implant's primary stability and late osteointegration, optimal stress distribution around components with less wear. Femoral neck preservation, ideally and anatomically, means bone preservation as well as biomechanical parameters respect. The CFP(Collum Femoris Preserving, LINK), as originally provided by the author Prof. Pipino, is a stem designed for biologically young active patients, anatomically shaped for uncemented insertion in the neck and metaphyseal area creating a large endosteal contact trough pressfit fixation, maintaining the original inclination, antiversión and offset. Three hundred implants(112 men, 188 women, age 16-76) have been performed by the same surgeon in the period 1999-2011, utilizing a direct lateral minimally-invasive approach, in combination with different uncemented pressfit cups and ceramic on polyethylene coupling with 28 and 36 heads; all patients received infection and DVT prophylaxis; early mobilization started on day 1, deambulation with full weight-bearing as tolerated. A retrospective study of 74 implants performed in the period 1999-2002 allowed a follow-up of 12/14 years. Clinical results have been obtained utilizing the HHS; radiological, through conventional X-rays (Gruen's zone observation) and DEXA in a group of 12 patients followed for 7 years. HHS rose from av.46 pre-op. to 96 post-op.; bone resorption observed in 14 patients in zone 1-7, but no loosening;BMD preserved since the beginning and increasing during years. CFP stem predicts good results.

**Abstract no.: 34139**

**EARLY OUTCOME OF CONVERSION ARTHROPLASTY AFTER FAILED HEMIARTHROPLASTY PROSPECTIVE STUDY**

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The aim of this work is to perform and study a series of cases in which conversion arthroplasty is indicated after failed hemiarthroplasty with different surgical strategies for different types of femoral and acetabular abnormalities, to describe the technical difficulties encountered and to evaluate the early outcome and complications., a prospective study 30 patients with failed hemiarthroplasty Follow up period (20-39) months with an average of 22.6months.Age 45 to 79 years Preoperative Harris Hip Score: (15 - 58) with an average 38.3.The indication of surgery Diaphyseal malunion as a sequel of periprosthetic fracture, Neglected dislocation, Acetabular erosion, Proximal migration, Aseptic loosening At last follow up, the average hip score (HHS) was89.1,10 hips had excellent results 15 hips had good results 4 hips had fair result and one hip had a poor results Restoration of leg length to within 10 mm of equality was accomplished in 24 out of 30 hips 7 out of 30 hips had no limp, 20 had slight limp, and 3 had moderate limp.Totally In this study, 6 cases had complications Calcar crack Trochanteric fracture, Instability, Deep venous thrombosis Conversion arthroplasty after failed fixation or hemiarthroplasty dramatically improve the life of many patients, however this is not free of complications. Adherence to specific basic principles, improving implants and improving operative techniques hopefully will improve the surgeon's ability to treat these complex problems successfully and with a minimum of complications.

**Abstract no.: 34142**

**MINIMALLY INVASIVE PLATE OSTEOSYNTHESIS OF SUBTROCHANTERIC FEMUR FRACTURES WITH A LOCKING PLATE**

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Intramedullary nailing is often unsuitable for difficult fracture patterns with comminution or when the medullary canal is narrow. medial comminution, locked trochantric plate will be a good treatment option for these cases. The purpose of this study was to clarify the efficacy of minimally invasive plate osteosynthesis (MIPO) with locking compression plate in the treatment of subtrochanteric fractures. 40 patients with a mean age of 40.1 year (26-64) who sustained closed subtrochanteric femoral fractures, were treated with indirect reduction and biological fixation using the proximal femur locked plate. with no pathological fractures. Patients were followed up for a mean of 12.5 (8- 24) months. Patients were assessed clinically and radiologically pre and post operatively with regards to fracture classification, operating time, blood loss, time of union, weight bearing, mal union and infection and other complications. Union was achieved in all cases within an average of 16.2 (12-20) weeks. The operating time averaged 100 (75-120) minutes and blood loss average was 400 (300-500) ml. ONE CASE WITH superficial infection TREATED WITH EARLY SURGICAL DEBRIDMENT, No cases of non union. No cases of implant failure. There was one case of INTERNAL ROTATION DEFORMITY. 3 cases with limb length discrepancy, mean 1.2 (1-2) cm. Functional results were excellent in 32 and good in 8 cases. The MIPO technique with a locking plate provides an alternative method for fixing subtrochanteric femur fractures, when IM nailing is inappropriate. This technique provides stable fixation, with a high union rate and a minimal complication rate.

**Abstract no.: 34143**

**EARLY OUTCOME OF CONVERSION ARTHROPLASTY AFTER FAILED OSTEOSYNTHESIS PROSPECTIVE STUDY**

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The aim of this work is, to perform and study a series of cases in which conversion arthroplasty is indicated after failed osteosynthesis with different surgical strategies for different types of femoral and acetabular abnormalities, to describe the technical difficulties encountered and to evaluate the outcome and complications. prospective study was conducted involving 30 patients (30 hips) Follow up period had ranged from (18-36) months with an average of 21.5 months. Pre operative Harris Hip Score Ranging from (13 - 62) with an average 40.4. The indication of surgery in all patients was intolerable pain interfering with activities of daily living At last follow up, the average hip score (HHS) was 88.2 (range from 62 to 96) 9 hips had excellent results 19 hips had good results , 1 hip had fair result and one hip had a poor results Restoration of leg length to within 10 mm of equality was accomplished in 27 out of 30 hips (90) , 7 cases (23.3%) had complications Calcar crack, Trochanteric fracture, Instability, Trochanteric non union , Deep venous thrombosis, SUPERFICIAL infection, Local hematoma There were 3 intra-operative complications (9.9%), and 5 postoperative complications (16.5%) We believe that better results of conversion arthroplasty are correlated with restoration of the original hip centre, restoration of the hip biomechanics and abductor moment arm, and creation of stable construct; this necessitated proper cementation with proper alignment and uniform cement mantle in cemented cases and proper press fit technique

**Abstract no.: 34146**

**ANALYSIS OF RISK FACTORS FOR RECURRENCE OF GIANT CELL TUMOUR OF THE SACRUM AND MOBILE SPINE COMBINED WITH PREOPERATIVE EMBOLIZATION**

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Although several authors have already reported on the local recurrence rate of giant cell tumour (GCT) of bone after surgery, there are few researches focusing on GCT of the sacrum and mobile spine, and no studies on the risk of recurrence after surgery when combined with preoperative embolization. We aimed to investigate the factors related to the local recurrence-free survival time (LRFS) after surgical treatment of GCT of the sacrum and mobile spine combined with preoperative embolization. We retrospectively reviewed 28 consecutive patients with GCT of the sacrum and mobile spine who underwent initial surgical excision combined with preoperative embolization between 1995 and 2011. Data regarding age, gender, tumour location, tumour size, tumour extension, radiation therapy, and local recurrences were reviewed and analyzed statistically. All the patients underwent intralesional resection. The average duration of follow-up was 86.4 months (range, 15 - 193 months). 8 (28.6%) patients developed local recurrence. The average recurrence time was 35.6 months (range, 5 - 79 months), and the local recurrence-free survival rates at 3 and 5 years were 89.1% and 75.5%, respectively. LRFS was found statistically longer in intracompartmental (T1) tumours as compared with extracompartmental (T2) tumours ( $P= 0.031$ ), but not for age, gender, tumour location, tumour size, or radiation therapy. Intralesional excision with preoperative embolization is a feasible choice for T1 tumours of the sacrum and mobile spine, but for T2 tumours, more aggressive treatment may be required. The choice of surgical treatment should be balanced between the complications and tumour recurrence.

**Abstract no.: 34157**

**ARTHROSCOPIC TREATMENT IN CHRONIC PAIN AFTER ANKLE FRACTURE ANATOMICALLY REDUCED**

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Introduction. Ankle arthroscopy, in chronic pain for anterolateral impingement after sprain ankle, gives good results. Is painful arthrofibrosis exist also after ankle fracture ? Or what to do on ankle still painfull after material removal ? Material and method. From 2005 to 2009, a continuous serie of 10 patients were treated by ankle arthroscopy after an ankle fracture redudced anatomicaly with ORIF and a minimum of 6 months physiotherapy. The delay before arthroscopy was 19.9 months. Pain and limitation in dorsal flexion were the main symptoms. There were no instability, either no laxity. All osteosynthesis material was remove. Arthoscopy was done by usuals antero-lateral and antero-medial portals with no distraction. Fibrous tissu debridement was done in all cases, osteophytes resection for 6 patients, and bone drilling for 3 patients. Results. Mean follow-up after arthroscopy was 26.6 months The preoperative KITAOKA score was 60,1 and 85,1 postoperative. Seven cases improved their score more than 20 points. Most on pain relief and improved dorsal flexion. Seven patients were very satisfy or satisfy. No complications was related to arthroscopy. Discussion. As in the litterature, arthrofibrosis was found in all cases. Arthroscopic debridement seems effective. It decreases pain, and improve the articular function. Presence of chondral damages at the time of fracture is one factor of bad clinical result. Conclusion. Arthrofibrosis with impingement was found in all cases. Bone impingement in 50 % of cases. Arthroscopic debridement and osteophytes resection by arthroscopy, seems to decrease pain and to improve ankle articular function.



**Abstract no.: 34160**

**PROSPECTIVE ANALYSIS OF COAGULATION PROFILE TESTING TO PREDICT COAGULOPATHY AND MORBIDITY IN MAJOR SPINE SURGERY: IDENTIFYING THE PATIENT AT RISK**

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**Introduction:** Complex spine surgery is associated with the potential for large intraoperative blood loss and massive transfusion. Platelet Mapping (pTEG) is a thrombelastography-based technology that examines platelet function following activation with the known platelet activators adenosine-5-diphosphate (ADP), arachidonic acid (AA), and collagen. Weitzel et al recently demonstrated that low activation of platelets in response to collagen and arachidonic acid correlated with increased bleeding following cardiopulmonary bypass, and this modality was examined in this pilot study of major spine surgery. **Methods:** This prospective study included adult patients scheduled for spine surgery with anticipated blood loss >500mL. Blood was collected intraoperatively from the arterial line and coagulation profiles were tested via standard methods, as well as advanced pTEG analysis. The data were analyzed for correlations between pTEG/coagulation profile results and intraoperative bleeding. **Results:** The 13 patients (6 males, 7 females; mean age 56.2) enrolled in the study lost an average of 1300 mL of blood (50-3500 mL) during surgery. There were indications of a correlation between AA results and blood loss, but statistical significance was not reached. **Conclusion:** The present results provide pilot evidence that pTEG analyses can be used as a screening tool for blood loss in complex spine surgery cases. We are currently conducting a larger study to confirm these findings. The identification of a coagulation screening test that can identify patients at risk for excess bleeding during surgery could have both local and national implications, with the potential to improve patient outcomes and safety.

**Abstract no.: 34162**

**SIMPLE TECHNIQUE IN TREATMENT OF OSTEOPETROTIC FRACTURES**

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Introduction: Osteopetrosis is a rare skeletal condition first described by German radiologist Heinrich Albers-Schonberg. The most important technical difficulty is drilling due to hard bone in patients with osteopetrosis; recommendations have been made to use high speed electric drill bits. But the unavailability of this special drill bit in most of the centres makes the job more difficult. Material and methods: The study was conducted from 2009 to 2012; the cases are selected from outpatients department of postgraduate institute of medical education and research. The patients were in the age group of 10 to 50 years of age with a mean age of 26 years. Five cases were included in the study, four patients had subtrochanteric fractures and one had segmental fracture of the humerus. Open reduction and internal fixation was done all the fractures using metal cutting drill bit. Results: The use of metal cutting drill bit in osteopetrosis not only made our job easy but also prevented thermal necrosis of the bone to a large extent. The union rate was 100% in our series and there was no infection in any of our cases. Conclusion: In the treatment of fractures in osteopetrosis, the use of a metal cutting drill bit along with careful attention to drilling technique can help avoid bit breakage and thermal bone injury that may produce ring sequestrum or destroy the already scant osteogenic cells.

**Abstract no.: 34163**

**A NEW METHOD FOR CLINICALLY ASSESSING PAIN**

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Introduction: Patient reports of pain can vary dramatically, even between patients with similar history and pathology. Unfortunately, surgeons are limited to using self-reported pain scales and functional questionnaires that are largely open to subjective bias. Thus, our goal was to objectively measure sensitivity by designing and testing a new computer-controlled pressure algometer (CCPA) that applies precisely controlled stimuli and records pain responses in real-time. Furthermore, the CCPA simultaneously records changes in heart rate and blood pressure. Methods: In this pilot study of healthy adults, pain threshold and tolerance were assessed over the tibialis anterior muscle 3 times on 2 separate days. Subjects indicated threshold/tolerance during testing by pressing remote control buttons. Results: Fifty-three subjects (21 females, 32 males; mean age 22 years) had complete data. There were no significant differences in individuals' pain thresholds or tolerances across 3 trials within a single day, or across the 2 testing days. Males had significantly higher threshold and tolerance than females. For both genders, pain threshold and tolerance were inversely correlated with the tendency to catastrophize about pain. There were no adverse events. Conclusions: We found that pain sensitivity testing with the CCPA is feasible and reproducible without adverse events. Pain threshold and tolerance measures were consistent within a single session and also between sessions, which supports the within-subjects reproducibility of pain sensitivity results obtained with the CCPA. With these pilot data, we are now establishing a protocol for using the CCPA to quickly and objectively assess pain in the clinical setting.

**Abstract no.: 34166**

**FENTANYL IONTOPHORETIC TRANSDERMAL SYSTEM AND MORPHINE INTRAVENOUS PATIENT-CONTROLLED ANALGESIA FOR PAIN MANAGEMENT FOLLOWING SPINAL SURGERY**

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Introduction: Patient-controlled analgesia (PCA) is regularly used to manage pain following major surgery. The fentanyl HCl iontophoretic transdermal system (ITS), was developed to overcome some of the limitations of IV PCA. The small, self-adhesive, needle-free disposable system is applied to the skin on the upper arm or chest and is controlled by patients clicking a button on the system. Methods: We identified patients that were treated with spine surgery from two prior multicenter, randomized studies and extracted their data. Results: A total of 170 spine surgery patients were identified: 90 fentanyl ITS (40 mcg/activation), 80 IV PCA morphine (1 mg/dose). More patients treated with fentanyl ITS than with IV PCA reported their method of pain control as “excellent” across all time points, but differences did not reach statistical significance. Anesthesiologists’ ratings of “excellent” satisfaction with study treatment were significantly higher for fentanyl ITS (42.2% vs. 22.5%,  $p < 0.01$ ). Discontinuation rates and overall adverse event rates were not different between groups. Patients treated with fentanyl ITS had a higher rate of application site reactions than infusion site reactions in the IV PCA morphine group (31% vs. 8%); however the reactions were typically mild-moderate erythema with spontaneous resolution. Conclusions: Spine surgery patients’ and anesthesiologists’ ratings of satisfaction with pain control method were consistently higher for fentanyl ITS over IV PCA morphine. The two groups had similar adverse event rates and discontinuation rates. Overall, these results suggest that fentanyl ITS appears to be a safe, efficacious alternative to IV PCA in spine surgery patients.

**Abstract no.: 34167**

**VASCULAR INJURY WITH FRACTURE HUMERUS ENCOUNTERED IN A CASE OF DOUBLE AXILLARY ARTERY AND DOUBLE BRACHIAL ARTERY - A RARE CLINICAL CASE REPORT**

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To the best of our knowledge, such a rare combination of double axillary and double brachial arteries encountered in a case of fracture humerus with brachial artery injury is the first to report in clinical practice. A thirty year old female presented to our accident and emergency department with fracture right humerus and absent right radial pulse. Her contrast computed tomographic angiography revealed high bifurcation of right subclavian artery prior to axilla into two axillary arteries. The axillary artery I continued as the superficial brachioulnar artery. The axillary artery II continued as the deep brachioradial artery with an occlusion in its flow at the level of fracture right humerus. Distal to the occlusion, the deep brachioradial artery continued to form intact palmar arch with superficial brachioulnar artery. The fracture humerus was fixed with plate osteosynthesis and bone grafting. Non-invasive treatment method was chosen for brachial artery injury, intraoperatively. With a complete clinico-radiological investigation and better preoperative planning, we protected her superficial brachioulnar artery from iatrogenic injury.

**Abstract no.: 34170**

**NEED OF DUAL PLATING FOR INTRA ARTICULAR DISTAL FEMUR FRACTURES WITH POSTERO -MEDIAL FRAGMENT**

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Introduction: Intra articular distal femur fractures are usually treated by ORIF with plate and screws from either side lateral or medial. Lateral plate fixation is more commonly required. But there is consistent fracture pattern in which intra articular distal femur fractures have Posteromedial fragment and lateral femoral condyle is a separate fragment. Posteromedial fragment is defined as Medial condylar fragment with metaphyseal beak projecting medially and posteriorly. The main fracture plane is sagittal. It is not like Hoffa's fracture which is in coronal plane. When such fractures are fixed with only lateral plating, there is inadequate buttressing of the posteromedial fragment. This results in malunion or non union of the medial fragment. Hence it is necessary to address this fragment with additional medial approach and fixation with posteromedial plate along with lateral distal femoral plate. Material: This posteromedial fragment was not rare and occurred in 30% of cases in our series of 110 cases of intra articular distal femur fractures, operated over the period of 5 yrs. In our series posteromedial fragment was identified on Oblique Xrays or CT Scan in some cases. This fracture pattern should be identified preoperatively so that need of fixation of posteromedial fragment is assessed and Dual plating can be done to avoid loss of reduction and Non union. Result: Dual plating in intra articular distal femur fractures with postero-medial fragment allowed early mobilization, near normal knee movements and no soft tissue healing problems .

**Abstract no.: 34171**

**TO EVALUATE RESULTS OF TREATMENT OF VARIOUS METHODS OF TENNIS ELBOW**

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Tennis elbow is an inflammation of the tendons that join the forearm muscles on the outside of the elbow. The forearm muscles and tendons become damaged from overuse — repeating the same motions again and again. The pain mechanisms have not been fully clarified, but involvement of a neurogenic inflammation mediated via the neuropeptide Substance-P (SP), has been suggested. This leads to pain and tenderness on the outside of the elbow and on top of forearm. Tennis elbow can be treated by various methods. Non operative treatment for tennis elbow includes local injection of steroid, extracorporeal shock wave therapy, orthosis and autologous blood transfusion injection etc. Material and methods: evaluation was made of local tenderness at lateral epicondyle and symptoms on dorsiflexion of wrist. outcome measure for effectiveness of treatment include 1 Pain 2. Global measure of improvement 3. Elbow-specific functional status 4. Maximum grip strength 5. Pain free grip strength. Exclusion criteria: Generalised arthritis, Synovitis of proximal radioulnar joint, Generalised pain syndrome, Radiculopathy from cervical region, Previous trauma or surgery in region of lateral epicondyle, Other disease (medial epicondylgia, impaired sensibility that would affect the outcome measure. Conclusion: Autologous blood transfusion was better than corticosteroid injection which proved better than other non operative methods. key words : Tennis elbow , injection, orthosis , pain, extracorporeal shock waves therapy

**Abstract no.: 34174**

**A REVIEW OF CONTROL GROUP OUTCOMES IN SHEEP FUSION MODELS AND RECOMMENDATIONS FOR FUTURE STUDIES**

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**Introduction:** The ovine model is often used to evaluate new spine fusion technologies prior to clinical testing. Unfortunately, the literature lacks well-structured comparative data predicting expected fusion outcomes at various postoperative endpoints for commonly used control groups. **Methods:** We conducted a literature review of sheep fusion studies using autograft, interbody cages, and/or instrumentation. Fusion data were extracted, converted to our standardized scale, and summarized. Recommended timeframes for future studies designed to show (1) significant differences from controls or (2) similar outcomes with controls, were then developed based on aggregate results. **Results:** Overall, 26 studies of 290 fusion levels were identified: ALIF 134 levels, PLIF/TLIF 28 levels, posterolateral fusion 90 levels, and ACDF 38 levels. Postoperative endpoints ranged from 4-48 weeks. The following endpoints for future studies were recommended (ranges indicate different interbody treatments): ALIF superiority studies 10-16 weeks, equivalence studies 24-48 weeks; PLIF/TLIF superiority studies 10 weeks, equivalence studies >24 weeks; instrumented posterolateral fusion superiority studies 8 weeks, equivalence studies 24 weeks; non-instrumented posterolateral fusion superiority studies 8 weeks, equivalence studies >24 weeks; ACDF, 12 weeks for superiority studies. **Conclusions:** In general, fusion rates varied across surgical procedures and were influenced by the use of different interbody treatments/instrumentation. Designating ideal study endpoints for sheep fusion models has both ethical implications associated with responsible use of animals in research, and economic implications given the cost of animal research. The current results can guide the development of future research methods and help investigators choose appropriate study timelines for various control groups.



**Abstract no.: 34175**

**FIBRODYSPLASIA OSSIFICANS PROGRESSIVA - A RESEARCH STUDY AND FIRST CASE REPORT IN ASIA OF FAMILIAL TRANSMISSION**

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Fibrodysplasia ossificans progressive (FOP) also known as “STONE MAN SYNDROME “ is a type of genetically mediated heterotopic ossification and a rare AD disorder(0.6 to 1 / million) characterized by congenital malformation of the great toes and by ossification of skeletal muscle and soft tissue . It affect patients during the first decade of life with inflammatory fibroproliferative masses in skeletal muscles and soft tissues . Although it is spontaneous to start in majority , rarely it can follow trivial trauma.It is progressive and forms mature heterotopic bone through an endochondral process .The molecular defect is in the gene of receptor for BMPs.FOP occurs sporadically and a lot of large studies have not provided any conclusive evidence of familial transmission. we describe familial transmission of FOP, which has not been reported in any Asian literatures .Our research study involved a father and his 2 daughters all 3 suffering from the disorder with similar congenital deformities.Treatment was started for all 3 persons with NSAIDs in accordance with the drug classification given by international physicians panel .inspite of treatment the disease was progressive relentlessly.FOP pts have considerably reduced lifespan, with death due to cardiorespiratory failure from thoracic insufficiency and pneumonia.Due to lack of large scale series on this front, it cannot be conclusively suggested to do a familial screening for all isolated cases of FOP.we present our research on this rare disorder and our new findings of this disease not mentioned in any literature .

**Abstract no.: 34183**

**MEDICAL MARIJUANA USE CHARACTERISTICS IN PATIENTS WITH CHRONIC SPINE PAIN DISORDERS**

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Introduction: The use of marijuana, or cannabinoids, as a pharmacologic treatment option for chronic pain syndromes has recently become a topic of great medical and social interest. The purpose of this study was to determine the patterns of medical marijuana usage in spine surgery patients in Colorado. Methods: After informed consent, a brief survey regarding marijuana use was administered to patients presenting for spine surgery evaluation. Results: Of 200 patients offered enrollment, 184 (92%) agreed to participate: 83 males (45%), 101 females (55%). Of these, 35 patients (19%) reported marijuana use for pain. While 31 of these patients (89%) used marijuana only for medical purposes, 4 patients (11%) also used marijuana recreationally. Users were significantly younger than non-users (44 vs. 54,  $p < 0.05$ ), but had similar educational and employment characteristics. Of patients reporting marijuana use for pain, 45.5% had a prescription, and 73% of these prescriptions were for spine pain. Most users (83%) reported marijuana “greatly” or “moderately” relieved pain and 81% felt that marijuana worked better than/equal to narcotics. Negative side effects of marijuana use were reported by 14% of users. Conclusions: Marijuana use for pain control is surprisingly frequent in our spine patient population. Most patients using marijuana for spine pain reported moderate to great alleviation of painful symptoms with tolerable side effects. However, negative side effects were reported. Further research is needed to ascertain whether marijuana use for chronic pain is truly efficacious in this population and to determine whether it has any effects on surgical outcomes.

**Abstract no.: 34185**

**VITAMIN D DEFICIENCY IN SPINE SURGERY PATIENTS**

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Introduction: Recently, the alarming prevalence of asymptomatic vitamin D deficiency and insufficiency in otherwise healthy adults has received a great deal of attention. The purpose of this study was to investigate vitamin D deficiency in our spine surgery population and determine the effects of prescription supplementation. Methods: We retrospectively reviewed charts of spine surgery patients and identified those tested preoperatively for vitamin D levels. Vitamin D sufficiency was defined as 30-100 ng/mL. Patients who were vitamin D deficient (<20 ng/mL) or insufficient (20-30 ng/mL) were prescribed vitamin D supplementation. Results: Of 224 patients tested, 35.3% had sufficient vitamin D levels, 27.2% were deficient, and 37.1% were insufficient. One patient (0.45%) had toxic vitamin D levels (>100 ng/mL). Of the patients with sufficient levels, 57% were taking over-the-counter supplements; these patients had higher vitamin D levels than sufficient patients not taking supplements ( $p= 0.054$ ). All patients with insufficient/deficient vitamin D levels were prescribed supplementation; however, only 18.8% were compliant with their vitamin D regimen. Of the compliant patients, 48% had sufficient vitamin D levels 6 months postoperative. Conclusion: More than 60% of tested spine surgical patients had low vitamin D levels. Despite prescriptions for vitamin D supplementation, 81.2% did not adhere to their recommended supplementation. Surprisingly, 52% of patients that were compliant with their vitamin D regimen still had not achieved vitamin D sufficiency after 6 months. Future work is needed to determine the underlying cause for the lack of response to supplementation in this subset of patients.

**Abstract no.: 34199**

**TREATMENT OF COMPLEX PROXIMAL HUMERUS FRACTURE USING DUAL-LOCKING PLATING TECHNIQUE (NEW TECHNIQUE)- CASE SERIES-**

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Introduction; In complex proximal humerus fractures with severe comminution, use of locking plate alone does not provide proper integrity, leading to complication including varus collapse and screw cutouts. In complex proximal humerus fractures with severe comminution, classified as Neer classification 3 & 4, we tried to using Dual-plating technique with Locking plate in 13 patients. Patient's selection. Methods; From Jan. 2008 to Sept. 2013; 81 patients from Jeju National University Hospital, Korea were selected with diagnosis of proximal humerus fracture. We divided two groups in Patients using single plate as 'Group S(23 patients)' and in Patients using Dualplate as 'Group D(13 patients)'. Clinical results of UCLA and Constant scores were compared. Radiographic results were analyzed by duration of union. For evaluation of the degree of anatomical reduction, neck shaft angle(NSA) from anteroposterior view was used by Paavolainen method and Anterior-Posterior(AP) angulation from 3D-CT image in Preoperation state, from Axial view in Postoperation state. Results; By UCLA Assessment results, 13 cases of using Dualplate patients received scores of excellent in 8 cases, good in 5 cases. By Constant score results, 13 cases of using Dualplate patients received average scores of 56.9 in 9 cases. NSA & AP angulation were nearly normal in 'Group D' at Postoperative state. These results were superior to Single-plate group. Conclusion; In patients with complex proximal humerus fractures with comminution, varus deformity or Anterior-Posterior(AP) angulation can occur as a complication with single plate ORIF, therefore dualplate fixation is considered to show better clinical and radiological results.

**Abstract no.: 34202**

**FUNCTIONAL OUTCOME OF ANTERIOR DECOMPRESSION AND LOCKING ANTERIOR CERVICAL PLATING IN TRAUMATIC SUBAXIAL CERVICAL SPINE INJURIES**

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AIM: To analyze the functional outcome of Anterior Decompression and locking anterior cervical plating in Traumatic Subaxial cervical spine injuries. Materials and Methods: 20 cases admitted in Rajiv Gandhi Govt General Hospital with cervical spine injury was taken in study . Fractures was classified according to Alen Ferguson classification and neurological assessment was done according to frankels grading. Surgery done for traumatic cervical spine subluxation, Dislocation & disc bulge with both neurological deficit and no deficit patient. Through anterior approach Discectomy done then Tricortical bone graft taken from iliac crest trimmed and placed into disc space and fixed with anterior cervical locking plate. Post operatively Radiological and Neurological outcome was assessed. Radiological union was assessed with X-ray. Results: Radiological union was 90% and neurological improvement occurred in incomplete deficit cases. Conclusion: Locking Cervical Plate provides more stability with good functional outcome and less implant failure

**Abstract no.: 34203**

**TUBERCULOUS OSTEOLYTIC LESION OF CLAVICLE – REPORT OF 4 CASES**

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Introduction: Tuberculosis of the clavicle without involvement of the neighboring joints can be seen rarely. Most of the patients are children presenting with painful swelling of the clavicle associated with formation of cold abscess or sinuses. Treatment is essentially antitubercular drugs. Surgical excision may be rarely justified when diagnosis is uncertain or disease is unresponsive or for removal of a large sequestrum. Method: We had an opportunity to observe 4 patients with osteolytic lesion of the clavicle with or without the involvement of the neighboring joint. In our study there were 1 male patient and 3 female patients. They were investigated and the pathology of the lesions was evaluated. The incidence of the disease pathology and treatment outcome was analyzed. Results: All cases were diagnosed as Tuberculosis of clavicle histologically by open biopsy and were started with ATT empirically. One case required only conservative management and further 3 cases required surgical intervention. From our study the incidence of osteolytic lesions of the clavicle is likely due to tuberculosis and they are easily treatable with ATT and certain surgical interventions. We found that, the prognosis was good in all cases. Management of osteolytic lesions of clavicle is undemanding, but appropriate diagnosis must be obtained through proper histological and radiological investigations. Any osteolytic lesions of clavicle should be considered as malignant unless proven, as the incidence of tuberculosis of clavicle which also presents as osteolytic lesion is very rare

**Abstract no.: 34204**

**STRATEGY FOR DISPLACED HIP FRACTURES (GARDEN STAGE 3,4) IN GERIATRIC PATIENTS**

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Introduction: There is still some controversy about the choice of osteosynthesis or arthroplasty in displaced hip fractures. The aim of this study was to compare osteosynthesis with arthroplasty in displaced hip fractures. (Garden stage III, IV) Patients and methods: A prospective quasi-randomized controlled study was performed with 64 patients who underwent closed reduction and three cancellous hip screws with trochanteric plate or arthroplasty ( hemiarthroplasty and THA ). Subjects of analysis were bone union, screw cutting out, LSC, revision surgery within 60 days and mortality within 60 days in the osteosynthesis group. An arthroplasty group was focused on intra and extra-operative complications, which were fractures around implants, revision within 60 days and mortality within 60 days. Results: Thirty-two patients were managed with osteosynthesis and 32 patients with arthroplasty between Oct.2010 to Oct.2012. Osteosynthesis group had three cases of cutting out, two cases of secondary fractures (need for revisions) and two cases of LSC after bone union (converted to THA). Arthroplasty group had five intra and extra-operative fractures which needed four revisions within 60 days after surgery. 60 days mortality was 0 cases and 3 cases, respectively. Discussion: Osteosynthesis treated as emergency surgery. Bone union and delayed union had 84%. There was no significant difference about revision surgery between the two groups. Especially, non-cemented hemiarthroplasty and THA trended to have intra and extra fractures. Also, mortality tended to increase in the arthroplasty group. Conclusion: We recommend thinking of osteosynthesis in displaced hip fractures in geriatric patients.

**Abstract no.: 34207**

**A PROSPECTIVE STUDY OF SURGICAL MANAGEMENT OF DISTAL TIBIAL FRACTURES – OUR EXPERIENCE OF 70 CASES**

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we analyzed the functional outcome of distal tibial fractures treated by various methods such as minimal internal fixation and augmented trans-articular external fixation, transarticular external fixation only, open reduction and internal fixation or MIPPO with locking compression plate. Totally 70 cases were analyzed in our study. The minimal follow up was 2 yrs. In our series of 70 cases based on AO classification we had Type A - 40 cases and Type C - 30 cases. Based on Gustillo and Anderson we had 28 cases of compound, 42 cases of closed cases. Of the 70 cases, 20 cases underwent minimal internal fixation and external fixation, 18 cases underwent only external fixation, 14 cases underwent open reduction and internal fixation with locking compression plate and 18 cases underwent mipppo with locking compression plate. We assessed the bone union rate, deformity, ankle range of motion and infection in all cases. We achieved union in all cases. We had 5 cases superficial wound infection, 3 cases of deep wound infection, 3 cases of pin tract infection, 2 cases of mal-union and one case of DVT. We found that Transarticular external fixation was safe and reliable technique in compound fractures and with extensive soft tissue injuries. MIPPO with locking compression plating was safe and effective in all AO type A fractures. We met most of the complication in open reduction and internal fixation with locking compression plating group. Hence open reduction and internal fixation should be done only in selective cases.



**Abstract no.: 34210**

**FUNCTIONAL OUTCOME OF PROXIMAL FEMORAL LOCKING COMPRESSION PLATE IN THE TREATMENT OF UNSTABLE INTERTROCHANTERIC FRACTURES -A SHORT TERM PROSPECTIVE ANALYSIS**

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**OBJECTIVE:** To analyse the functional outcome of pf-lcp in unstable intertrochanteric fracture s. **METHODS:** From may 2010 to may 2012 thirty(30) patients with intertrochanteric fractures 18 males and 12 females were subjected to pf-lcp treatment with, the mean age of the patients was 46(28-75)yrs. Intertrochanteric fractures were classified according to BOYD & GRIFFIN .Detailed clinical conditions of all patients, including blood loss, drainage, length of incision were recorded individually . patients were reviewed after 6 weeks,3months,6months& 1year after the operation.functional outcome (Harris hip score) and the progress of healing as well as complications were recorded. **RESULTS:** Among the 30 patients ,24(80%)patients were available for follow-up after 1year.The fracture united in all patients satisfactorily except one case with varus collapse.The intra operative blood loss, rehabilitation and union time were shorter and the functional recovery is better than DHS and comparable to newer cephalo-medullary nails.The complications also fewer than that of other implants. **CONCLUSION:** The pf-lcp can be a feasible alternative in the treatment of intertrochanteric fractures.Treatment with pf-lcp can provide good to excellent healing with limited complications.

**Abstract no.: 34214**

**FUNCTIONAL OUTCOME ANALYSIS IN LONG BONE FRACTURES AND DISLOCATION ASSOCIATED WITH VASCULAR INJURY**

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AIM: To analyse the functional outcome in long bone fractures and dislocation associated with vascular injury. Materials and methods: 31 cases with long bone fractures and dislocations associated with vascular injury of age 18 & above admitted in Rajiv Gandhi Govt General Hospital from Oct 2011 to Aug 2012 was taken into this study, 11 were closed and 19 were open injuries. All Open fractures were graded with Gustilo Anderson score. Comparative MESS Scoring was done score with  $\leq 8$  was taken into study. Then vascular surgical intervention with Reverse Saphenous Venous graft for 26 cases, embolectomy for 2 cases and observation for arterial spasm for 2 cases were done along with temporary stabilization with external fixators. Fasciotomy was done in all cases. Flapcover done for needed cases. SSG done for fasciotomy wound in the 1st or 2nd post OP week. 2 weeks after SSG definitive Internal fixation was planned . Following things are analyzed. Duration between injury and vascular repair, Functional viability of limb, post operative stiffness, benefits of two staged procedure, Any delay in union of bone. Results: Temporary stabilization of fractures and vascular repair assessing limb survival followed by definitive fixation is more useful in Grade IIIB injuries. For Grade I, II and IIIA injuries primary definitive fixation with vascular repair gives good results.

**Abstract no.: 34219**

**URETHRAL & BED SORE COLONIZATIONS AND FUTURE URINARY INFECTIONS IN SPINAL CORD INJURY PATIENTS**

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Introduction: Spinal Cord Injury (SCI) patients with neurogenic bladder dysfunction often suffer from symptomatic urinary tract infections (UTI). They require indwelling or clear intermittent catheterization (CIC) for bladder drainage and may suffer from associated complications like bedsores. Aim: To investigate the colonization of the distal urethra, bed sores and bladder in SCI, and to examine the association among bacteriuria, colonization of the distal urethra and bed sores. Methods: A total of 126 patients with SCI (45 females and 81 males) were studied. Weekly cultures were taken from distal urethra, urine and bed sores (if present) for 3 weeks. Standard laboratory methods were used to culture the specimens. Results: E. coli were the predominantly isolated organisms from the urethral and urine cultures. Pseudomonas was colonized more in male patients with bed sores. There was concordance between simultaneous urethral and urine cultures concerning the microorganism cultured especially in male patients; and also between urethral cultures collected 1 week before were evaluated in patients with later on positive urine cultures. There was no significant correlation between bed sore and urine cultures. In female patients, a poor correlation was found between urethral and urine cultures. Conclusion: Our study shows that the urethral colonization can be predictive of future urinary infection in male patients with SCI; however, no such correlation is seen in females. Bed sore colonization is not significantly predictive of urinary infections in both sexes.

**Abstract no.: 34220**

**SINGLE LOCKED POSTERIOR PLATING FOR EXTRA-ARTICULAR DISTAL HUMERUS FRACTURES: EVALUATION ANALYSIS**

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**Background:** The appropriate treatment of extra-articular distal humerus fractures is controversial. Functional bracing can yield satisfactory result but has problems like mal-union, elbow stiffness, non-union and skin breakdown. Operative fixation offers more predictable alignment, immediate stability and early rehabilitation. **Material & Methods:** Fourteen such fractures between 19 and 65 years were included. Two were compound fractures. Three reported two months post injury. Nine were comminuted ones. None had neurological deficit. All were operated by modified posterior approach as described by Gerwin, Hotchkiss and Weiland. Primary stability was achieved by lag screws as per the requirement followed by a single posterior plate fixation using either a locked reconstruction plate or a locked DCP, applied in a neutralization mode. Care was taken to contour and orient the plate obliquely in coronal plane so that its distal end would come on to the postero-lateral condyle and the proximal end to postero-medial shaft, yet being with in the bone corridors. Expensive pre-contoured plates were not used. Three patients needed bone grafting. All were encouraged for supervised physiotherapy in post-operative period. **Results:** Three patients had post-operative radial nerve palsy which recovered spontaneously in six months. One had superficial skin infection that settled after local dressings. Two had plate impingement distally with permanent loss of terminal elbow extension. Average time for fracture union was 3.4 months. None had mal-alignment, fixation failure, joint stiffness, non-union or revision surgeries. **Conclusions:** Single locked posterior plate fixation is a safe and reliable option for extra-articular distal humerus fractures.

**Abstract no.: 34222**

**MENISCAL REPAIR; ONE YEAR FOLLOW-UP**

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Meniscal preservation is a procedure that become more recommended, the development of new repairs system made the procedure easier. Our study is prospective, in which we performed meniscal repair using an "all-inside" system in order to evaluate its clinical efficacy. Methods We used the Fast Fix system (smith & nephew) in 22 patients. Preoperative and postoperative evaluation was performed using the International Knee Documentation Committee (IKDC) and the Lysholm questionnaires. Results The study included 22 patients, 18 completed a follow-up of one year. We performed 18 meniscal repairs, the average age was 23, and the follow up was for one year. All the patients were males, with 13 tears of medial meniscus and 5 of the lateral, all the tears of the medial meniscus were in the posterior horn. All patients had tears in cooper zones 1 and 2. An average of 2.1 sutures was used (between 1 and 4). 10 (56%) underwent concurrent ACL reconstruction. Tear length average was 2 cm (between 1 and 4 cm). Objective IKDC score was "A" in all the 18 patients who had completed the follow up. The subjective IKDC and Lysholm scores were improved statistically after the operation. Discussion & Conclusion The Fast Fix meniscal repair system is an "all-inside" system that offers some advantages like "all-inside" rigid implants, according to our experience, the results in one year follow up seems to be good, similar to the results after RapidLoc sutures in one year follow up. we recommend preserving the meniscus when possible.

**Abstract no.: 34224**

**ALL-INSIDE MENISCAL REPAIR: THREE YEARS FOLLOW-UP**

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Meniscal preservation is a recommended procedure. the development of new systems made the procedure safer. Our study is prospective, we performed meniscal repair using a new "all-inside" system to evaluate its efficacy. Methods We used the RapidLoc repair system (Mitek products) in 22 patients. Evaluation was performed using the International Knee Documentation Committee (IKDC) and the Lysholm questionnaires. Results The study included 22 patients with 22 meniscal repairs, the average age was 22. There were 18 males, and 4 females, with 20 tears of medial meniscus and 2 of the lateral, 90% of the medial were in the posterior horn. All patients had peripheral tears. An average of 2.5 sutures was used. (41%) underwent concurrent ACL reconstruction. Nine patients had a revision arthroscopy. 13 patients (59%) still have the suture inside their knees. Objective IKDC score in three years follow up was "A" in all the 13 patients. The subjective IKDC and Lysholm scores were improved statistically after the operation. We didn't find a relation between the age of the patient and the final results. Discussion The RapidLoc meniscal repair system offers some advantages, according to our experience, the results that were good in a follow up of one year, seems to be worse in three years follow up. At the end of the day, 13 young patients (out of 22) live with their preserved meniscus for three years and enjoy its benefit, and therefore, we still recommend repairing the meniscal tears at young patients who had peripheral tears.

**Abstract no.: 34228**

**INDIRECT OSTEOSYNTHESIS IN THE TREATMENT OF ANKLE FRACTURES TYPE C WITHOUT DISTAL TIBIOFIBULAR SYNDESMOSIS FIXATION**

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Introduction: Ankle fractures type C result in tibiafibular injuries, that can be ligamental, boned, or boned-ligamental. The ankle ligament injury was detected in 50,4% of cases. In this type ligaments of the syndesmosis tear between places of their attachment to the bones. Bone-ligament injury was observed in 48%, only one of tibiofibular ligaments was torn, the second one was disinserted together with the cortical area of the underlying bone. On the X-ray there is a tibiofibular diastasis and a fracture of anterior and posterior margins of tibia. Bone injury was detected in 1,6%, there was a disinsertion of anterior and posterior tibiafibular ligaments together with the underlying bone. On the X-ray of the ankle joint there was a tibiofibular diastasis detected, fracture of anterior and posterior tubercles of the tibiofibular notch. Methods: The reconstruction of ankle mortise in injury type C is performed using indirect repair method of damaged bone-ligamental structures instead of using fixators. This results in anatomical reconstruction of distal tibiofibular syndesmosis. After removal of sutures a three-point polymeric dressing was applied, and right after that the patients were taught to walk without complementary support (patent RF № 2252721). Results: results of the treatment of ankle fractures type C were obtained in 52 patients over a period of 1-5 years, they were analyzed using the "AnkleScoringSystem", that consists of 100 points. Excellent results were obtained in 31 (59,6%) patients, good results in 17 (32,7%), satisfactory in 4 (7,8%) cases. There were no unsatisfactory results obtained.

**Abstract no.: 34233**

**RECONSTRUCTION OF LARGE GIANT CELL TUMOUR AROUND KNEE  
BY MODIFIED SANDWICH TECHNIQUE**

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Ten cases of GCT (proximal tibia /distal femur) with subchondral extension were treated with marginal/intra-lesional excision and reconstructed by using modified sandwich technique. Tumour mass was removed en masse, the remaining cavity was curetted and chemical cauterisation with adjuvants like hydrogen peroxide and phenol was done. Reconstruction was done in three layers with morcelized cancellous graft in subchondral area followed by perforated gelfoam, which was further supported by fibular pillars and bone graft substitute/ cancellous bone graft was packed in remaining space .Implant fixation was not done. Average time for graft incorporation was 6 months. There were minor complications that included superficial infections in 3 cases. There were no cases of graft fracture or delayed subchondral segmental collapse or recurrence and limb salvage was not required in any cases. Average range of motion around knee joint was 0-100 degree. These cases often require limb salvage and routine curettage and bone grafting usually have equivocal results.



**Abstract no.: 34236**

**MANAGEMENT OF PULSE LESS PINK HAND IN SUPRACONDYLAR FRACTURES OF HUMERUS WITH BRACHIAL ARTERY EXPLORATION AND FIXATION WITH K WIRES -A STUDY OF 24 CASES**

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The management of pulse less pink hand in supracondylar humeral fractures still remains controversial. We report functional outcome in 24 children with Gartland's Type 3 fracture and pulseless pink hand managed with brachial artery exploration and fixation with K wires. We retrospectively analyzed 24 cases operated between 2008 and 2012. Mean age at time of injury was 5.2 years (range 2.1 – 7.4 years). All children had monophasic flow on Doppler analysis and absent flow in the brachial artery distal to the fracture site on CT angiography. All were treated with brachial artery exploration, urgent reduction and k wire fixation. 12 patients had closed reduction and percutaneous pinning (CRPP), 12 had open reduction as CRPP could not be done. 12 patients had brachial artery spasm, 10 had thrombus (removal of thrombus and end-end repair was done) and in 2 patients vein grafting was done. All patients had palpable pulses after surgery. Mean clinical follow-up was 16 months (13-46 months). At final follow up, clinical examinations were performed for elbow range of motion, sensation, vascular status, pain at rest, pain during exercise using visual analogue score (range 0-10) and claudication as guided by parents. The mean elbow range of motion was 86 degrees (Range 52-110 degrees); it was less in the patients who had open reduction and K wire fixation (Mean 72 degrees). Brachial artery exploration in supracondylar fractures with pulseless pink hand leads to decreased elbow range of motion.

**Abstract no.: 34237**

**EXPRESSION OF IMP3 AND IGF2 IN GIANT CELL TUMOUR OF THE SACRUM AND MOBILE SPINE: CORRELATION WITH TUMOUR RECURRENCE AND ANGIOGENESIS**

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Giant cell tumour (GCT) of bone is a hypervascular and aggressive tumour which rarely occurs in the spine. The local recurrence rate is high and the fundamental knowledge of its biological behavior remains unknown. The purpose of this study was to investigate the expression levels and contributions of IMP3 and IGF2 in the angiogenesis and recurrence of GCT of the sacrum and mobile spine and their correlations. An immunohistochemical method was used to investigate the expression of IMP3, IGF2, and microvascular density (MVD) in 28 patients with GCT of the sacrum and mobile spine. Their differences in expressions were statistically analyzed and their correlations with angiogenesis and recurrence were evaluated. The mean MVD of IMP3 and IGF2 were significantly higher in positive group than in negative group ( $P < 0.05$ ). Moreover, a significant correlation was found between the IMP3 and IGF2 ( $P = 0.009$ ). The log-rank test revealed that local recurrence free survival time (LRFS) was significantly shorter in the IMP3 positive group than in the IMP3 negative group ( $P = 0.003$ ), and the difference in the IGF2 positive group and the IGF2 negative group was statistically significant also ( $P = 0.009$ ). Our study demonstrated that IMP3 and IGF2 might act with a synergistic effect and can positively regulate the angiogenesis in giant cell tumour of bone. High expression of IMP3 and IGF2 might indicate the local recurrence of GCT. The result suggests that some specific drugs which inhibit IMP3, IGF2, or their receptors may have a good therapeutic effect for GCT.

**Abstract no.: 34239**

**PROSPECTIVE STUDY OF DISTAL FEMORAL FRACTURES FIXED WITH LOCKED COMPRESSION PLATE**

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**Objective-**Prospective study of distal femoral fractures fixed with locked compression plate.  
**Introduction-**Distal femoral fractures have been variously managed in the past. The predominant factors affecting outcome have been the limitation of knee ROM due to late mobilisation, inadequate fixation due to osteoporosis, comminution and muscle forces around the knee and quadriceps tethering due to unscrupulous stripping. We propose that distal femoral LCP is a device which addresses these issues due to sturdy fixation allowing early movement and minimal quadriceps stripping as the plate need not be abutting the bone surface.  
**Methods and materials-**A prospective study was conducted at HOSMAT hospital between June 2009-December 2011. Twenty patients with distal femoral fractures were fixed with LCP during this period. Adequacy of reduction was checked and early knee mobilisation was started. Fractures were classified according to AO classification. Final outcome was assessed according to Sander's Scoring system. Patients were followed up for an average period of 18 months.  
**Results-**Nineteen of the 20 patients had uneventful fracture union at 14-16 wks clinically. Average ROM was 100 degrees. 18 patients returned to their activities of pre injury level. The average Sander's Score was 29. One patient had implant failure for which implant removal and reosteosynthesis with supracondylar nail was done.  
**Conclusion-**LCP is an excellent implant for the fixation of distal femoral fractures giving sturdy fixation and allowing early range of movement for optimal function.

**Abstract no.: 34240**

**ACUTE SURGICAL MANAGEMENT OF SCAPHOID FRACTURES**

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Introduction Scaphoid fractures are the second most frequent fracture type of the hand 80%- 95%.we will present our result for the treatment of this condition Methods: this is a retrospective study Twenty five patients were admitted to the orthopedic section in Hamad General Hospital over 4 years, from 2006 to 2009. All had acutely displaced fractures of scaphoid , which where treated with open reduction and internal fixation. Results :All of the patients had history of fall down on outstretched hand. Surgeries were performed between (3-6) days from admission. 19 cases were associated with perilunate dislocation . 16 of them were approached surgically through a dorsal incision and 9 through a volar approach. Our detailed Outcome will be presented .

**Abstract no.: 34242**

**TREATMENT OF PATIENTS WITH PROXIMAL HUMERUS FRACTURES**

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273 patients with proximal humerus fractures have been treated for 8 years at the Research Institute of Traumatology and Orthopedics in Astana, Kazakhstan. According to AO classification, type A fractures were observed in 33 patients, type B in 17 and Type C in 2. Surgical treatment was performed in 135 patients. 83 patients received T and L-shaped plates. Needle and wire was used in 28 and LCP plate in 6 patients. 52 patients received a new device developed at clinic: device for osteosynthesis (patent number 42528), device for osteosynthesis (provisional patent No. 14977 of 10.08.2004). Long-term results of surgical treatment (from 1 to 6 years) were assessed in 59 patients of control group and 48 of main group. Evaluation of results of surgical treatment was performed according to scheme of E.R.Mattisa The patients of the control group obtained good results in 30 cases, satisfactory in 14, unsatisfactory in 15. The outcome of surgical treatment of patients of main group assessed as "good" in 30 patients, "satisfactory" in 13, "unsatisfactory" in 5 patients. For patients of young and middle age with type A fractures we recommend to use T-and L-shaped fixatives, as well as devices for clinics providing interfragment compression. For patients with fracture of type B and low bone density we recommend to use sparing synthesis according to Weber-Muller, or use the device of clinic with locking screws. Patients with fractures of type C shall be used a pin synthesis or primary shoulder prosthesis surgery.

**Abstract no.: 34243**

**ANGIOMATOUS MALFORMATION: A RARE CAUSE OF RECURRENT SWELLING OF THE KNEE JOINT**

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Angiomatous Malformation of the muscle around the knee joint is an extremely uncommon cause of recurrent swelling of the joint. We report a case of a 24-year-old adolescent female who presented with recurrent episodes of knee joint swelling. Though the history and physical examination was typical, investigations mainly Angiogram clinched the diagnosis. We have confirmed it as a Venous Malformation by Biopsy technique after Excision of the malformation.

**Abstract no.: 34245**

**MANAGEMENT OF NEGLECTED AND RECURRENT CONGENITAL TALIPES EQUINO VARUS DEFORMITY BY CONTROLLED FRACTIONAL DISTRACTION USING JOSHI'S EXTERNAL STABILIZATION SYSTEM**

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Congenital talipes equino varus is one of most intriguing, enigmatic congenital foot deformity since hitherto to challenge orthopedicians worldwide. Management of relapsed, neglected, recurrent clubfoot unlike virgin case is even more perplexing as deformities become fixed and secondary bony changes occur with time. Present study of one fifty feet was undertaken with objective of studying efficacy and complications of JESS fixator in difficult subset of neglected, relapsed and recurrent ctev. Clinical evaluation of deformity using bull hospital functional rating system revealed significant clinical and stastical improvement between preoperative and postoperative functional scores in terms of deformity correction, subtalar motion, ankle movement, position of heel, forefoot appearance and radiological parameters. Complications included pain, swelling in majority of cases with pin tract infection, skin damage and flexion contracture of toes occuring in no of patients. In conclusion, JESS fixator gives excellent results in difficult subset of neglected, resistant & recurrent cases achieving goal of cosmetically acceptable, pliable, functional, painless and plantigrade foot.

**Abstract no.: 34246**

**A RARE CASE OF SACRAL CHORDOMA- CASE REPORT**

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Chordoma is rare, slow growing but locally aggressive malignant tumour, derived from primitive notochordal elements, and it is usually found in the sacrococcygeal area. Chordomas are difficult to excise completely because preservation of sacral stability and sacral nerve pathways to the rectum and bladder limit the extent of surgery. We report a case of sacral chordoma of an adult female where we have excised the tumour by posterior approach.



**Abstract no.: 34252**

**CALCANEUM WOUNDS COMPLICATIONS**

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lateral extensile approach to the calcaneum is frequently used for fracture fixation. Considerations regarding calcaneal wound complications are significant. We revised the wound complications in calcaneum fracture patients operated by our team . Of 60 patients seven had calcaneal wound delayed healing or oase. All defects were in the periangular area of the incision. Two wounds were debrided and the other resolved with Dressing changes +/- antibiotics. Considerations were made to possible causes of the location of the wounds defects. Conclusion: We suggest the periangular area of the lateral extensile approach to be considered risky and to give additional efforts to avoid related complications.

**Abstract no.: 34253**

**NOVEL POSTERO MEDIAL APPROACH FOR THE FIXATION OF AVULSED POSTERIOR TIBIAL SPINE**

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**Objective-** To compare the Novel approach for fixation of PCL tibial avulsion fracture with the classic midline approach. **Introduction-** Posterior tibial spine fractures have been traditionally fixed through classical midline approach. We have been using a modification of Burk's and Schaffer's approach to fix the PCL tibial avulsion fractures since three years and have compared it with midline approach. **Methods and materials-** A total of 19 patients underwent fixation of PCL tibial avulsion between December 2008 and December 2011. Thirteen patients were operated by the midline approach and 6 patients by our new approach. It involves Hockey-stick incision on posteromedial knee going between hamstrings and gastrocnemius, vertical division of oblique popliteal ligament and transverse incision over meniscotibial part of the capsule. Duration of surgery, length of incision and functional outcome using Lysholm score were compared between the two approaches. **Result-** Average duration of surgery by the standard and the new approaches were 110 minutes and 35 minutes respectively and was statistically significant. Lysholm score was comparable between the two approaches at 12 months of average follow up. The length of incision was half the size of the standard approach. **Conclusion-** The modified posteromedial approach to the PCL presented establishes a major simplification in exposure with a significantly reduced risk of surgical morbidity as compared to the prevailing procedures. **Key words -** Posteromedial approach, classic midline approach, PCL avulsion.

**Abstract no.: 34254**

**OSTEOBLASTIC ACTIVITIES PROMOTED BY SI-INCORPORATED TiO<sub>2</sub> FILM DEPOSITED BY CATHODIC ARC**

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Silicon-incorporated TiO<sub>2</sub> (Si-TiO<sub>2</sub>) films were deposited on titanium substrates using cathodic arc. The biological effect of the films was evaluated through osteoblasts cultured on the films. The film characteristics including surface topography, phase and element composition, and wettability were estimated. TiO<sub>2</sub> film served as the control group. The morphology of the adhered cells was observed. F-actin, vinculin and type I collagen were dyed with fluorescent. Cytotoxicity test, the number of adherent cells and their ALP activity were investigated. Moreover, the gene and protein expression levels of osteocalcin and type I collagen were measured. XPS analysis showed that silicon (4.6%) was incorporated into the Si-TiO<sub>2</sub> films but no difference of morphology was found between both films. Phase composition of Si-TiO<sub>2</sub> films did not alter apparently, but water contact angle decreased after the incorporation of silicon. Cells cultured on the Si-TiO<sub>2</sub> film performed more cells, stronger cytoskeleton and focal adhesion, better cellular spreading than those on the TiO<sub>2</sub> film. Moreover, the expression levels of osteocalcin and type I collagen genes, type I collagen proteins were up-regulated in cells on the Si-TiO<sub>2</sub> films after 3 d. The incorporation of silicon changes chemical composition of the Si-TiO<sub>2</sub> film surface, decreases water contact angle of the surface and shows better hydrophilicity. The Si-TiO<sub>2</sub> film promotes MG63 cells' activities compared to TiO<sub>2</sub> film. No significant difference of the percentage of apoptotic cells was found between cells cultured on both film surfaces. Si-TiO<sub>2</sub> film significantly enhanced cytocompatibility and provides options for surface modification of implants.

**Abstract no.: 34280**

**A MODIFIED RETROGRADE DRILLING TECHNIQUE OF OSTEOCHONDRAL LESIONS OF THE TALUS: A TECHNICAL NOTE**

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**Purpose** Osteochondral lesions of the talus typically present as denudation of cartilage after trauma or as cystic lesions in the bone with intact cartilage. Osteochondral fractures require an anterograde approach for treatment. Lesions with intact cartilage can be treated by retrograde drilling and packing with bone graft. Because subchondral lesions are usually situated on the posterior aspect of the talar dome, these lesions can be difficult to localize with an image intensifier. **Description of Technique** We describe a method in which ankle arthroscopy is used to visualize a subchondral lesion, and an ACL jig is used to precisely target the lesion. **Patients and Methods** We performed retrograde drilling in two patients: a 29-year-old man and a 34-year-old man. Each patient presented with a subchondral cystic lesion in the posteromedial aspect of the talus. Both patients were treated with our modification of the standard technique for retrograde drilling. Patients were evaluated before and after surgery using AOFAS score, and X-rays of ankle joint. **Results:** The X-rays taken at the 3-month follow-up showed a well-maintained contour of the talar dome with complete incorporation of the bone graft. The AOFAS scores for both patients were greater than 90, excellent per the Saxena and Eakin criteria. **Conclusions:** This method decreases radiation exposure, invasiveness, and surgical time of the procedure .

**Abstract no.: 34290**

**EFFECT OF BONE MORPHOGENIC PROTEIN2 ON CULTURED HUMAN TENOCYTES.**

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**Background :** Tendon repair and reconstruction are commonly used procedures in orthopedic practice. Fibrous adhesions, mechanical failure, or widening at the bone-tendon, tendon-tendon junction are the frequently encountered problems in tendon repair. A number of growth factors play an important role in tendon healing but are not available for clinical use. BMP (bone morphogenic protein) molecules have been extensively studied and proved to have favorable influence on bone healing. **Purpose:** The purpose of present study was to study the effects of BMP2 on the cultured human tenocytes. We hypothesized that BMP 2 could help in tendon cell proliferation if given in proper dosage because of its ability to promote differentiation of mesenchymal cells. **Material and methods:** Healthy tendons from donors were used for harvesting tenocytes. The tendon strips were treated with 0.25% trypsin-EDTA and cultured. Tenocytes were cultured in DMEM/F12 supplemented with 0%, 1%, 10% respectively for 96 hours each.. BMP2 was added in different concentrations (0, 2, 5, 10, 20, 40 and 100ng/ml) to each well of cultured tenocytes. 0 ng/ml concentration of BMP2 served as the control group. Cell proliferation and viability were analysed by MTT ([3-(4, 5-demethylthiazole-2-yl)-2,5-diphenyltetrazolium bromide] assay and by BrdU (5-bromo-deoxyuridine) kits. Osteogenic activity of BMP2 was evaluated by alkaline phosphatase, osteocalcin, and calcium analysis. **Results :** BMP2 increases proliferation of human tenocytes at 20 ng/ml concentration. At serum 1% concentration BMP2 increased collagenI production as well as osteocalcin formation. **Conclusion :** BMP2 holds a favorable potential for use in tendon repair and reconstruction especially at tendon-bone junction in clinical scenario.

**Abstract no.: 34291**

**DEPRESSED FRACTURE CALCANEUS – MINIMAL ACCESS ELEVATION & BONE GRAFTING (MODIFIED ESSEX LOPRESTI PROCEDURE)**

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Introduction : Calcaneus is more frequently fractured than any other tarsal bone and causes tremendous disability. This disability can be reduced by correct articular-alignment of articular facets. Displaced intra-articular fractures comprise 60-75% of calcaneal fractures & 90% of these occur in men 25-45 years of age. Essex Lopresti described the technique of elevation-and-fixation of tongue-type fractures using percutaneous-pin. However, E.L procedure can cause pin-tract-infections & the incidence of fracture subsidence is high in follow-up. Materials & Method We treated 25 cases of depressed fracture-calcaneus by minimal-access-elevation and percutaneous bone-grafting of the void below the elevated fragment as a modification of method described by E.L. Patients with tongue-depression & central-depression type of fractures were included; and highly comminuted-fractures with bag of bones were excluded. Patients were discharged 48 hours after the procedure with back-slab and were followed-up in OPD at up to 3 years. This paper describes a technique which eliminates pin-tract infection as the K-wires used are bent and kept below-the-skin. The chances of subsidence decrease as bone-grafts are used to fill up the void. Results : The functional results and overall outcome in the operatively treated group were better, had no wound healing complications and less subsidence. Conclusion: This modified method of minimal-access-elevation and bone-grafting is a useful method of treating the depressed fractures of calcaneus and leads to restoration of calcaneal height, length & overall shape. This method avoids pin-tract infections associated with E.L method and also results in better restoration and maintenance of the articular alignment.

**Abstract no.: 34294**

**DUAL ACL GANGLION CYSTS: A RARE CASE REPORT**

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Intra-articular ganglion cysts of the knee joint are rare and mostly an incidental finding on MRI and arthroscopy. Most of previous studies have reported a single ganglion cyst in the knee. There are few reports of multiple cysts in the same knee but these originate from different structures in the knee joint. We are reporting a case of dual ACL ganglion cysts. To the best of our knowledge, no such case has been reported in the indexed English language literature till date. The patient came with history of painful restriction in movement in flexion and terminal extension and was diagnosed as posterior ACL ganglion on MRI, but on arthroscopy was found out to have two cysts arising from ACL. However, post surgery, a review of the same MRI also showed the presence of the anterior ACL cyst. These were successfully removed and confirmed to be ganglion cysts on histopathological examination. Patient had resolution of symptoms after the treatment. Such a finding of two ganglion cysts in a single ACL is a rare one, hence the operating surgeon should be aware of such a situation in order to decrease the chances of missing one. Also a detailed diagnostic arthroscopic evaluation must be conducted in all cases undergoing arthroscopic surgery so as to pick up lesions which can be occasionally missed on a MRI examination as was seen in our case.

**Abstract no.: 34296**

**MIRROR FOOT AND OUR SURGICAL EXPERIENCE: A CASE REPORT**

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Preaxial mirror polydactyly of foot is a rare congenital anomaly with even fewer documentations for definitive treatment. To provide a sensate, near normal foot with ability to wear shoes is difficult to achieve in this variant with fibular dimelia and calcaneal duplication, with a delayed presentation at 6 years. Our case obtained satisfactory cosmetic and functional outcome upon excision of accessory calcaneum and the medial three toes along with TA lengthening by Z-plasty. The defect was covered with local full thickness skin flap: a first of its kind mentioned in literature. We report this case because of its rarity and to share our surgical experience and its acceptable outcome.



**Abstract no.: 34298**

**PATTERNS OF MENISCAL DAMAGE ASSOCIATES WITH ACUTE ACL RUPTURE**

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Background: The relationship between ACL rupture and type of meniscal tear has been explored in the literature, but there was no conclusive evidence that resolve the question. Several studies have revealed preponderance of the lateral meniscal tears (LMT). In other studies, the medial meniscal tears (MMT) were the most common type of meniscal injury. The purpose of this study is to determine the patterns of meniscus damage associated with ACL rupture and predict the commonest type of meniscus damage in our population that associated with ACL tear. Methodology: A review of the medical records of all patients who underwent arthroscopic ACL reconstructions. The relative incidences of associated meniscal pathologies were analysed in correlation with age, side of injury, mode of injury, sport levels and gender as risk factors. Statistical analysis was performed to obtain individual data correlation. Results: A total of 294 patient underwent ACL reconstruction. 175 patients were present with MMT, 91patient present with LMT, and 28 patient present with both associated with acute ACL rupture. We found no significant different between medial, lateral and both meniscus tear with respect to weight, height , BMI , level of sport , and mode of injury since p-value is more then 0.05 .but there was significant difference with respect to age since p-value is 0.002 between them. Conclusion: We concluded that the MMT is more common than LMT and both in acute ACL cases. The factor that significantly affects incidence of meniscal co-morbidity in ACL injury is the age at presentation.

**Abstract no.: 34303**

**EFFECT ON BLOOD LOSS AFTER LOCAL APPLICATION OF AUTOLOGOUS PLATELET GEL IN TKR**

**Shashikanth Shankaranarayana VOKKALERI, Aditya Aggarwal AGGARWAL, Sandeep PATEL  
Pgimer, CHANDIGARH (INDIA)**

This study prospectively assessed the effect of local application of autologous platelet gel on blood loss, pain, wound healing, range of motion(ROM) and functional outcome following total knee arthroplasty(TKA). Forty consecutive patients undergoing total knee arthroplasty were randomly allocated to autologous platelet gel(APG) group and control group using envelope method which was opened on the day of surgery. Intervention group consisted of seventeen patients. twenty three patients served as controls. Platelet rich plasma prepared from patients blood and calcium chloride were applied to the posterior recess, the gutters and the capsule of the knee joint intraoperatively in the APG group. Postoperative blood loss, pain , range of motion , wound healing and functional outcome using knee society score(KSS) and WOMAC SCORES were measured at regular intervals for follow up period of six months. Results: Blood loss estimated by haemoglobin (Hb),weight of soaked dressings,and amount of blood transfusion was significantly lower in the APG group than in the control group. The patients in the APG group compared to the control group experienced less pain and used fewer narcotics. APG group patients achieved significantly higher range of motion earlier than the control group patients. There was no significant difference between the wound scores of APG group and control group patients. APG group patients achieved faster and better functional outcome than the control group but it was short lived. we conclude that autologous platelet gel has a positive effect on several short term outcomes after TKA without any side effects.

**Abstract no.: 34306**

**CLOSURE TECHNIQUES IN ORTHOPAEDICS: SUTURED VERSUS STAPLES**

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**Introduction and Aim:** There exist a number of methods for wound closure, with a consensus that subcuticular closure offers aesthetic advantage, compared to staples. When considering surgical site infection, one cannot help but find it confusing at best, and a minefield of conflicting evidence at worst. We aim to critically appraise the evidence in the debate over closure technique in orthopaedic surgery. **Methods:** A literature search was conducted and trials comparing wound closure techniques and surgical site infection in orthopaedic surgery were reviewed and critically appraised. **Results:** Whilst there exists a paucity of research, evidence suggests there is value in considering subcuticular sutures as first line, particularly in the case of hip arthroplasty. Smith et al show this in the 2010 meta-analysis, however 5 of the 6 trials were poorly designed with a particular lack in randomised control trials. **Conclusion:** The evidence regarding surgical site infection is conflicting. Moderately lower rates of infection, dehiscence, and an improved cosmetic result, have all been demonstrated with the use of subcuticular sutures for closure. The discernible advantage in using staples is related to speed and ease of use. The small number of trials which have been conducted provide limited evidence but show a general trend towards suture closure. Hence further, prospective randomised control trials are required. Potential developments in this area may improve outcomes, antibiotic coated materials and absorbable dermal staples maybe the key to reducing infections and improving patient satisfaction.

**Abstract no.: 34309**

**FUNCTIONAL AND RADIOLOGICAL OUTCOME OF OPEN REDUCTION  
INTERNAL FIXATION AND DEFECT AUGMENTATION WITH TRI-  
CALCIUM PHOSPHATE IN TIBIAL PLATEAU FRACTURES**

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Introduction: In tibial plateau fractures along with restoration of articular surface filling of metaphyseal defects is necessary for a well aligned congruous joint. In our study we used injectable Tri-calcium phosphate to fill the void in metaphyseal region. Method: This is a retrospective and prospective study of twenty patients operated in our institute. Results: Radiologically, as per Rasmussen score two(2) patients had excellent results, seventeen(17) patients had good and one(1) patient had fair result. The mean radiological score was 12.9 (range 10-18). Clinically, six(6) patients had excellent results, thirteen reported(13) good and one(1) patient reported fair outcome. The mean Rasmussen functional score was 24.5 (range 13-30). Conclusion: Articular reconstruction with rigid internal fixation and Tri-calcium bone substitute leads to reliable healing and clinical and radiological outcome.

**Abstract no.: 34310**

**CERAMIC REVISION BALL HEADS IS THE TITANIUM SLEEVE AN ISSUE?**

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In some cases of revision of the femoral head when the femoral stem is well fixed in the bone a standard ceramic femoral ball head cannot be recommended. A specific ceramic revision ball head, BIOLOX® option, now allow surgeons to choose a femoral head made of ceramic with a specially designed titanium sleeve (TiAl6V4) able to reduce the effect of stem taper imperfections. Ceramic femoral ball heads are made of alumina matrix composite ceramics, BIOLOX® delta. They are available in diameters of 28mm, 32mm, 36mm and 40mm. Recent publications about the effects of bearing surfaces on corrosion at the interface showed that implants with ceramic heads had significantly lower stem damage in comparison to metal ball head. Concerning the interface Stem - Titanium sleeve, three in-vitro test methods were performed with BIOLOX® option: • Corrosion test according to ASTM F1875 with three taper metals (TiAl6V4, Stainless steel and Cobalt-chromium alloy), • Corrosion test during fatigue loading • Frictional torque test under severe condition. Implants with BIOLOX® option head showed no critical damage results in any of standard and severe test conditions, even when using a stainless steel taper as worst-case. Corrosion may be assisted by mechanical action, so called fretting corrosion. The corrosion effect can be strongly reduced with an appropriate conical fixation, by reducing both micro movement and the electrolytic fluid at the interface. Specific ceramic revision ball heads, BIOLOX® option, provide safe alternatives and allow optimization of the wear couple for hip revision.

**Abstract no.: 34311**

**INFLUENCE OF LOADING DIRECTION ON ASSESSMENT OF BIOMECHANICAL STABILITY OF DISTAL HUMERAL FRACTURE: A FINITE ELEMENT ANALYSIS**

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Double-plating techniques using two-plate (90-90° or 180-180°) pattern are generally accepted for distal humeral fractures. The latest articles have proven the parallel configuration to be superior biomechanically. A finite element analysis was done for axial, varus and bending loading on the distal part of humerus with parallel and perpendicular reconstruction plates configuration. All numerical simulations were conducted using the finite element software Abaqus 6.7 (Simulia, Dassault Systèmes) with a load of 100 N on articular surfaces with supracondylar gap of 10 mm. The displacement of bone fragments in axial loading is significantly smaller than under bending and varus loading. In the model with parallel plates configuration the displacements are also 41% smaller for axial loading, while in bending they are approximately 33%. The perpendicular plate construct has a smaller displacement in varus loading, about 4%. Consequently, the parallel configuration has greater stiffness for axial and bending loads, and the perpendicular one under varus loading. In addition to single loads, simulations were also carried out for complex loading with all three loads at the same time. In both models maximal displacements appeared in the distal articular part on the radial column. However, when all three loads are applied at the same time, there is no significant displacement difference between the models. The displacements on the articular surface in the perpendicular position are even less than 12%. Significantly smaller displacements in axial loading indicate a significantly lesser importance of this load in the overall assessment of biomechanical stability of distal humerus fractures.

**Abstract no.: 34312**

**INITIAL INDIAN CLINICAL EXPERIENCE WITH THE ORTHOGLIDE KNEE RESURFACING: A NOVEL, MINIMALLY-INVASIVE SURGICAL PROCEDURE FOR PATIENTS WITH OSTEOARTHRITIS OF THE KNEE**

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Background: This study examined early clinical results of patient treated by Orthoglide Medial Knee Implant. Methods: Eleven Knees of Orthoglide Knee Resurfacing performed between 2012 to 2013 (6 males and 5 females studied)The mean age of patient was 57.8 years (Range 50 to 70) mean follow up period was 6 months range from 3 to 12 months. The Preoperative Diagnosis was unicompartmental Osteoarthritis in 11 patients. Results: The mean improvement in Oxford Knee score was from 15 (Range from 10 to 16) to 40 (Range from 35 to 46) and mean WOMAC score improved from 30 (range 20 to 36) to 85 (Range from 80 to 92) at mean follow up of 164 days. Good to excellent results obtained in all of the knees with one case of persistent anterior knee pain managed by Vissco supplementation and Knee Brace over 3 months. Conclusions: Newer designed; minimally invasive knee resurfacing implant like Orthoglide appears to be safe and can provide effective pain relief along with rapid recovery and excellent functional result suitable for Indian lifestyle as it allows squatting & sitting cross legged.This uncemented, arthroscopic, muscle sparing day care surgery provides excellent option in our hands in surgical treatment of knee osteoarthritis patients.

**Abstract no.: 34315**

**UNUSUAL TRAUMATIC ANTERIOR DISLOCATION OF ELBOW WITH TRICEPS TENDON AVULSION RUPTURES IN A PAEDIATRIC PATIENT**

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Although elbow dislocation are well described in literature for paediatric patient, but anterior dislocation of elbow with avulsion rupture of triceps in paediatric age group is quite rare. The usual mechanism of injury is caused by a direct blow to the posterior aspect of the flexed elbow, although hyperextension of the elbow also has been reported to cause this injury. The commonest location of avulsion of triceps is the osseo-tendinous insertion, though rupture at the muclulo-tendinous junction has been reported. We report a case of anterior dislocation of left elbow with avulsion of triceps in an 8 year old female child treated with open surgical repair. 8 years old, right hand dominant child, presented with pain and swelling in the left elbow joint. She had a history of fall from bicycle over the elbow. On examination tenderness over left elbow and also presence of swelling. Movement was restricted. Radial pulse palpable and active finger movement present. Her radiograph shows anterior dislocation of left elbow with avulsion rupture of triceps. Closed reduction done for elbow dislocation and then through posterior midline approach, the area of rupture was exposed and the flake of bone with the triceps tendon was reattached with the olecranon using No.5 non-absorbable suture material. Post-operatively the arm was immobilized in a back slab at less than 90 degree flexion for three weeks after which active flexion was started. At 18months follow up, the patient had 00-130 degree of motion at the elbow, with full supination and pronation.



**Abstract no.: 34318**

**MANAGEMENT AND COMPLICATION OF DISTAL TIBIAL FRACTURES**

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Introduction: Distal tibial fractures are difficult fractures to treat. Controversies exist regarding different surgical procedures. This study presents a prospective analysis of a 30 cases of distal tibial fractures treated with different surgical techniques. Methods: Forty cases of distal tibial fractures were treated with different surgical procedures. The methods of fixation were (1) Closed reduction internal fixation with interlocking nail with or without the use of poller screws (2) Minimal Invasive Surgery with locking compression plates (3) External stabilisation system with limited internal fixation. All patients were followed up at 6 weeks, 12 weeks, 3 months & 6 months. Results: All fractures eventually united. Complications encountered were infection (5%); non union (8%) delayed union (13%) ankle stiffness (40%) and persistent swelling (21%). Secondary procedures required for following complications were debridement, secondary bone grafting, removal of prominent screws, removal of implant, and arthrodesis. Conclusion: It is difficult to achieve an anatomical reduction by closed or minimal invasive techniques. However these techniques preserve the blood supply of the fractured fragments. The objective should be to achieve fracture fixation by any technique which assists physiological process of bone healing with minimal surgical trauma. Although these fractures have an intermediate-term negative effect on ankle function and pain and on general health, few patients require secondary reconstructive procedures and symptoms tend to decrease for a long time after fracture healing.

**Abstract no.: 34320**

**OPERATIVE TREATMENT OF CLAVICULAR FRACTURE WITH RECON PLATE -A CLINICAL STUDY**

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Objective: controversy still exists regarding Clavicular fracture fixation .Studies have shown plate fixation with bone graft as a reliable management method for Clavicular fractures. The internal fixation provided is usually so secure that early mobilization can be commenced. Recent evidence suggests that specific subsets of patients may be at high risk for non-union, shoulder dysfunction, or residual pain after nonsurgical management. methods: a 30 consecutive cases aged between 24-55 years with mid shaft clavicle fracture (n=25, fresh fracture and n=5, with non-union) treated with 3.5 mm pre-contoured recon plate (with interfragmentary compression screw, for fresh fracture/bone grafting for non-union) and screw. Most of the patients were men (n=26), and RTA is the most common mode of injury (n=22): Results: Patients were evaluated by radiological and physical examination (ASES score was used for assessment).Time to union was 4.2 months (range: 2 to 8) for the fresh fracture group and 5.8 months (range : 4 to12) for the non-union fracture group. By 12 months all patient had attained a pre-injury level of activity. We had 2 cases with non union which required bone grafting in fresh fracture group and one case with implant failure in elderly woman. We had 90% cases with good to excellent results; Conclusion: Not only is the procedure technically less difficult but also the time to fracture union and return to function is reduced. The superior placement of plate is not associated with implant failure in our study. Limitations were small study group with young patients. n=number

**Abstract no.: 34321**

**UNCEMENTED BILATERAL SYNCHRONOUS TOTAL HIP REPLACEMENT- HOW SAFE IS IT?**

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Introduction: Safety and efficacy of Bilateral Synchronous Total Hip Replacement is still controversial. Advocates claim advantages of one procedure, reduced hospital stay, rehabilitation time, total cost. Other studies report increased complications with suboptimal outcomes. Aim: To determine the safety and medium term outcomes of uncemented BSTHR. Methods: retrospective review of BSTHR performed from 4/2008 to 10/2011. All patients had symptomatic Grade 4 Bilateral hip osteoarthritis, warranting THA. uncemented femoral and acetabular component. All patients received a ceramic-on-ceramic bearing joint. outcome parameters related to immediate (ASA score, operating time, blood loss, hospital stay) and mid-term results (pain score, ROM, oxford hip score, radiological findings). Results: 26 patients with BSTHR (male 18, female 8). Mean age 61 years (44-72). ASA score 2. Mean operation time 229 minutes (175-254). Average blood loss 845cc (650-950). Mean start of mobilization 4 days from day of surgery. Median hospital stay 5 days (4-9). mean follow up 19 months (13-38). No dislocations or readmissions related to the index surgery, no recorded patient deaths in the first year. All patients had improved functional outcome compared to prior to surgery. Complications included grade 4 heterotopic ossification in one patient. Significant improvement in VAS, oxford hip score. Radiological assessment confirmed all implants to be stable (Engh's criteria), with satisfactory alignment. The total hospital cost was 27% lower than bilateral staged THR. Conclusions: Uncemented BSTHR is safe, effective with no mortality, limited morbidity, improved function on medium term follow up. long term follow up with larger randomised sample required to provide further evidence concerning the health economic impact on the NHS

**Abstract no.: 34322**

**EFFICACY OF AN EXTERNAL BONE STIMULATOR IN PROMOTING LUMBAR FUSION**

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Introduction: Studies have shown that pulsed electromagnetic field electrical stimulation (PEMF) promotes bone repair. The purpose of this study was to evaluate clinical, functional, and radiographic outcomes after lumbar spine fusion using a postoperative external bone stimulator. Methods: This prospective multi-center clinical study of an external bone stimulator (Spinal-Stim®) included adults undergoing cervical fusion with  $\geq 1$  of the following risk factors for failed fusion: age  $\geq 65$  years, multi-level fusion surgery, prior failed fusion, cigarette smoking, or diabetes. Patients were fit with external bone stimulators within 90 days postoperative. Patients were followed until 9 months or until deemed clinically healed. Results: Of the 74 bone stimulator-compliant patients, 90.5% had fused by the study endpoint. Fusion was observed in 96.1% of patients aged  $\geq 65$ , 88.6% of current/former smokers, 77.8% of patients with prior failed fusion, 71.4% of patients with type-2 diabetes, and 89.8% of multi-level fusion patients. At study endpoint, mean change in pain scores exceeded the threshold for clinically meaningful improvement and most patients were experiencing little or no functional impairment or impact on quality of life. There were no adverse events. Conclusions: Despite being at increased risk for failed lumbar fusion, the patients in this study achieved high rates of fusion. There were no adverse events with the external bone stimulator and clinical outcomes indicated significant improvement in pain and quality of life measures. These results suggest that the external bone stimulator (Spinal-Stim®) is effective and safe as an adjunctive treatment in a heterogeneous patient population undergoing spinal fusion surgery.

**Abstract no.: 34326**

**MODERN CHARACTERISTICS OF INFECTIOUS COMPLICATIONS OF PATIENTS WITH POLYSYSTEM TRAUMA**

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**Problem** Last decades have been characterized by considerable growth of traumatism and mortality from the effects of polytrauma. The reason for this is the development of scientific progress, the spread of wars and local conflicts, increase of road accidents frequency. Every year about 9 million people in the world are dying from injuries and their consequences. **Materials and methods** In our research we analyzed the treatment of 386 patients with infectious complications of polytrauma, who were hospitalized in one of the metropolitan and one of the regional hospitals in the period of 2008-2010. **Results and discussion** The distribution of complications structure was as follows: 49 patients (42.98%) had 1 complication, 2 complications were diagnosed at 24 patients (21.05%), 3 complications – at 29 patients (25.44%), 4 complications – at 10 patients (8.77%), 5 complications have been observed at 1 patient (0.88%). Clinical-nosological distribution of polytrauma complications was as follows: complications of the respiratory system were marked at 140 patients (51.47%), complications of gastrointestinal tract occurred at 34 patients (12.5%), 16 patients (5.58%) had brain system associated complications, the musculoskeletal system complications observed at 33 patients (12,13%), 13 patients (4.77%) had complications connected with urogenital system and 14 patients (5.15%) had vascular complications. Complications of the respiratory system, such as nosocomial pneumonia, bronchitis, pleuritis, pleural empyema (which are found in more than half the cases) are prevailing at patients with infectious complications of polytrauma.

**Abstract no.: 34327**

**CERVICAL FUSION OUTCOMES WITH THE USE AN EXTERNAL BONE STIMULATOR**

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Introduction: Studies have shown that the use of pulsed electromagnetic field electrical stimulation (PEMF) promotes bone repair. The purpose of this study was to determine if postoperative PEMF use improves clinical and functional outcomes in cervical spine fusion. Methods: This prospective multi-center clinical study of an external bone stimulator (Cervical-Stim®) included adults undergoing cervical fusion with  $\geq 1$  of the following risk factors for failed fusion: age  $\geq 65$  years, multi-level fusion surgery, prior failed fusion, cigarette smoking, or diabetes. Patients were fit with external bone stimulators within 90 days postoperative. Patients were followed until 9 months or until deemed clinically healed. Results: Overall, 93.8% of the 81 bone stimulator-compliant patients had fused by the study endpoint. Fusion occurred in 92.9% of patients aged  $\geq 65$ , 89.4% of current/former smokers, 80.0% of prior failed fusion patients, 90.0% of patients with type 2 diabetes, and 80.0% of patients who underwent multi-level fusion. Endpoint changes in VAS pain during activity scores exceeded the threshold for clinically meaningful improvement. Most patients also had little/no functional impairment or impact on quality of life by the study endpoint. There were no adverse events. Conclusions: Patients treated with an external bone stimulator after cervical spine fusion had high fusion rates, despite their risk factors for pseudoarthrosis. Clinical outcomes also indicated significant improvement in pain and quality of life with no adverse events. The results suggest that the external bone stimulator (Cervical-Stim®) is an effective and safe adjunctive treatment in a heterogeneous patient population undergoing cervical fusion surgery.

**Abstract no.: 34328**

**CAUSES OF DEATH AT PATIENTS WITH MULTIPLE TRAUMA**

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Problem. Qualitative emergency assistance to victims of polytrauma is inadequate as evidenced by relatively high mortality. Over the past 10 years mortality from severe injuries in Ukraine increased and reached 148.5 to 100 000 persons in 2011. Annually 48000 victims die in cause of traumatic injuries. Among 100 injured persons in car accidents in Ukraine 15-17 people die, in Europe - 3-4 persons and in the USA – 1-2. Results and discussion Based on the analysis of 2600 forensic medical acts the cause of death in 322 (73%) cases was closed injury, and in 120 - open (27%) trauma (various injuries including gunshot). Thus, at patients with severe closed multiple injuries we can predict the presence of head injury at the first stage and chest trauma together with other injury at the second stage. Based on the analysis of 200 forensic-medical acts of victims with multiple trauma with damage to the chest skeleton the authors came to a conclusion that among all mortality cases in traffic accidents katatrauma significantly dominated and reached 82%. Severe multiple trauma was registered in 45% of deaths cases caused by severe multiple chest injury, 39,5 % - by brain injuries, but 50, 5% of death cases could be prevented. At traffic accidents the highest percentage of deaths occurred to pedestrians - 46.7%. In the general death structure males dominated with 78%. Age of victims varied from 20 to 80 years old.

**Abstract no.: 34329**

**PEDICLE SCREW PRECISION WITH 3-DIMENSIONAL IMAGING, NAVIGATION, AND MEASUREMENT**

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Introduction; Various navigation systems have been introduced to improve thoracolumbar pedicle screw placement. However, previous navigation studies have focused on accuracy of the screw relative to the pedicle, rather than precision of the virtual projection compared to final screw position. Methods: O-Arm/Stealth Navigation was used for pedicle screw placement in a spinal deformity practice. Initial and final O-arm scans were done, and projected pedicle probe and pedicle screw tracks and final screw positions were saved for evaluation. Results: We analyzed 152 screws from 18 patients and measured differences between virtual and actual screw tips to maximally magnify any differences in precision. The sum 3-dimensional mean differences in precision between the tip of projected tracks and final screw tip positions were 6.43 mm for the probe and 5.92 mm for the navigated screwdriver ( $p=0.23$ ), when magnified by screw tip measurement. The mean angle changes from projected tracks and final screw placements were  $4.02^\circ$  for the probe and  $3.09^\circ$  for the navigated screwdriver ( $p<0.01$ ). Conclusions: Navigation is a safe and effective technique for pedicle screw placement. We did find small differences between navigation projections and final screw positions; however, differences were magnified significantly by small angular differences in the screw attachment because we were measuring tip positions of the screws rather than in-pedicle accuracy. Even with this magnification, the navigated screwdriver showed a trend toward increased precision compared to the probe with regards to distance from final position, and was statistically closer to final screw position when looking at angular measurements.



**Abstract no.: 34332**

**METHODOLOGICAL PRINCIPLES OF POLYTRAUMA DIAGNOSIS FOR PATIENTS WITH EXOGENOUS INTOXICATIONS BACKGROUND**

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Problem. Significant place in the structure of road traffic injuries, domestic and industrial accidents take combined injuries, which particularly severe course is characterized by polysystemic damage at the background of exogenous intoxications. There were studied 457 cases of polytrauma at the background of exogenous intoxication. All calculations were performed by using computer technologies in accordance with the criteria and requirements of evidence-based medicine. Results and discussion. Inadequate implementation of therapeutic and diagnostic measures is due insufficient considering the nature and pathogenetic features of traumatic disease at a background of exogenous intoxication and related features of traumatic disease manifestations. In medical diagnostic aspect, diagnosis of victims' injuries is methodologically valid and adequate by using. The main methodological principles are: 1. Consideration of increased risk of fatal course of traumatic process affected this category during periods of unstable and stable adaptation course of traumatic disease; 2. Substantiation of expediency and the need to perform victims' surgery for this category because of increased risk of complications, pathophysiological and infectious nature; 3. Conduction of adequate intensive infusion and transfusion therapy based on the required elimination of toxic agents and products that appear as a result of such an agent on the body; 4. Conduction of intensive and adequate prevention of infectious complications. If so it should be considered a more negative prognosis of traumatic disease, which necessitates the use of today's high tech care

**Abstract no.: 34336**

**RADIOGRAPHIC DETECTION OF OSTEOPOROTIC VERTEBRAL FRACTURE WITHOUT COLLAPSE**

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**Objectives:** The semiquantitative method can be difficult to apply of osteoporotic vertebral fractures (OVFs) without radiologic collapse. On retrospective basis, we investigated the detection of OVFs without radiologic collapse using a modified Yoshida's classification which was designed by authors. **Methods:** We studied simple radiograph and MRI of 82 cases in 76 patients with confirmed osteoporosis in OVFs without radiologic collapse in thoracolumbar junction (from T11 to L2), and we measured age, gender, body mass index (BMI, kg/m<sup>2</sup>), BMD (mg/cm<sup>3</sup>), type of anterior cortical morphological change and endplate depression with a modified of Yoshida's classification, and whether of percutaneous vertebroplasty. **Results:** The mean age was 76.7 years (M/F:20/56). Mean BMI was 21.2, mean BMD was 44.1, T-score was -4.4. The most common fracture site was L1 (40.2%). As four subtype of anterior cortical morphological change, protruding type was 14 cases, indented type was 12 cases, disrupted type was 5 cases, prow type was 8 cases. As three subtype of endplate depression, upper endplate depression was 20 cases, lower endplate depression type was 12 cases, endplate slippage type was 11 cases. Among 61 patients who had surgery, vertebroplasty was 39 cases, kyphoplasty was 22 cases. **Conclusions:** All OVFs without radiologic collapse can be diagnosed with a modified Yoshida's classification which was designed by authors in simple radiograph. This study presents that to make close observation of anterior cortical morphological change and endplate depression during examination of OVFs in simple radiograph. **Keywords:** Osteoporotic vertebral fractures, Anterior cortical margin, Endplate depression, Simple radiograph

**Abstract no.: 34343**

**SHORT TERM CLINICAL OUTCOME OF POROUS TANTALUM ROD FOR THE TREATMENT OF OSTEONECROSIS OF FEMORAL HEAD**

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**Objective:**To evaluate the short term clinical outcome of a Porous Tantalum rod for the treatment of osteonecrosis of femoral head. **Methods:**From August 2008 to December 2009, 26 patients (33 hips)who had undergone core decompression in combination with porous tantalum implant were enrolled in this study. 15 hips were Steinberg stage II were, 16 hips were stage III, and 2 hips were stage IV . Irregular grains of artificial bone were planted into necrotic cavity when necessary and porous tantalum rod was implanted. Patients were instructed to be non-weight bearing for 4 weeks, and partial-weight bearing for the next 4 weeks. All patients were evaluated by X-ray and the Harris hip score. **Results:**Totally 26 patients were followed up and the duration time were 20.0- 30.5 months with an average of 24.2 months. The pre-operative score and post-operative score were  $(65.9 \pm 10.1)$  and  $(85.7 \pm 7.9)$  respectively in average, which improved 19.8 points ( $P < 0.05$ ). According to the Harris hip score system, there were “excellent” for 11 hips, “good” for 16 hips, “fair” for 4 hips, and “poor” for 2 hips. All the implantations were radiographically excellent except one hip which suffered femoral head collapse 2 years after the operation. **Conclusion:**Core decompression in combination with porous tantalum implant is fast and easy. It can avoid the pain, give structural support in necrotic regions of femoral head, and provide a new surgical choice for the patients with osteonecrosis of femoral heads (Before Steinberg stage III and stage IIIA).

**Abstract no.: 34344**

**PYOGENIC SPONDYLITIS AROUND CEMENT MASS OF VERTEBROPLASTY : A CASE REPORT**

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We report a case of pyogenic spondylitis around cement mass of vertebroplasty. A 56-year old female, with a past medical history of hyperthyroidism, congestive heart failure, complained of back pain for about 1 month. 8 years ago, She received the L5-S1 posterior decompression and fusion, L1-L3 vertebroplasty at another hospital. And she received the T12 vertebroplasty at an outside institution, 5 years ago. 3 years ago, she had pyogenic arthritis of sternoclavicular joint with mediastinal abscess, and recovered from it. Physical examination showed motor function and sensory was intact, but she had tenderness and swelling, redness on left side of back. Computed tomography revealed pyogenic spondylitis of the T12 vertebra and left psoas muscle. There was no improvement of symptom by the intravenous antibiotics for 2 months. So T12 corpectomy and autobone graft of a rib and iliac bone was performed. Results : 3 weeks after the operation, the patient can ambulate with a wheelchair. 4 weeks after the operation, she can walk with a brace. 6 weeks after the operation, she was discharged. 11 weeks after the operation, the CRP was normalized. Conclusion : We should be mindful of the possibility of the pyogenic spondylitis who had recurrent back pain after the vertebroplasty. Especially who had the past medical history of infectious disease.

**Abstract no.: 34346**

**ANALYSIS OF PERCUTANEOUS TENSION BAND WIRING AND OPEN TENSION BAND WIRING FOR PATELLAR FRACTURES**

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**AIM:** To analyse the functional outcome of patellar fractures treated with open tension band wiring and percutaneous tension band wiring. **MATERIALS AND METHODS:** We analysed the clinical and radiological results of patellar fractures treated with tension band wiring. One group consists of 7 cases of patellar fractures treated with open tension band wiring and other group consists of 7 cases of patellar fractures treated with percutaneous tension band wiring. **RESULTS:** We observed that there is no significant difference between both techniques. Operative time and blood loss in percutaneous tension band wiring is much less when compared to open tension band wiring. Percutaneous tension band wiring clinically and radiologically showed bony union. Knee score and function score is comparable with percutaneous tension band wiring. **CONCLUSION:** As the percutaneous tension band wiring is done without a wide skin incision, patient satisfaction is more. Hence we concluded percutaneous tension band wiring is an effective alternative to open tension band wiring as it is a safe and effective procedure. **LIMITATIONS:** non randomized group, less no of patients in each group

**Abstract no.: 34349**

**THE INFLUENCE OF DISTANCE ON TKA CUSTOM CUTTING GUIDES PLANNING**

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Introduction: Use of custom cutting blocks for TKA implantation is a recent innovation that is precise and reproducible. The centres providing the proof of its clinical effectiveness had the advantage of being located near the manufacturer. It would be worth evaluating its feasibility for use in isolated hospital centres, as the greater distance may cause apprehension related to longer wait times and the cancellation or postponement of the surgical procedure. Method: The Triccc-Onefit system was implemented at an island hospital located 18,000 km from the prosthesis manufacturer. As a consequence, the various procedural steps could be evaluated: image acquisition (MRI, CT scan), transmission, three-dimensional reconstruction, surgeon planning over the internet, manufacturing and shipment of the custom instrumentation. Two methods of medical image transmission were assessed: physical transfer by CD-ROM, transmission over the internet. This procedure required in-house coordination of the radiology, information technology, dispensary and logistics departments. Results and Conclusions: The average time elapsed before the sterile instrumentation was available was 5.4 weeks for the physical transfer and 5.1 weeks for the transmission over the internet, thus we determined the latter to be the best. This elapsed time is comparable to what is common within France because of the preferential use of internet transmission and involvement of multiple departments. This study demonstrates the possibility of performing long-distance surgery while maintaining the same quality of care through effective collaboration.

**Abstract no.: 34350**

**FRACTURES OF THE ACETABULUM**

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Aim: assess of the results treatment of the fractures of the acetabulum. Methods: we assess of the results treatment in 35 patients with injuries of the acetabulum in our institute during the period between 2007 to 2012. Males was 22, women - 13. The patients' age was from 23 to 54 years. In this study we used the classification of AO-Letournel. Damage Type A encountered in 14 cases, type B - 18 cases, type C - 3 cases. The 9 injuries the type A treated non operatively. Surgery were in 5 cases with fractures of posterior wall. We used Kocher Langenbech approach. The type B in 5 cases treated conservatively, because these patients refused surgery; the 10 patients with transverse fractures were treated with anterior Ilio-Inguinal approach and 2 cases - Kocher Langenbech approach. The type C treated operatively in 1 cases with extended ilio-femoral approach and 2 cases - Ilio-Inguinal approach. Results: All the patients were evaluated clinically and radiologically. During the observation the serial of radiographs was made on the 1th , 6th and 12th weeks and then it was made again on 6th, 12th months. Limp was present in 4 (28.6%) patients after conservative treatment. A bad results obtained in 3 (14,3%) cases after surgery: the aseptic necrosis of head of femur was observed in 2 patients and heterotopic ossification – 1 cases. Conclusions: the results of conservative treatment is a badly. Due to the surgical treatment was able to reduce the number of poor results

**Abstract no.: 34356**

**RESULTS OF HIP ARTHROPLASTY IN FEMORAL NECK FRACTURES AND NON-UNIONS**

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Introduction. Treatment of femoral neck fractures and consequence in femoral neck fractures is a common problem in elderly and old patients. Methods. Outcomes of 212 patients (74 men, 138 women) who underwent a hip replacement after femoral neck fractures were analyzed. 108 patients (39 men, 69 women) with femoral neck fractures and 104 patients (42 men, 62 women) with femoral neck non-unions underwent a hip replacement. Age of patients ranged from 53 to 94 y.o., an average age was 78,4 y.o. All 108 femoral neck fractures were classified as IV type fractures by Garden classification. Remoteness of trauma in fracture group ranged from 1 to 24 days. Remoteness of trauma non-union group was from 3 months to 7 years. Before arthroplasty in non-union group 41 patients underwent different methods of fixation after femoral neck fractures. Hemiarthroplasty with Austin-Moore prosthesis was performed 151 patients: 59 in fracture group, 92 in non-union group. Criteria for hemiarthroplasty were age older than 70, absence of osteoarthritis of the hip and poor general habitus of patients. Total arthroplasty were performed in 61 patients: 24 in fracture group, 37 in non-union group. Results. All patients were followed up at least 1 year after surgery. Outcomes in two groups were assessed by Harris Hip score. A mean score in fracture group was 86,2; a mean score in non-union group was 78,4. Conclusion. Hip arthroplasty in femoral neck fractures and non-unions in elderly and old patients allows early activate patients, prevents progressive deterioration of general condition of patients.



**Abstract no.: 34361**

**EFFECT OF THE MOBILITY OF TMTJ'S SURROUNDING JOINTS AFTER THE MODIFIED LAPIDUS PROCEDURE**

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Objective: To research the mobility of TMTJ's surrounding joints after the Modified Lapidus procedure. Methods: 21 patients(all women) , 29 hallux valgus feet were followed up. All the patients undertook the modified Lapidus procedure. The average time of follow-up is 14m ; 29 volunteers , 29normal feet were examined as the control group.Measuring items include top angle, anterior angle, sagittal joint mobility. Compare the top angle, anterior angle and the relating joints(TMTJ,MCNJ,NTJ)' sagittal mobility between patients and volunteers. Results: There was no significant difference between the MCNJ's and NTJ's sagittal mobility before and after Modified Lapidus Arthrodesis Conclusion: Modified Lapidus Arthrodesis could correct most abnormality of the first ray.Considering that there is no hypermobility of the TMTJ's surrounding joints after the TMTJ fusion surgery.

**Abstract no.: 34365**

**RESECTION AND RECONSTRUCTION OF EXTRAMEDULLARY TUMOURS IN THORACIC AND LUMBAR SPINE**

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**Introduction:** In this retrospective analysis the authors describe the assessment and outcomes of 58 patients who underwent posterior reconstruction following resection of extramedullary tumours in thoracic and lumbar spine during a 5-year period. **Methods:** Total 58 cases(32 males , 26 females) with intraspinal extramedullary tumours from 2005 to 2009 underwent surgical treatment via posterior or posterolateral approach . The average age of the patients was 47.8 years(range , 21—75 years) . Of all cases , there were 27 cases in the thoracic , 31 cases in the lumbar or sacral. All patients underwent a posterior laminectomy including uni- or bilateral facetectomy. Posterior reconstruction and fusion were performed in 42 cases. **Results:** The complete resection was achieved in 56 cases except 2 cases. In 58 cases, 38 cases were schwannoma, 11 cases were meningioma, 3 cases were neurofibroma, 2 cases were endothelioma, 1 case was paraganglioma, 3 cases were lipoangioma. The patients were followed up from 6 to 42 months. 42 cases underwent posterior reconstruction because of multilevel laminectomy, uni- or bilateral facetectomy or predictable instability. No fixation failure occurred. The cerebrospinal fluid leakage was found in 41 patients. The postoperative recovery of neurological function was measured with Otani scores which showed excellent in 48 patients , good in 6 and fair in 4 , resulting in 93.1%of good to excellent rate . **Conclusions:** The clinical outcome are generally good for most of extramedullary tumours are benign. Suitable spinal reconstruction in selected cases is necessary for long-term maintenance of spinal function .

**Abstract no.: 34369**

**PROXIMAL FEMORAL NAILING: EARLY FUNCTIONAL OUTCOME**

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Introduction: Proximal femoral nails (PFN) recently have been competing with the traditional hip screws for Intertrochanteric fracture of femur with or without reverse obliquity. Proximal femoral nail is gradually gaining popularity because of its mechanical strength and minimal soft tissue dissection, though it is technically demanding procedure. Methods: A prospective study is conducted between June2011 to Feb2013 on 68 cases, who had completed at least a year of follow-up. All had been treated using a proximal femoral nail for Intertrochanteric fracture of femur with or without reverse obliquity. A radiological assessment was made with serial X-rays. Results: The mean age of cases is 55years, and the average duration of procedure is 60-120minutes with less blood loss. Few early and late complications were noted. Conclusion: Proximal femoral nail is a suitable implant for Intertrochanteric fracture of femur with or without reverse obliquity needing open reduction and internal fixation. Excellent to good results are observed in 70% out of total cases based on Harris Hip Score.

**Abstract no.: 34371**

**COMPLICATIONS FOLLOWING ROTATIONAL ACETABULAR  
OSTEOTOMY: GREATER TROCHANTERIC PAIN AND NON-UNION OF  
THE PUBIC OSTEOTOMY SITE**

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**Purpose:** To investigate the short-term complications following rotational acetabular osteotomies (RAO), particularly greater trochanteric pain and non-union of the pubic osteotomy site. **Patients and methods:** Between 2008 and 2012, we performed RAO in 35 symptomatic dysplastic hips. Six men and 29 women with a mean age of 42.4 years were operated on. All 35 hips were followed up for at least 1 year. The operation was initiated by detaching of the greater trochanter. All rotational acetabular osteotomies were performed using a curved 50-mm radius chisel. The osteotomy of the pubic bone was visualized. Fixation of the acetabular fragment and greater trochanter were performed using absorbable screws. Three weeks postoperatively, partial weight bearing was permitted with the assistance of two crutches. A clinical evaluation using the JOA scoring system and a radiologic evaluation were performed. **Results:** The average preoperative JOA score was 69 points. This score improved to 89 points at the time of final follow up, except in 1 case. There was one case of infection in the osteotomy region of the greater trochanter, and 4 cases of pubic non-union, 2 of which occurred fatigue fractures of inferior rim of pubic bone. There were no non-unions of the greater trochanter. Most patients had unexpected pain around the osteotomized greater trochanter, which improved within 1 year postoperatively. **Conclusion:** We noted an unexpectedly greater level of trochanteric pain after RAO using absorbable screws. And careful attention when performing osteotomy of the pubic bone is required.

**Abstract no.: 34374**

**MODIFIED METAPHYSEAL-LOADING ANTEROLATERALLY-FLARED ANATOMIC FEMORAL STEM: FIVE- TO NINE-YEAR PROSPECTIVE FOLLOW-UP EVALUATION AND RESULTS OF THREE-DIMENSIONAL FINITE ELEMENT ANALYSIS**

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We have designed a proximal-fitting, anterolaterally-flared, arc-deposit hydroxyapatite-coated anatomical femoral stem (FMS-anatomic stem; KYOCERA Medical, Osaka, Japan) for cementless total hip arthroplasty (THA) for Japanese patients with dysplastic hip osteoarthritis, using a nonlinear three-dimensional finite element analysis simulating loading conditions. The Anatomic Fit stem was modified in the region of the arc-sprayed surface, to allow more proximal appearance of spot welds. The aim of the present study was to analyze the clinical and radiographic outcomes of patients who underwent THA using this stem. We reviewed consecutive 73 patients (79 hips; 13 men 16 hips; 60 women 63 hips; age at surgery, 57.6 years, range, 35-78) who underwent cementless THA using the Anatomic Fit stem, at a follow-up period of 7.1 years (range, 5.1-9.4). Harris Hip score improved from 40.7±17.1 before surgery to 91.0±5.2 points at follow-up. The 7.1-year stem survival rate was 100%. Radiographs at follow-up confirmed the stability of the femoral stems within the femoral canal in all cases, with sufficient bone ingrowth. None of the patients had subsidence of the stem exceeding 2.0 mm within the femoral canal or changes in varus or valgus position of more than 2.0°. The Anatomic Fit stem provided excellent results. The nonlinear three-dimensional finite element analysis demonstrated that the stem-bone relative motion was 10 µm at the proximal end of the stem and proximal load transfer. Our analysis confirmed reduced radiolucency around the stem, minimal subsidence, appropriate stress shielding, and promising medium-term stability within the femoral canal.

**Abstract no.: 34376**

**EVALUATION OF SCREW PLACEMENTS FOR C1-C2 FIXATION USING MULTIDETECTOR CT SCANS**

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**Purpose:**To evaluate placement of screws for C1-C2 fixation using multidetector CT scans. **Method:**Four patients (three men and a woman), who underwent C1-2 fixation for subluxation, odontoid fracture, rheumatoid arthritis and retro-odontoid pseudotumour, were included in this study. Mean age was 72.5 years. Using postoperative multidetector CT scans, insertion point and insertion angle for placement of screws were evaluated and compared with preoperative surgical plan. **Result:** A total of 16 screws including eight lateral mass screws for C1, seven C2 pedicle screws and one laminar screw for C2 were used. Most insertion points were accurate. Mean error of insertion angles was 6.7° (range 0.5 to 15°). Only one pedicle breach by C2 pedicle screw were found (6.3%). There was no patient with neurological deterioration or vertebral artery injury. **Conclusion:** Preoperative plan using multidetector CT scans allowed us accuracy of insertion points, but insertion angles varied widely by free hand technique. To obtain more accurate screw placements, not only preoperative multidetector CT scans but also intraoperative CT scans or navigation may be required.

**Abstract no.: 34379**

**CLINICAL AND RADIOLOGICAL OUTCOME OF THE ACETABULAR FRACTURES: A REVIEW OF 85 PATIENTS TREATED AT A SINGLE INSTITUTION**

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In this retrospective study, we analyzed the clinical/radiographic outcome in 85 patients with acetabular fractures, according to fracture type and treatment modality. The mean age of subjects (69 men, 16 women) at trauma was 48 years (range, 18-80). Judet-Letournel classification was used for assessment of type of fracture. Matta's rating regimen was used for functional and radiographic follow-up assessment. The mean follow-up period was 7.5 years (range, 2-17). Perioperative and late complications were studied. Patients treated conservatively attained excellent/good (n=16) or fair (n=1) clinical results and all achieved excellent/good radiographic outcome. Open reduction/fixation was conducted in 68 patients with a mean operation time of 5.0 hours and blood loss of 1,114 grams. Patients with posterior wall fractures (n=18) attained excellent/good clinical/radiographic outcomes in 15 and poor in 3. Twelve of 15 patients with both column fracture and 10 with other associated fracture types attained excellent/good clinical results. Five of 15 patients with both column fracture achieved fair/poor radiographic results. None developed deep vein thrombosis, nerve palsy, or bone/soft tissue infections. Late postoperative complications were 2 femoral head avascular necrosis and 3 hip joint osteoarthritis. Review of 68 surgically-treated patients with acetabular fractures showed that 61 (90%) attained excellent/good and 7 (10%) fair/poor clinical outcomes, and that 60 (88%) attained excellent/good and 8 (12%) fair/poor postoperative radiographic outcome. Five of the latter group required THA during follow-up. There was significant relationship between poor clinical and poor radiographic outcome.

**Abstract no.: 34380**

**RECURRENT INFECTION AFTER TWO-STAGE EXCHANGE ARTHROPLASTY FOR INFECTED TOTAL KNEE ARTHROPLASTY FOLLOWING TEN OPERATIONS: A CASE REPORT**

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Infection after total knee arthroplasty (TKA) is an infrequent but serious complication that is difficult to treat. The reported incidence of infection varies between 0.5% and 12%. Infection control after TKA is not always possible, and the resolution of infection may require an above-the-knee amputation (AKA). In this article, we present a refractory case, wherein the patient underwent 10 operations for recurrent infection after revision TKA. A 66-year-old woman was referred for treatment of a recurrent infection following revision TKA. She had her primary TKA at the age of 42 years for treatment of rheumatoid arthritis. Postoperatively, she suffered no difficulties walking and performing daily activities. However, 10 years after the operation, she experienced a sudden onset of late infection after TKA. *Bacteroides fragilis* was isolated from the culture. The patient underwent 3 open debridements with retention of the prosthesis, but the infection was not successfully controlled. She was then treated with prosthesis removal and long-term antibiotics. Eight months following prosthesis removal, she underwent revision TKA and patella tendon reconstruction with contralateral Achilles' tendon autograft. Six months after the revision surgery, the infection reoccurred. Treatment of open debridement and drainage for recurrent infection was performed 5 times over the course of 5 years. A skin graft was performed because of soft tissue damage caused by repeated surgical exposure. Finally, 23 years after the primary TKA, the patient underwent an AKA owing to uncontrollable infection.



**Abstract no.: 34381**

**CLINICAL AND RADIOLOGICAL OUTCOME OF THE PELVIC RING FRACTURES: A RETROSPECTIVE REVIEW OF 224 PATIENTS TREATED AT A SINGLE INSTITUTION**

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Pelvic ring fracture presents with a wide spectrum of clinical status and fracture type that requires multimodal treatment strategy. We report our experience in treatment of 224 pelvic ring fractures in terms of clinical and radiological findings, mode of treatment, surgical data, and functional outcome at final follow-up. The study subjects were 140 men and 84 women (mean age, 58 years, range, 8-94). Surgery was conducted in 63 patients while 161 were treated conservatively. The average follow-up period was 7.1 years (range, 1-15). AO-Orthopaedic Trauma Association classification of fracture type, Injury Severity score rating, Rommens and Hessmann's ambulatory and pain assessment, and radiographic studies were conducted. Conservative treatment was provided in 161 (73%) patients with Type A fractures, including simple bed rest with external fixation, skeletal traction, and/or pelvic sling. Of these, 148 patients achieved excellent/good results, but the remaining 13 cases complained of severe pain at the sacroiliac joints caused by malunion or fibrous union of the joint. All 63 (27%) patients who were treated surgically, using most frequently a combination of anterior extraperitoneal and Pfannenstiel approaches, showed excellent/good clinical and radiographic results. Treatment of unstable pelvic ring fracture should be urgent and based on biomechanical and anatomic reconstructive strategy, paying utmost care to associated injuries. A combination of open stabilization of posterior sacroiliac area and anterior fixation of pubic rami and symphysis pubis is recommended for unstable anteroposterior compression, lateral compression, vertical instability, and unilateral or bilateral posterior injuries to the pelvic ring.

**Abstract no.: 34382**

**PSI TOTAL KNEE REPLACEMENT: IMPROVES THEATRE EFFICIENCY**

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Patient Specific Instrumentation (PSI) aims to improve patient outcomes by providing a customized jig. They also claim to improve theatre efficiency by reducing operative inventory and time. However, current literature questions the practical significance of these. Our study evaluates the theatre efficiency using PSI knee technique. In our series of 54 consecutive TKRs performed using PSI technique the number of instrument trays has been reduced to 4 trays from 7 or 8 with conventional technique. This reduced the theatre set up time and also sterilization costs. When the senior author did a feasibility study on PSI technique, the mean skin-to-skin operative time was 78.3 minutes for 8 cases. In the second phase, the mean skin-to-skin operative time was reduced to 56.7 minutes for 6 cases. Stream lining the operative technique has allowed us to reduce the mean skin-to-skin operative time to 40.65 minutes for the subsequent 40 cases. In that streamlined phase of 40 cases, the mean skin-to-skin operative time for the trainee was 51 minutes and 37.2 minutes for the senior surgeon. The mean skin to resection time (completion of the distal femoral cut, 4 in 1 femur cut and proximal tibial cut) was 13.86 minutes, which probably is the main time advantage of the PSI knee compared to traditional techniques. This has allowed us to accommodate up to 6 TKRs in a full-day's list compared to 3 or 4 TKRs which were done historically at our hospital.

**Abstract no.: 34383**

**DISLOCATED INTRA-ARTICULAR FEMORAL HEAD FRACTURE ASSOCIATED WITH FRACTURE-DISLOCATION OF THE HIP AND ACETABULUM: A RETROSPECTIVE REVIEW OF 12 CASES**

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This report describes case series of the femoral head fractures associated with fracture-dislocation of the hip joint to evaluate the mid- and long-term outcomes, and highlight the surgical technique of fixation of the femoral head from the posterior trochanteric flip osteotomy approach. Twelve patients (6 men and 6 women) with dislocated femoral head fractures (mean age at the time of injury: 56 years, range, 23-80) were followed-up for mean period of 9.7 years (range, 5-20). All dislocations were reduced within less than 6 hours after the injury. The type of femoral head fracture was classified according to the Pipkin classification on radiographs and CT. Five patients were classified as type I, 2 as type II, 2 as type III, and 3 as type IV. The clinical and radiological outcomes were assessed by Thompson and Epstein's regimen. Excluding 2 patients with Pipkin type III, the outcome of 9 patients was excellent/good, and poor in 1. The latter patient sustained Pipkin type IV, and developed osteoarthritis 1 year after surgery, and consequently required total hip arthroplasty. We conclude that small fragment of the femoral head less than 1 cm can be removed, while larger fragments should be fixed by bioabsorbable screws or pins in all types of femoral head fractures. In Pipkin type IV fractures, surgeons should always take anatomical reduction of the acetabulum into consideration during surgery.

**Abstract no.: 34384**

**MINIMALLY INVASIVE PLATE OSTEOSYNTHESIS(MIPO) TECHNIQUES FOR SEGMENTAL TIBIAL FRACTURES**

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Background: To evaluate the effectiveness of minimally invasive plate osteosynthesis (MIPO) in segmental tibial fracture. Material and Methods: Among the patient who were treated from June 2003 to February 2010, 23 cases with segmental tibial fracture were treated with MIPO technique. 9 cases were proximal tibia fracture, 5 cases were tibia shaft fracture and other 9 cases were distal tibia fracture, and among them 5 cases were open fracture. We reviewed the results of time to union and complications including non-union, malalignment, infection and skin necrosis. Clinical assessment was evaluated according to Lysholme knee score for proximal tibia fracture and Olerud Molander ankle score for distal tibia fracture. Results: All fractures were healed with an average time of 11.9 weeks. No patient had an angular deformity more than 5 degrees, or shortening of more than 1cm. Average visual analogue scale (VAS) score was 1 point. All patients had an excellent or satisfactory clinical function, the average Lysholme knee score was 89.0 point and Olerud and Molander ankle score was 93.9 point. There was one case of superficial infection, but, no patient experienced deep infection. Conclusion: Although MIPO technique is technically more demanding than the traditional open reduction and internal fixation or IM nailing, MIPO technique was found to be an effective method of treating segmental tibia fracture, because there are few limitation on location and it induces osteosynthesis with reduced of the rates of infection and non-union.

**Abstract no.: 34389**

**A NEW SOLUTION FOR CEMENTLESS STEM FIXATION IN TOTAL HIP ARTHROPLASTY: A RADIOSTEREOMETRIC ANALYSIS WITH FIVE – YEAR FOLLOW – UP**

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The Scyon Orthopaedics AG has developed a novel concept of cementless stem fixation that reduces an influence of stress shielding on stability of the THA. The Scyon THR stem provides permanent anchorage through bony ingrowths from the medial cortex without coupling to the lateral cortex thus diminishes stress shielding. Stability is implemented by locking mono-cortical screws tapped through the medial cortex and locked in the stem. The aim of this study is to evaluate the stability of the Scyon THR. **METHODS:** Eight patients were selected in accordance with inclusion and exclusion criteria. We used standard protocol questionnaires. During implantation of the THA insertions of Tantalum beads into specific areas of pelvic bones and femur were performed for the purpose of radiostereometric analysis. All patients were invited for follow-up examinations at 6 weeks, 6 months, 1, 2 and 5 years after surgery. At every follow-up examination patients underwent to RSA as well as standard x-ray evaluation. **RESULTS:** The 5 year follow-up results have proved an excellent functional recovery and radiographic noticeable bony ingrowths (osteointegration) only from the medial cortex. After 5 year follow-up with RSA we found no significant stem subsidence. **CONCLUSION:** In conclusion, we believe that this new implant may decrease aseptic loosening rate of the THA by a more reliable and consistent fixation of the femoral stem, which highly diminishes stress shielding of the proximal femur

**Abstract no.: 34391**

**A CASE OF POST OPERATIVE SPONDYLODISCITIS**

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Spinal infections account for 2- 4% of all osteomyelitis .Though it is commonly occurred through haematogenous route, post-operative pyogenic spondylodiscitis is not a rare entity. A 60 year old female had fever, severe pain and stiffness of her back since she had undergone a laminectomy and decompression of L4L5 and L5S1 in August 2012. She had hypertension, diabetes mellitus and ischemic heart disease. Her total white cell count, ESR and CRP were significantly elevated. Contrast MRI confirmed spondylodiscitis of L4L5S1. Anterior debridement, decompression and fusion were done through retroperitoneal approach. Tissue culture suggests multi drug resistant Acenatobactor spp. IV Tigecycline and Colistin were given according to sensitivity report. Patient's back pain and stiffness were relieved and blood parameters have come down to almost normal level.

**Abstract no.: 34393**

**LIGAMENT RUPTURE DURING REPLACING AN OCHRONOTIC KNEE: A CASE REPORT**

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Introduction; Ochronotic arthropathy mainly involves spine and large joints. Along with blackening of the joint it results a rapidly progressive joint degeneration, thus becoming symptomatic by fourth to fifth decade, mostly involving the knee. As the role of medical treatment and joint conservation surgeries are limited to early stages, joint replacement is the only effective option in 1/3rd patients. In this present report we present a unique complication i.e rupture of ligamentum patellae during total knee replacement of an ochronotic joint. Case report; A 51 years old male presented with bilateral severe tricompartmental osteoarthritis with varus deformities and restriction. So he was planned for bilateral total knee replacement (TKR). Intraoperatively both knees showed blackening of the joint cartilage, so a retrospective diagnosis of ochronosis was made. In right side the heavily pigmented ligamentum patella was friable and ruptured with minimal retraction. After replacement the ligament was repaired with nonabsorbable suture passing through drill hole in tibial tubercle and augmented with relaxing suture. Postoperatively right knee was supported with knee brace. Ambulation was started by 4 weeks and exercises for range of movement of right knee by 6 weeks. At 28 months follow up patient was walking pain free with acceptable position of implants in X-ray. To our knowledge this is the first report of rupture of patellar ligament during TKR of an ochronotic joint. With this experience we propose greater care in handling the tendon during TKR in order to avert the complication and preoperative preparation to manage it.

**Abstract no.: 34395**

**STUDY OF SOFT TISSUE SARCOMAS( 250 CASES)**

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SOFT TISSUE SARCOMAS OF EXTEREMITIES (A STUDY OF 250 CASES) SOFT TISSUE SARCOMA OF EXTREMETIES ARE COMPARATIVELY RARE , MORE RARE THAN PRIMARY MALIGNANT BONE TUMOURS. THE INCIDENCE IS ONLY 1% OF ALL MALIGNANCIES IN CHILDREN THE INCIDENCE IS 3TO 4%THE MALIGNANT FIBROUS HITIOCYTOMA IS MAXIMUM FOLLOWED BY FIROSARCOMA& OTHERS. IN CHILDERN PNET &EWING SARCOMA MOST COMMON .THESE TUMOUR CAN BE TREATED BY LIMB SAVING SURGERY BY LOCAL WIDE RESECTION & IN ADVNCE CASES AMPUTATION IS THE LINE OF TREATMENT.PROGNOSIS IS BETTER THAN BONY TUMOURS & FUNCTION IS ALSO BETTER IN LSS. AGE INCIDENCE IS 8 TO 80 YEARS . DURATION VARY FROM 12 WKS TO 34 WKS. LOCAL RECUURENCE AFTER LWR DOES NOT WARRANT AMPUTATION , IN SELECTED CASES AGAIN CAN BE TREATED BY LWR.5 YR SURVIVAL RATE IS 55 % . & IS POSSIBLE BECAUSE OF BETTER DIAGNOSTIC & TREATMENT MODALITIES LIKE CCT, RADIO THERAPY & BETTER SURGICAL TECHNIQUES. THE AIM OF THE STUDY IS TO SEE PATTERN OF TUMOURS,PROGNOSIS,HOW TO DIAGNOSE EARILY BY VARIOS DIAGNOSTIC MODALITIES & CLINICAL SUSPICION SPECIALLY IN PROXIMAL EXTEREMITIES WHERE PAINLESS MASS IS DETECTED LATE. METASTASIS USUALLY GOES BY BLOOD & LYMPHATIC TO LUNGS. IN 5%METASTASIS IS SEEN IN 1ST YEAR DESPITE BEST POSSIBLE TRAETMENT, SPECIALLY IN DEP & LARGE SARCOMAS. IN FEW CASES FROM BEGINING TUMOUR IS SEN BOTH IN BONE & SOFT TISSUE MAKING TREATMENT DIFFICULT, IN SMALL TUMOURS THE EXCISION BIOPSY CAN BE DIAGNOSTIC & THERAPUTIC. WRONG INCISIONAL BIOPSY MAKE TUMOUR LIMB SAVING SURGERY DIFFICULT SPECIALLY IN SOFT TISSUE SARCOMA



**Abstract no.: 34400**

**NEONATAL RADIAL NERVE PALSY ASSOCIATED WITH HUMERUS FRACTURE: IS THE FRACTURE TO BE BLAMED?**

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Introduction; Isolated radial nerve palsy is a rare cause of monoplegia in neonates. Neonatal radial nerve palsy, associated with humerus fracture is rarer. Presence of active movements of elbow and shoulder along with subcutaneous fat necrosis in the arm distinguishes radial nerve palsy from neonatal brachial plexus palsy. The diagnosis is important as, unlike the brachial plexus palsy, its recovery is rapid and complete. Case report; A female baby was born at 39 weeks, to a 28 years old mother with gestational diabetes. The second stage of labor was prolonged due to shoulder dystocia. Examination showed swelling and tenderness of left arm. Radiograph showed fracture left humerus which was treated with splintage. On eighth day abnormal flexion of left wrist and fingers was noted. However active shoulder abduction, elbow flexion and finger flexion were present. So a diagnosis of isolated neonatal radial nerve palsy was made and treated with static wrist dorsiflexion splint and passive stretching. Recovery was first noted at 20th day and by 6th week it was completely recovered. To our knowledge this is the second case of neonatal radial nerve palsy with humerus fracture to be reported.

**Abstract no.: 34404**

**COMPARITIVE STUDY BETWEEN EFFECTS OF ARTHROSCOPIC JOINT LAVAGE ALONG WITH CORTICOSTEROID AND INTRA-ARTICULAR CORTICOSTEROID INJECTION ALONE IN PATIENTS WITH PAIN IN OSTEOARTHRITIS OF THE KNEE**

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Introduction: Degenerative Osteoarthritis of the knee is one of the most common chronic diseases and a major cause of pain and disability, particularly among the elderly. Various conservative modalities like rest, physiotherapy and NSAIDS are mainstay of conservative management. In this study we would like to compare the effects of intra articular steroid infiltration along with arthroscopic lavage and intra articular steroid alone in relief of pain in a degenerated knee. Methods: Prospective study includes 60 patients with osteoarthritis knee with failed conservative treatment for over 6 months. 28 patients who did not agree for knee arthroplasty were offered arthroscopic lavage along with steroid and 32 patients who could not afford for arthroscopic lavage were offered intra-articular corticosteroid injection alone. Outcome of pain was evaluated at baseline 1 week, 1 month, 3 months and 6 months using 100-mm visual analog scale and Lequesne's functional index measures. Results: Patients who had undergone joint lavage with steroid had significantly improved VAS scores at 6 months. In contrast, corticosteroid injection was associated with a decrease in pain only at week 1 to 3 months. After 3 months, Lequesne's functional index was not significantly improved regardless of the assigned treatment in both the groups. Conclusion: We conclude that arthroscopic lavage along with steroid showed better results and pain relief for longer duration than intra-articular steroid injection alone.

**Abstract no.: 34418**

**FOLLOW MIDDLE PATH REGIME FOR THR IN TUBECULOSIS HIP**

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THERE IS NEW TREND COMING FOR DOING THR EVEN IN THE PRESENCE OF ACTIVE INFECTION IN HIP JOINT IN THE NAME OF DECREASING MORBIDITY & BRINGING THE PATIENT TO ACTIVE LIFE. ONE SHOULD NOT FORGET THE PAIN MAY TAKE FROM 3 TO 9 MONTH FOR SUBSIDING. IT IS WORTH WHILE WAITING FOR ACTIVE DISEASE TO SUBSIDE BEFORE SUBJECTING THE PATIENT TO SUCH MAJOR & RISKY SURGERY BECAUSE TILL NOW THE FOLLOW UP OF THESE PATIENT IS TOO SHORT TO MAKE A DEFINITE OPINION. WORD CURE SHOULD BE AVOIDED AS WE ALL KNOW IN TUBECULOSIS. IT IS ALSO A WELL KNOWN FACT THAT EVEN A BAD LOOKING XRAY, PATIENT MAY STILL HAVE REASONABLY GOOD RANGE OF MOVEMENTS & FUNCTION FOR DAY TO DAY ACTIVITY. THIS IS A STUDY OF 10 PATIENT IN WHOME THE JOINT WAS MECHANICALLY UNSOUND AFTER THE INFECTION SUBSIDED AFTER FULL COURSE OF ANTI TB DRUGS FOR ONE YEAR DURATION. NONE OF THESE PATIENT HAD POST OPERATIVE COMPLICATION & WERE SATISFIED WITH THE RESULTS

**Abstract no.: 34419**

**BIOLOGICAL MODALITIES FOR TREATMENT OF ACUTE SCI: A PILOT STUDY AND REVIEW OF LITERATURE**

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Introduction: Paraplegia due to traumatic spinal cord injuries is one of the more devastating effects of dorso-lumbar vertebral fractures. Treatment modalities for these fractures, such as instrumented decompression, have no effect on the neurological recovery. Recently, autologous bone marrow stem cells have been used in clinical trials treating spinal cord injuries with varying success. Methods: Upto 100 ml of bone marrow was aspirated from bilateral iliac crests, mixed with sodium heparin (1500 units for 10ml aspirate) and transported to the laboratory on ice packs. Using sterile tubes, the bone marrow aspirate was centrifuged at 1500 rpm for 20 minutes and the buffy coat layer was transferred into a sterile tube. After the surgical decompression and stabilization, the buffy coat isolate was injected into the dural sleeve around site of the injury by 21 gauge needle. We used buffy coat (platelet rich plasma) as it has been demonstrated in vitro to be a good scaffold for bone marrow stem cells delivery and survival. Results: The evaluation at 6 weeks showed some improvement in the ASIA scores of 2 patients but no improvements in their Frankel Grade. Rest of the 8 patients showed no improvements in their ASIA scores or their Frankel Grades. Conclusions: Although this modality of treatment is safe for the patient, it provides no additional benefit in terms of improvement of quality of life. The use of platelet rich plasma as a scaffold for bone marrow stem cell transplant does not appear to produce optimum results in vivo.

**Abstract no.: 34423**

**STUDY OF ANATOMICAL HELICAL GREATER TROCHANTER NAIL IN TREATMENT OF ADULT DIPHYSEAL FEMORAL FRACTURES**

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Introduction : Interlocking nail is the standard treatment for fracture shaft of femur. However uniplaner nails through piriformis entry are associated with complications like avulsion of piriformis tendon, damage to superior gluteal nerve and branches of medial circumflex femoral artery, increased risk of iatrogenic neck fracture and difficulty in finding of entry site. Also avascular necrosis of head and septic arthritis of hip has been reported after piriformis entry nail. Entry through greater trochanter is an alternative. The results of anatomical helical nail entering through tip of greater trochanter were studied in 30 patients in our study. Methods: 30 patients with fracture shaft of femur were treated with anatomical helical nail. The patients were assessed for operative time, blood loss, union time and complication rates. Functional outcome was based on modified Harris hip score. Also surgeons were asked about the experience of ease of finding the entry site. Result: 29 of thirty fractures united. None of the cases got infected. Average operative time was 66 min and average union time was 91 days. There was single case of non-union, one case of malunion and two cases of iatrogenic intertrochantric fracture. Conclusion: The greater trochanter entry portal coupled with an appropriately designed nail represents a rational alternative for antegrade femoral nailing with the benefit of low complication rate, ease of finding entry site and decreased operative time in patients.

**Abstract no.: 34425**

**TUBERCULOSIS PRESENTING AS CYSTIC LESIONS**

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Introduction: Tuberculosis presenting as cystic lesions is rare and is generally limited to peripheral skeleton. These are generally symmetrical and less sclerotic compared to adults. Here we present a case series of five patients presented as cystic tubercular lesion. Method: Most patients presented with localized swelling and pain. X-rays revealed classical cystic lesions. Two children had multiple cystic lesions and three had isolated lesions. Diagnosis was confirmed by FNAC or histopathological examination. Once the diagnosis was confirmed on biopsy/FNAC the patient was put on anti tubercular treatment for six to nine months depending on clinical response. Result: . Response to therapy is excellent and the overall prognosis is good. Curettage of affected bone in selected cases was done to promote early healing.

**Abstract no.: 34426**

**TUBERCULOSIS PATELLA MIMICKING CHRONIC KNEE SYNOVITIS**

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Introduction: Tuberculosis of patella is a rare occurrence with incidence of less than 0.2% in literature. Because of its rarity the diagnosis is usually missed. Here we present a case of tuberculosis patella, being treated as chronic synovitis elsewhere, presented to us with chronic knee swelling and a draining sinus. Material: Standard X-rays revealed a lytic area with surrounding coke like sequestrum in patella. MRI was suggestive of osteomyelitis of patella with soft tissue edema. Diagnosis was confirmed on biopsy. Patient was managed by curettage and excision of sinus tract along with anti-tubercular treatment. Result: Patient responded well to anti tubercular therapy and gained excellent functional range of movement. Conclusion: the rare locations of tuberculosis like patella should be borne in mind while dealing with chronic lesions of the knee.

**Abstract no.: 34429**

**PRIMARY HYPERPARATHYROIDISM PRESENTING WITH PATHOLOGICAL FRACTURE AND NORMOCALCAEMIA: A RARE CASE REPORT**

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Primary hyperparathyroidism revealed by a pathological fracture is very uncommon. We report a 34 year old female patient with pathological fracture of left femur. The diagnosis of primary hyperparathyroidism was made based on radiological bone changes and elevated parathyroid hormone. However this patient had normocalcaemia. Ultrasound and CT scan localized the parathyroid adenoma which was excised and surgical stabilization of the pathological fracture was done. Keywords: primary hyperparathyroidism; parathyroid adenoma; pathological fracture; normocalcaemia.



**Abstract no.: 34431**

**A CASE REPORT OF MULTIFOCAL ALVEOLAR SOFT PART SARCOMA OF THIGH AND SPINE**

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Alveolar soft-part sarcoma (ASPS) is one of the rarest sarcomas with uncertain histogenesis seen most often in adolescents and young adults. ASPS often presents in the extremities, most commonly the thigh as a slow-growing painless mass. We report a 30 year old male presented with the complaint of low back-ache and paraesthesias over L4 dermatome which on further evaluation showed markedly vascular tumour of the right thigh and expansile lytic lesion of L3 vertebral body. Tumour was excised in Toto and on histopathology confirmed as ASPS. Spine was also stabilized after curettage of the tumour mass. The patient has remained disease free for over one year.

**Abstract no.: 34435**

**FUNCTIONAL OUTCOME FOLLOWING DISTAL HUMERAL FRACTURE  
FIXATION WITH AN EXTENSOR MECHANISM-ON APPROACH**

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In extra-articular (OTA type A) and simple articular distal humeral fractures with simple or multifragmentary metaphyseal involvement (OTA type C1 and C2), extensile approaches that disrupt the extensor mechanism may not be necessary. The purpose of this study is to show functional outcomes following distal humeral fracture fixation with an Extensor Mechanism-On Approach. Methods: Twenty distal humeral fractures were treated with open reduction and internal fixation (ORIF) via an extensor mechanism-on surgical approach. DASH (Disabilities of the Arm, Shoulder and Hand), scores were followed to assess the results. Results: All patients were available for follow up. All twenty fractures healed primarily. The mean elbow range of motion was 120°. The mean DASH score was 16 points, indicating excellent scores. Conclusions: Open treatment of distal humeral fractures with an extensor mechanism-on approach results in excellent healing, a mean elbow flexion-extension arc exceeding 100°, and maintenance of excellent elbow triceps strength compared with that of the contra lateral normal elbow.

**Abstract no.: 34442**

**UNIPEDICULAR PERCUTANEOUS KYPHOPLASTY FOR THE TREATMENT OF VERTEBRAL FRAGILITY FRACTURES**

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[Abstract] Objective To evaluate the clinical outcomes and efficiency of the Unipedicular Percutaneous Kyphoplasty in vertebral fragility fractures. Methods A prospective observational study was performed. Twenty patients with a total of 34 vertebral compression fractures underwent kyphoplasty utilizing a unilateral pedicular /unipedicular approach. The vertebral bodies were measured at the anterior margins. And visual analog scale(VAS)、Cobb's angle were compared preoperatively, at 2 day and end of follow-up postoperatively. Complications were recorded. Height restoration, pain relief and Cobb's angle change were assessed pre and post-operatively. Results Twenty patients underwent Unipedicular Percutaneous Kyphoplasty for a total of 34 levels. The mean duration of follow-up was 15.5 months The mean pre-operative anterior vertebral height was(17.68±3.33)mm and postoperative was(30.94±3.22)mm. the anterior vertebral height increased significantly from Preoperatively (P < 0.05).The mean VAS was (7.15±1.17) , (2.20±0.53) and (2.10±0.45) preoperatively, The mean VAS decreased from Preoperatively , to postoperatively and had statistical significance between preoperation and 2 day、end of follow-up postoperation(P < 0.05). The Cobb's angle decreased from Preoperatively(21.53。±5.22。 ) to postoperatively (7.35。±2.16。 ) ,had statistical significance between preoperation and postoperation(P < 0.05). ConclusionsUnipedicular Percutaneous Kyphoplasty is both a safe and efficacious alternative to the traditional bipedicular kyphoplasty for the treatment of painful vertebral fragility fractures.

**Abstract no.: 34444**

**DOUBLE TALWALKAR SQUARE NAILS FOR CLOSED INTRAMEDULLARY FIXATION OF FOREARM FRACTURES IN ADULTS: A RETROSPECTIVE STUDY**

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Introduction: Forearm bone fractures in adults are not uncommon. Though studies have been done on various modalities to treat the condition, there is a lacuna in the literature regarding the use of multiple Talwalkar square nails. The purpose of this study was to explore the advantages of closed intramedullary nailing using double Talwalkar square nails in adult forearm fractures. The rationale behind using double square nails is jamming the nails in the waist of the medullary cavity to obtain greater rotational stability and hence early mobilization. Materials and methods: 46 adults with forearm fractures (radius and ulna or isolated fracture of the single bone) were retrospectively evaluated. 34 males and 12 females who met the study criteria underwent closed intramedullary nailing using double Talwalkar square nails in each bone from January 2007 to December 2011. The mean follow-up period was ten months during which healing and complication rates were assessed. Results: The average time to union was 12 weeks with cast support for a mean of 5 weeks. Sound union was achieved in 100 percent of the cases. Using the Grace and Eversmann rating system, 33 patients had excellent, 9 had good and 4 had an acceptable result. There were 3 cases of superficial infection, 2 cases of olecranon bursitis and 3 subjects had migration of the nail. Conclusion: Our experience indicates that use of closed double Talwalkar square nailing is a low-risk method, which leads to rigid internal fixation with rotational stability and improved union.

**Abstract no.: 34451**

**COMPARISON OF ALIGNMENT UNICOMPARTMENTAL KNEE REPLACEMENT USING CONVENTIONAL NON-NAVIGATION TECHNIQUE WITH COMPUTER-ASSISTED NAVIGATION TECHNIQUE**

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**Purpose:** The aim of our study was to compare the radiographic alignment unicompartamental knee replacement with using conventional non-navigation technique and computer-assisted navigation technique. **Method:** In our department we have performed between January 2005 and December 2012 106 UKA. All patients were examined clinically and radiologically before and after operation. There were implanted two types of UKA, 67 of UKA were performed by The PRESERVATION™ (DePuy) with navigation and 39 UKA Oxford® Partial Knee (Biomet.) were performed by conventional technique. In our study we have evaluated 104 of medial UKA divided to groups, 65 implantation of The PRESERVATION™ and 39 implantation of Oxford UKA. We have evaluated 101 patients, 61 women, 40 men, average age 66,5 (50 – 82) years. Firstly we performed measurement of parameters determine alignment UKA. These values were written down and the deviation of norm was established. Results were divided in two groups, one with values of normal range and the second beyond normal range. Values of all UKA were matched with clinical outcome postoperatively. **Results:** The mean follow-up was 3,3 (max. 7,1) years. The Knee Society Clinical Rating System of navigated UKA improved from 58 (41 – 79) preoperatively to 93 (62 – 100) postoperatively. Conventional UKA score improved from 56 (39 - 77) preoperatively to 91 (61 – 100) postoperatively. Clinical outcome is comparable in both groups. **Conclusion:** Computer navigation enables more exact alignment of the femoral and tibial component than conventional technique. In spite of the fact that difference clinical outcome is comparable.

**Abstract no.: 34457**

**NEW METHOD IN RARE TRAUMATIC ANTERIOR DISLOCATION  
REDUCTION OF OF HIP**

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Aim : A New method of closed reduction for rare traumatic anterior dislocation of hip in emergency department. Materials and method :A discussion is presented of a new method of reduction of traumatic anterior dislocation of the hip joint on the basis of two representative case reports. Both were obturator type dislocations,one with an associated femoral greater trochanter fracture. Both the patients were treated without surgery with an average follow-up time of twelve months. Results: the patients were assessed based on the Merle d'Aubigné score and on the Thompson and Epstein score.The scores found to be good & excellent. We have not seen any necroses of the head of femur in our patients to date. conclusion: A new method of closed reduction is given for this infrequent type of injury in emergency department. Careful reposition under anaesthesia seems to be the most important factor in preventing complication.

**Abstract no.: 34461**

**EVALUATION OF EFFECT OF AUTOLOGOUS PLASMA (PLATELET RICH AND PLATELET POOR) ON GROWTH CHARACTERISTICS OF PRIMARY HUMAN ANTERIOR CRUCIATE LIGAMENT CELLS IN CULTURE CONDITIONS**

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Introduction: Platelet-rich plasma (PRP) is the cellular component of plasma (concentrated platelets) that settles after centrifugation, and contains numerous growth factors and PPP (platelet poor plasma) is plasma proteins without platelets containing growth factors other than platelet derived. To evaluate any beneficial effect on ACL cells, we investigated effect of autologous PRP & PPP on human ACL cell growth characteristics in culture conditions. Methods: ACL remnants were collected from eleven patients during ACL reconstruction; PPP and PRP were prepared from 100ml venous blood of these patients. Cells were isolated, identified morphologically and cultured in RPMI Hepes media also containing FBS (fetal bovine serum), 25 mcg ascorbic acid, L-glutamine and gentamycin for 24-48 hours in six groups. Group A (10% fetal calf serum+ ACL cells+ media, control), Groups B contained 5% PRP, Group C 5% PPP, and group D 10% PRP. Cell viability was assayed by MTT & Annexin V assay and DNA content by propidium iodide staining and flow cytometry. Results: Analysis of cultured cells in all 6 groups showed that PRP (5% or 10%) increased viability of ACL cells only in 4 and promoted cell proliferation in 8 of 11 donor samples; 10% PRP was more effective than 5% PRP. 5% PPP had no significant effect on cell viability, but DNA content (cell proliferation) was increased in 5 of 11 samples compared to controls, indicating some enhancing effect. Conclusion: PRP has a limited enhancing effect on ACL cell viability, but larger, more controlled studies are needed to confirm its clinical utility.

**Abstract no.: 34466**

**PSI TOTAL KNEE REPLACEMENT: PREOPERATIVE PLANNING**

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Patient specific instrumentation (PSI) is the latest advancement in total knee arthroplasty (TKA), which claims to improve alignment, simplify the surgical process, forecasts the component size and reduces the operating time. We discuss our experience of preoperative planning using default settings and making changes where necessary. **Materials and Methods:** We analysed prospectively collected data in 100 consecutive PSI knee replacements (Zimmer ®) performed in our institute during the period February to August 2012. All patients underwent MRI scans of the ipsilateral hip, knee and ankle joints. From the images, Materialise ® (Leuven, Belgium) provided 3D model of the knee on which preoperative planning was done using PSI software. All default plans were checked, appropriate changes made before final plan was approved by the senior author. **Results:** We made 636 changes (6.36 changes per knee) preoperatively from the default settings. In only 4% of the patients, the primary cuts needed revision. Thus in 96% of the cases, the primary cuts allowed optimal alignment and gap balancing with appropriate soft tissue release. Our preoperative planning predicted 99% of femoral and 98% of tibial component sizes definitively implanted. **Conclusion:** Our results show the importance of the surgeon's input in approving preoperative planning with this technique and not accept default plans.



**Abstract no.: 34467**

**CORRECTION OF SHEPHERD CROOK DEFORMITY: EXPERIENCE OF A LOW RESOURCE COUNTRY**

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**INTRODUCTION:** The correction of a Shepherd crook deformity reduces the risk of fracture in fibrous dysplasia. The techniques used vary; the cases in this environment are few. **CASE SUMMARY:** A 16 year old male student presented with recurrent right thigh pain and limp for 6 years. The first episode attributed to trauma during a game of football. The periods of exacerbation coincided with inability to bear weight for 6-8 weeks; had 3 such episodes; the last episode was 1 year ago while crossing over a guttered drainage. **EXAMINATION:** An adolescent with 7cm supratrochanteric shortening of the right femur and decreased movement at the right hip. He ambulates without aid, other limbs are normal. **X-RAY:** Displaced fracture of the proximal 1/3 right femur, 95ovarum deformity, sclerosis and widening of the femur at the fracture site. There were multiple cystic lesions at the trochanteric region and cortical thinning. **BIOPSY:** Fibrous dysplasia confirmed by tissue diagnosis. **TREATMENT:** He had exploration, cancellous bone grafting of the cyst cavities at the first operation. The correction of the deformity was achieved at the third operation by a more experienced surgeon using an inlay fibular strut graft, condylar plating with posterior iliac crest bone grafting. Post op LLD was 1cm. He ambulated with bilateral axillary crutches and had radio-graphic union at 6 weeks post op. **CONCLUSION:** The experience of the surgeon matters in the choice of treatment and operative planning. **KEY WORD:** Shepherd crook deformity, surgeons' experience, low resource country.

**Abstract no.: 34471**

**K-NAIL INDUCED OR PATHOLOGIC FRACTURE NECK OF FEMUR  
PRESENTING LATE**

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**INTRODUCTION:** Hemiarthroplasty is an established treatment for femoral neck fractures in elderly patients. The outcome correlates with the patient pre-injury ambulation status. **CASE SUMMARY:** An 80 year old woman presented with inability to use the left lower limb for four months. She had sudden onset of left hip pain and deformity of the left leg while in bed. A K-nail was inserted for left femoral shaft fracture 5 years earlier and she had ambulated without aid afterwards. She had controlled hypertension and moderate bilateral knee osteoarthritis. She had a traditional bone setter care; and thermal therapy resulting in thermal burns of the left thigh. **EXAMINATION:** Elderly woman wheel chair bound. The limb was externally rotated with 3cm femoral supratrochanteric shortening. The K-nail was palpable near the left iliac crest, with satisfactory range of knee and ankle motion. A non specific ulcer measuring 6x4cm was on the anterior aspect of the left thigh. **X-RAY:** Garden type IV fracture neck of left femur, proximally migrating K-nail, united diaphyseal fracture in an osteopaenic left femur. Pre operative Harris Hip score of 32. **TREATMENT:** She was co-managed with a physician, plastic surgeon and had pre operative ambulatory physiotherapy. At surgery 6 months post injury she had K-nail removed and cemented bipolar hemiarthroplasty. The limb length was equalized, and commenced weight bearing using walking frame 48 hours post operation. **CONCLUSION:** Late presentation should not prevent treatment. **KEY WORDS:** Late presentation, migrating K-nail, fracture neck of femur, osteopaenia, Traditional Bone Setter, thermal burns.

**Abstract no.: 34476**

**SURGICAL MANAGEMENT OF OCHRONOTIC SPINE WITH SPINAL STENOSIS AND INSTABILITY- -A CASE REPORT**

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**BACKGROUND:** Lumbar canal stenosis with instability following ochronosis is a disorder with limited reports in the literature. This case is being presented for the surgical management of one of the complications of alkaptonuria- ochronotic spine. **CASE REPORT:** A 32 year old male was referred from the Rheumatology department with a diagnosis of Alkaptonuria. The patient had severe back pain and was unable to sit or stand or walk for small distances. He was unable to lie comfortably in bed. X-ray of the Lumbar spine revealed loss of lumbar lordosis, gross narrowing of the disc spaces, dense calcification of all the discs and advanced osteoporotic and degenerative changes. Patient also demonstrated instability in the lumbar spine. These findings confirmed that the patient was having an ochronotic spine. MRI-LS spine showed severe canal stenosis at multiple levels. Patient was taken up for decompression surgery to relieve his symptoms. In addition an instrumented posterolateral fusion was done to address the instability. The spine was so osteoporotic that pedicle screws had poor purchase in the vertebrae. To overcome the problem of inadequate purchase in L5 vertebra , a spinopelvic fixation was done on the right side.**RESULT:** At follow up after 12 months, patient was comfortable being able to sit or stand comfortably and walk for long distances. However he still has pain in the lower back due to osteoporosis. He is on treatment for severe osteoporosis.

**Abstract no.: 34477**

**TO EVALUATE VIDEO ASSISTED THORACOSCOPIC SURGERY FOR TUBERCULOUS SPONDYLITIS**

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Introduction: Video-assisted thoracic surgery (VATS) has developed very rapidly in the last two decades, and has replaced conventional open thoracotomy as a standard procedure for some simple thoracic operations as well as an option or a complementary procedure for some other more complex operations. Aim: To evaluate the role of video assisted thoracoscopic surgery in the management of tubercular spondylitis of thoracic spine. Methods: Nine patients with mean age of  $37.11 \pm 20.55$  years were treated with VATS. In 3 patients bone grafting was done in addition to the debridement. Surgical and functional outcome was evaluated after one year. Results: Out of six patients who did not had any bone graft placement 4 had fusion and 2 out of three patients with grafts achieved Grade I fusion at 12 months. The VAS score for pain improved from a pre-treatment score of 8.3 to 2 at 12 month. The mean pre-operative and 12 month kyphosis angle in patients with bone graft placement were  $23^\circ$  and  $24^\circ$ ; and in patients without bone graft placement were  $25^\circ$  and  $41^\circ$  respectively. Six patients with pre-operative neurological involvement showed improvement on Frankel scale by variable grades. Three had an excellent and 4 had a good functional result using Kirkaldy Wills criteria. Conclusion: The findings of the present study suggest that video-assisted thoracoscopic surgery provides a safe and effective approach to the diagnosis and management of spinal tuberculosis in the modern era of minimally invasive spine surgery.

**Abstract no.: 34478**

**CULTURED CHONDROCYTES' APPLICATION FOR FULL-THICKNESS CARTILAGE DEFECT TREATMENT: EARLY TIME POINT EXPERIMENTAL STUDY**

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The aim of a study was to explore an effectiveness of implantation of the agarose hydrogel carrier seeded with allogeneic cultured chondrocytes in treatment of full-thickness cartilage defects have been modelled in hind limb femur intercondylar groove of a dog. The method of cartilage tissue enzymatic digestion and ex vivo culture of the dog articular chondrocytes provide approx.  $5.3 \times 10^6$  cells per 3.0 g of hyaline cartilage tissue. Three-fold chondrocyte passaging allows obtaining a sufficient therapeutic cell dose of  $10^7$  per 1 ml of agarose hydrogel. The chondrocyte plate efficiency at third passage evaluated by CFU assay was 44%. The cell doublings number was  $n=4,4$ . Chondrocyte population doubling time was  $t=35,3$  hrs. Pathomorphology study of necropsies taken from dog hind limb articular cartilage defect site without cultured chondrocyte implantation at early time point after experimental injury revealed the partial filling of the articular defect mainly by fibrous regenerate. Allogeneic implantation of dog cultured articular chondrocytes seeded in 2% agarose hydrogel into the articular defect site of dog hind limb femur intercondylar groove actively promotes the reparative formation of immature regenerate and its lateral integration with the host cartilage, showing the chondrocyte proliferative clusters at marginal zones, within 90 days early time point survey. Chondrocyte implantation in agarose carrier leads to complete defect filling with a mix of chondroid and fibrous tissue, which is typical for the early time course of reparative regeneration of articular hyaline cartilage when cell technologies have been used for cartilage injuries' treatment.

**Abstract no.: 34479**

**OSTEOID OSTEOMA OF METACARPAL BONE MISTREATED AS OSTEOMYELITIS; A CASE REPORT.**

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Abstract: Osteoid osteoma in the hand occurs mainly in the phalanges or carpal bones. The metacarpals are the least common sites for its occurrence, where it might mimic osteomyelitis, avascular necrosis, synovitis, and tuberculosis. We present a case of an osteoid osteoma of the base of the left fourth metacarpal bone in a 16-year-old girl. This young lady complained of night pain that became later-on constant over duration of one year. She was treated on 2-occasions before with surgical debridement and diagnosed as osteomyelitis. Four months after her second operation, she presented to us for the first time. Her WBC, CRP, and ESR were normal. Radiological studies of her hand showed sclerosis at 4th metacarpal base with no evidence of inflammation. Intra-operative findings showed sclerotic bone, with occlusion of the intramedullary canal, but not pus. Histopathology team at our unit reported features of osteoid osteoma with no inflammatory cells. Drilling of the canal was performed, with wide curettage of the bony lesion. It is now 4-months after her last surgery. She is pain free with no signs of recurrence. We conclude that osteoid osteoma can manifest with unusual presentation when it affects the metacarpal bones of the hand.

**Abstract no.: 34480**

**A CLINICAL STUDY OF PROXIMAL FEMUR LOCKING COMPRESSION PLATE IN THE TREATMENT OF INTERTROCHANTRIC & SUBTROCHANTRIC FRACTURES OF THE FEMUR**

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**Objective:**Peritrochanteric fractures account for nearly 50% of fractures around hip.90% Intertrochanteric fractures of femur in elderly occurs commonly through osteoporotic bone due to simple fall. The recent development of LCP has revolutionized the treatment by overcoming the few drawback's of conventional buttress plate. **Materials:**20 patients (14 male and 6 female) underwent closed reduction and internal fixation with LCP-PF during the period of from September 2010 to September 2012. Patients were followed up regularly. **Results:**We followed up all the patients until union of fractures ranged from 16-26 weeks. The average time for union of fracture was 18.35 weeks ranged from 16-26 weeks. We had total 13 complications include 1 knee joint stiffness, 2 infection,3 coxa vara with shortening>2cm and 3 case of shortening>1cm,and 4 cases of implant failure. We had 4 case of purely implant related complication like screw loosening, screw back out and plate migration. **Conclusion:**Our study showed that LCP-PF is a complex system which needs to consider careful attention of factors like understanding of the biomechanical principle of the plate, patient factor and definite selection of the patients for the treatment as there were high complication rates with respect to the implant.The overall results were fair in this study group as the complications out weighed. four failures in our study were due to screw back out, migration of plate, loosening of screws, and reduction difficulties causing fixation in varus, shortening. **Key words :** Locking compression plate; interal fixator, LCP-PF, Peritrochanteric fracture, intertrochanteric and subtrochanteric fracture

**Abstract no.: 34482**

**THE EARLY RESULTS OF THE REVERSE SHOULDER PROSTHESIS FROM AN INDEPENDENT CENTRE**

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Introduction: Reverse shoulder arthroplasty is gaining popularity for the treatment of significant rotator cuff deficiency in older patients with and without associated glenohumeral arthritis. Reports of the Delta III reverse-ball-and-socket total shoulder prosthesis demonstrated early glenoid notching and a lack of external rotation. The Reverse Shoulder Prosthesis (RSP) utilises a lateralised centre of rotation to tension the residual rotator cuff and prevent glenoid notching. We report our early experience of the RSP at an independent centre. Methods: 27 RSPs implanted by one surgeon between 2009 and 2012 were studied. The median age at surgery was 76 (range 64-87). The indication for surgery was rotator cuff deficiency in 22 patients and fracture sequelae in 5. A follow-up of 100% was achieved with a mean duration of 12 months (range 6-30). Results: The mean Oxford shoulder score was 17 pre-operatively and 28 at the latest follow-up (paired t-test,  $p < 0.01$ ). The mean EQ-5D was 0.3 pre-operatively and 0.7 at the latest follow-up (paired t-test,  $p < 0.01$ ). The mean maximum elevation improved from 66 to 102 degrees and mean maximum external rotation improved from 23 to 36 degrees. Complications included two intra-operative humeral fractures, one post-operative wound haematoma requiring evacuation, one late dislocation and one acromial stress fracture. No glenoids had evidence of notching using the Sirveaux criteria. To date none of the prostheses have been revised. Our early experience of the RSP encourages its use in rotator cuff tear arthropathy.



**Abstract no.: 34486**

**SURGICAL MANAGEMENT OF TIBIAL CONDYLE FRACTURES USING LOCKING COMPRESSION PLATE**

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**Objectives:**Incidence of fracture of the tibial condyle are increasing regularly due to road traffic accidents. Being one of the major weight bearing joint of the body, fractures around knee will be of paramount importance.**Methods:** We studied 21 patients involving tibial condyle fracture. Among them 5 patients surgically treated with MIPO technique and 16 patients with ORIF technique. **Results:**We followed up all the patients until union of fractures ranged from 16-24 weeks.The average time for union of fracture was 18 weeks ranged from 16-24 weeks, those plate bridge with the MIPO technique healed even earlier.We had total 6 complications include 2 knee joint stiffness, 1 post operative loss of reduction, 1 infection, 1 varus deformity and 1 case of knee instability. We had no case of any purely implant related complication like screw loosening, screw breakage plate failure.**Conclusion:**The patient sample approximately reflected the regular trauma patients encountered at our setup, fracture treated with bridge plating and combined principle of conventional and internal fixation (bridge plating) healed rapidly by secondary fracture union and hence achieving strong union across the fracture at a much earlier time compared to LCP as conventional plate. The MIPO type of reduction and fixation was less time consuming, less soft tissue injury so preserve the bone blood supply subsequently helps in healing of both soft tissue and bone faster.**Key words :** Locking compression plate; interal fixator; bridge plating; MIPO.

**Abstract no.: 34490**

**TECHNIQUE TIP: USE OF ACL JIG FOR HIND FOOT FUSION BY TIBIO-TALO CALCANEAL NAIL**

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**INTRODUCTION:**The use of intramedullary nail fixation for tibio-talo-calcaneal fusion is gaining popularity. There is chance of failure of procedure following faulty operative technique specially alignment. We describe a useful application of tibial tunnel jig in inserting the calcaneo-talotibial guide wire. There is precision of few millimetres in the exit point of guide wire on talus. This we think helps in better positioning of nail and hence better alignment and better operative outcome; **METHODS:**We describe a useful application of tibial tunnel jig in inserting the calcaneo-talo-tibial guide-wire with a precision of few millimetres through the calcaneum into talus and finally into tibia. The guide arm of the tibial jig is oriented desirably by adjusting the guide arm with respect to the drill sleeve. There are markings on the guide arm to indicate the optimum orientation of the guide arm with respect to the drill sleeve. Now the guide arm is placed on the desirable exit point of the guide wire on talus and the drill sleeve is put on the entry point of calcaneum. The guide wire is drilled through the drill sleeve. The guide wire comes out at the desirable place on the talus and then the tibial tunnel jig is removed and the wire is further drilled into the tibial medullary canal; **RESULTS:**There is precision of few millimetres in the exit point of guide wire on talus; **CONCLUSION:**There is precision of few millimetres in the exit point of guide wire on talus. This we think helps in better positioning of nail and hence better alignment and better operative outcome

**Abstract no.: 34491**

**OSTEOPETROSIS-A RARE ENTITY:CASE STUDIES**

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Introduction;Osteopetrosis (Marble Bone Disease) also known as Albers Schonberg disease is the descriptive term used to refer to a group of rare,heritable disorder of the skeleton characterized by increased bone density on radiographs. These conditions can be inherited as autosomal recessive, dominant or X-linked traits with the most severe forms being autosomal recessive. The overall incidence of these conditions is difficult to estimate but Autosomal Recessive Osteopetrosis has found to be (1:200000)births and in Autosomal Dominant Osteopetrosis form found to be in (1:20000) births.Diagnosis is largely based on clinical and radiographic evaluation.Osteopetrosis conditions vary greatly in their presentation and severity ranging from neonatal onset with life threatening complication such as Bone Marrow failure to incidental finding of Osteopetrosis on radiographs. Case Studies:A 55 years old Male Patient came with 8 fractures of the Lower Limb all after trivial trauma. And a 32 year old male Short statured with fracture shaft femur and two Tibial fractures following trivial trauma were both radiologically diagnosed having osteopetrosis. Methods;The fractures of both the patients were internally fixed and went on to heal without complication. Conclusion;Both Patients were treated operatively and the bones of both the patients were found to be hard, brittle and chalky and drilling was difficult with breakage of several drill bits.These patients seem to heal their fractures well in most cases of the adult form and hence cases like these should be operated upon and fixed and not left for as they have a delayed healing and often leads to deformity.

**Abstract no.: 34492**

**DROPPING OF INSTRUMENT BY SCRUB TEAM DURING HIP AND KNEE ARTHROPLASTY- DOES PATIENT'S SIZE MATTERS?**

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INTRODUCTION;Medical literature suggest that Hip and Knee replacement surgery takes far more time to conduct in overweight and obese patients than in general population. There are various reasons for increase in operating time in obese patient.One very interesting and to our knowledge never reported cause of increased operating time in obese patients undergoing hip and knee arthroplasty is accidental dropping of instruments;OBJECTIVES: To compare the incidence of dropping of instruments on floor by surgical team during hip and knee arthroplasty surgery on obese patients and non obese patients;METHODS:We conducted a prospective study of 50 consecutive hip and knee arthroplasty done in our university hospital. Out of these 25 had BMI of 30 and above.RESULTS:Instruments were dropped in 32 out of the 50 operations which gives a droppage percentage of 64.Out of these 32 operations in which instruments were dropped 20 of them started in the afternoon and 6 were in the evening. Of the 32 operations were instruments were dropped 24 were of more than 2 hours duration. There was significantly higher incidence of dropping of instrument by surgical team in obese patients compared to non obese patients.CONCLUSION: Our study highlights 1.As more instruments are used in obese patients the cost of arthroplasty is higher2.Operative time in obese patients may be indirectly affected by time take to replace dropped instruments3.There should be a back up of instruments in centres where obese patients are undergoing arthroplasty

**Abstract no.: 34494**

**PAIN RELIEF AFTER CAUDAL EPIDURAL INJECTION – DOES FATTY CHANGES IN SPINAL MUSCLE MATTERS?**

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**INTRODUCTION:** Low back pain is an important medical, social, and economic problem involving approximately 15% to 39% of the population. Of the numerous therapeutic interventions available for treatment of chronic low back pain, including surgery, epidural administration of corticosteroids is one such intervention commonly used. Despite the longitivity of this treatment there is no specific predictor of its outcome;**OBJECTIVES:** We looked into the relationship between short term pain relief and fatty degeneration in spinal muscle in patients undergoing caudal epidural injection;**METHODS:** This is a prospective study. We looked into 50 patients undergoing caudal epidural steroid injection for chronic back pain associated with disc pathology , facet degeneration of spinal canal stenosis. Apart from the specific pathologies mentioned they also were given caudal epidural steroid injection. All these patients were given 80 mg of depomedrone in operating theatre under x-ray guidance. Patients completed visual analog pain score and Oswestry disability index (ODI) pre injection and 6 weeks after injection. Patients spinal muscle mass and fatty changes were measured using T2 weighted axial MRI Image at lumber 4 vertebra;**RESULTS:** Results were analysed using statistical tests. Patients having more than 35 % fatty tissue in the spinal muscle did not do well with caudal epidural steroid injection as compared to patients having higher percentage of muscle mass;**CONCLUSION:** Our study helps in predicting the responders and non responders to caudal epidural steroid injection. This may also help surgeon in patient selection for this treatment.

**Abstract no.: 34496**

**ANTERIOR CRUCIATE LIGAMENT REGENERATION USING MESENCHYMAL STEM CELLS AND COLLAGEN TYPE I SCAFFOLD IN A RABBIT MODEL**

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**Purpose:** The objective of this study was to determine if using mesenchymal stem cells (MSC) seeded in a collagen type I scaffold would be sufficient to regenerate the torn anterior cruciate ligament (ACL). **Methods:** ACL transection was performed on both knees in 10 New Zealand rabbits and then repaired with: suture alone (suture-treated group, n=6), suture associated with collagen type I scaffold (collagen type I scaffold treated group, n=8) or suture associated with autologous MSC seeded on collagen type I scaffold (MSC/collagen type I scaffold-treated group, n=6). At 12 weeks post intervention, the animals were sacrificed and the ACL were characterized macroscopically and histologically. Data of the 3 groups were against normal ACL (normal group, n=10). **Results:** Macroscopic observation found that in MSC/collagen type I scaffold group, 33% of specimens showed a complete ACL regeneration, with a tissue similar to the normal ACL. Regeneration was not observed in the group treated with suture alone or associated with collagen type I scaffold without cells. In the latter only a reparative attempt at the ends was observed. Histological analysis of the regenerated ACL showed a tissue with organized collagen and peripheric vessels. **Conclusion:** These results provide evidence that the use of MSC seeded in a collagen type I scaffold in the treatment of ACL injuries is associated with an enhancement of ligament regeneration. This MSC-based technique is a potentially attractive tool for improving the treatment of ACL ruptures.

**Abstract no.: 34497**

**TREATMENT OF PERTROCHANTERIC FRACTURES (AO 31-A):  
WITHOUT C-ARM USING SIGN HIP CONSTRUCT**

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**Background/Purpose:** There is a high incidence of pertrochanteric fractures due to osteoporosis in elderly and trauma in young. The purpose of this study was to evaluate the effectiveness of SIGN Hip construct (SHC) for treating AO 31-A fractures without using C-arm Methods: The records of 19 patients presenting to Level I trauma centre between 2010 and 2012 with pertrochanteric fractures (AO 31-A) were retrospectively reviewed in whom SIGN hip construct was used. The initial surgery was done without using image intensifier. Patient demographics, treatment-related variables, and clinical and radiographic outcomes were recorded for each patient. Results: 13 patients qualified inclusion in the study. All were male patients with average age of 43years (Range: 25yrs – 75yrs). The average follow-up period was 42 weeks. The mechanism of injury was MVA in 6, fall 5 and bomb blast injury in 2. Eleven patients were full weight bearing within 16 weeks after surgery. There was one delayed union, 2 coxa vara and one patient developed infection which healed without any sequelae. Two repeat surgeries were done. Bone grafting in one case and bone grafting with re-fixation in another. 12 patients (92%) were full weight bearing without any complication, 9months after surgery. Conclusion: Use of SIGN Hip construct (SHC) is an effective treatment modality in treating pertrochanteric fractures. This can be used without image intensifier/C-arm and is very economical, thus it is an ideal treatment modality in limited resource settings.

**Abstract no.: 34498**

**TIGHT ROPE FIXATION OF NEER II DISTAL CLAVICLE FRACTURE- A CASE SERIES OF 3 PATIENTS**

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**INTRODUCTION:**NeerIIB distal clavicle fractures have high incidence of non union if managed non operatively;We present a novel approach to managing these fracture with a mini open technique with very good outcome;**OBJECTIVE:**Neer type-IIB distal clavicle fracture(conoid ligament disrupted; trapezoid ligament remains attached to the distal fragment)are characterized by disruption of the coracoclavicular ligament.Overall,TypeIIdistal clavicle fractures have a 20–30%non-union rate if treated nonoperatively. Surgical treatment is usually indicated;**METHODS:** A2–3cm incision was made lateral to the fracture site going infero-medially.Part of lateral end of clavicle was exposed close to fracture site and further dissection was carried out to expose coracoid process. Tight rope fixation of lateral end of clavicle and coracoid was done which achieved satisfactory fracture reduction on X-ray. Post-operatively patients were kept in a broad arm sling for four weeks and were only allowed gentle pendular exercises;**RESULTS:**After4weeks patients were allowed active shoulder movement.Radiographic union was achieved at 6 weeks' time and patients achieved good shoulder function 3months following operation;**CONCLUSION:**Tight rope fixation provides good apposition of the fracture fragments for union by maintaining the reduced coracoclavicular interval.This also allows the injured coracoclavicular ligaments to heal better with anatomical reduction.As the acromioclavicular joint is not violated,complications such as arthrosis are avoided.There is no risk of shoulder impingement as no metalwork is placed into the subacromial space as may occur with use of a hook plate.The implant is relatively low profile, and thus obviates the need for a second surgery for its removal.it may also be performed arthroscopically.



**Abstract no.: 34503**

**HIP RESURFACING VERSUS 28MM METAL ON METAL TOTAL HIP ARTHROPLASTY: RANDOMISED TRIAL AT 6 TO 9 YEARS FOLLOW-UP.**

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Introduction: For young and active patient, metal on metal is considered as a bearing alternative in THA. Questions still remain regarding the clinical value of femoral neck preservation with hip resurfacing (HR) versus total hip arthroplasty (THA). Methods: Two hundred and nineteen hips in 192 patients aged 18 to 65 years were randomised to 28-mm metal-on-metal uncemented total hip arthroplasty (THA, 100 hips) or hybrid hip resurfacing (HR, 109 hips). Results: Revision (4/99 THA, 6/104 HR,  $p=0.569$ ) and re-operation rates without revision (5/99 THA, 3/104 HR,  $p=0.428$ ) were similar at mean 8-year follow-up (range 6.6 to 9.3). One recurrent dislocation, 2 late deep infections and 1 peri-prosthetic fracture required revision in the THA group, whereas 5 patients in the HR group underwent revision for femoral head loosening and 1 for adverse reactions to metal debris. UCLA activity scores were significantly higher in HR (7.5 vs 6.9,  $p=0.035$ ), but similar WOMAC scores were obtained (5.8 in HR versus 5.1 in THA,  $p=0.615$ ) at last follow-up. Osteolysis was found in 37% of THA patients, mostly in the proximal femur, compared to 2.4% in HR ( $p<0.001$ ). At 5 years, mean metal ion levels were below 2.5  $\mu\text{g/l}$ , but chromium and titanium were significantly higher in the HR group ( $p=0.048$  and 0.006, respectively). Conclusion: Although revision rates and functional scores were similar at mid-term, long-term survival analysis is necessary to determine whether one procedure is more advantageous than the other.

**Abstract no.: 34507**

**WHAT IS THE UNDERLYING MECHANISM FOR THE FAILURE MODE OBSERVED IN THE PROXIMAL FEMORAL LOCKING COMPRESSION PLATE? A BIOMECHANICAL STUDY.**

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Background: Several cases of clinical failure have been reported for the Proximal Femoral Locking Compression Plate. The current study was designed to investigate the failure mode and explore the underlying mechanism. Specifically, the study sought to determine if the observed failure was due to technical error on insertion or to implant design. Methods: A foam block model simulating an unstable pertrochanteric fracture was created for three study groups with six specimens each. Group 1 was properly instrumented according to the manufacturer's guidelines. In Group 2 and 3, the first or second screw was placed in a posterior or anterior off-axis orientation by 2° measured in the transversal plane, respectively. Each construct was tested cyclically until failure using a test setup and protocol simulating complex axial and torsional loading. Radiographs were taken prior to and after testing. Force, number of cycles and failure mode were compared. Results: 2° screw deviation from the nominal axis led to significantly earlier construct failure in Group 2 and 3. The failure mode consisted of loosening of the off-axis screw due to disengagement with the plate, resulting in loss of construct stiffness and varus collapse of the fracture. Conclusions: With the current test setup, screw deviation of only 2° from the nominal axis consistently led to the failure mode observed clinically. In our opinion, it mostly relies on technical error on insertion. In addition, proper screw insertion may be difficult or impossible with the existing instrumentation devices, especially as it cannot be controlled or guaranteed intraoperatively.

**Abstract no.: 34508**

**A PROSPECTIVE COHORTE OF FEMORO-ACETABULAR IMPINGEMENT TREATED WITH HIP DISLOCATION APPROACH : MID TERM FOLLOW-UP OF 83 CASES.**

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Introduction : We prospectively assessed a cohort of patients treated for FAI by open procedure with hip dislocation. Methods : 83 patients were treated for FAI using a Ganz approach with trochanteric osteotomy and hip dislocation. Primary diagnosis were 5 Perthes diseases, 3 SCFE, 7 protrusios, and 55 isolated FAI. Patients were mostly (85%) classified as Tonnis 0 or 1. In addition to FAI correction (38 acetabular plasties and 65 neck plasties), labral lesions were either sutured (28/83) or debrided (31/83), and cartilage defects were addressed using microfracturing (15/83). Results : Per-operatively, labral and cartilage were considered as normal in only 20% and 13% respectively. At 4,3y average FU, 11 patients required THR, and 26 had trochanteric screws removed because bursitis. DVT occurred in 5 cases, deep infection in 1 case, and HO in 3 cases. There was no AVN, trochanteric non-union or neurologic deficiency. In the non-converted group : 1) 92% were satisfied, but only 30% became pain free 2) Womac scores significantly improved (26 Vs 42,  $p=0.003$ ), 3) four patients had a resulting trendelenbourg gait 4) Average Notzi angle was reduced from 73° to 49°, but 9 crescent signs were still present, 5) 16 patients (22%) had their tonnis grade aggravated by 1 point. Conclusion : At 4.3 years FU, Ganz approach is an effective treatment with high satisfaction rate, rare major complications, and a low conversion rate to THR. Concern remains due to the frequency of persistent moderate pain and disturbing trochanteric screws.

**Abstract no.: 34512**

**APPLICATION OF EXTRACORTICAL CLAMP DEVICE (ECD) IN FEMUR  
EXTERNAL FIXATION**

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The beauty of ECD ([www.ortho-suv.org](http://www.ortho-suv.org)) is possibility of handy stabilization of bone fragments that contain a large foreign body (implant stem or intramedullary rod). ECD have been used in treatment of 33 patients: Lengthening Over Nail (5), Bone Transport Over Nail (2), Sequential External Fixation and Nailing (7), External Fixation Assisted Nailing (10), periprosthetic fractures of femoral bone (7), non-unions over a nail (2). In all cases the purpose of treatment has been achieved. One case of ECD breakage and two cases of inflammation of soft tissues around the ECD were observed. These preliminary data have confirmed availability of further use of ECD based frames.

**Abstract no.: 34530**

**A STANDARDISED PROTOCOL FOR THE CONSERVATIVE MANAGEMENT OF ACUTE ACHILLES TENDON RUPTURE**

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**INTRODUCTION:** Achilles tendon rupture is the one of the commonest tendon injuries in the adult population. The incidence is increasing as aging adults pursue high-demand sports. The treatment however remains controversial, with studies comparing re-rupture rates in operative vs. non-operative groups showing inconsistent results. Furthermore, there is a lack of consensus amongst surgeons regarding the optimal course of non-operative management. Our study aimed to establish a standardized protocol for non-operative treatment of acute Achilles tendon rupture at our centre. **METHODS:** A retrospective review of 50 non-operatively treated acute Achilles tendon ruptures was performed. Data collected included patient demographics, medical co-morbidities, mechanism of injury and the course of non-operative treatment. Each consultant orthopaedic surgeon in the department was also surveyed to ascertain their preferred approach for non-operative treatment. Results were analysed and a new standardized protocol was proposed. **RESULTS:** Analysis showed significant variation in treatment by different consultants. Furthermore there was also variation between patients treated by the same surgeon. Analysis of patient demographics and mechanism of injury failed to show any pattern for a particular course of treatment. A new standardized protocol was devised and implemented. Early results have been encouraging, with positive clinical and functional outcomes. **CONCLUSION:** There exists significant confusion regarding the optimal management of acute Achilles tendon rupture. We have implemented a new standardized approach for conservative treatment with encouraging early results.

**Abstract no.: 34534**

**OUR EARLY EXPERIENCE WITH KNEE MEGA-PROSTHESIS USE FOR PERI-ARTICULAR KNEE TUMOUR**

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Introduction: Knee is the common site for most tumour. Optimal treatment for peri-articular tumour is debatable. Now the trend is shifting towards limb salvage surgery. In our set-up we have certain constraints which limit salvage surgery yet we are trying to improve our results for tumour management. We evaluated the efficacy of modular mega-prosthesis in patients having peri-articular bone tumour. Methods & Material: We performed Knee joint reconstruction with modular mega-prosthesis in seven patients having peri-articular bone tumour. Mean age was 35.5 years, with 5 male and 2 female patients. Five patients had giant cell tumour while two had osteosarcoma. Functional Outcome were assessed by Knee-Society-Knee-Score. Results: The minimum follow-up for patient was 17 months. Excellent results were reported in five patients, one with good result while one with poor outcome. Infection and recurrence was encountered in one patient. Conclusion: Modular mega prosthesis is a decent option for patient having peri-articular tumour though it is costly but associated with successful outcome in carefully selected patients.

**Abstract no.: 34536**

**SYNOVIAL CHONDROMATOSIS OF HIP: RARE DISEASE TREATED BY TOTAL HIP REPLACEMENT ARTHROPLASTY**

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Abstract: Synovial chondromatosis is a rare disorder affecting synovial membrane of joint, result in formation of osteochondral fragment, eventually leading to joint arthrosis. Patient usually present in fifth decade of life and diagnosis is usually delayed because of variable presentation. We are reporting a case of Synovial chondromatosis right hip in fifty two year old male, presented to us pain right hip joint from four years. Patient was initially treated by joint debridement and synovectomy two years back elsewhere. Patient presented to us with severe hip pain and restriction of right hip joint movements. Prognosis of the disease was explained to patient. Patient was managed by total hip replacement arthroplasty right hip. Harris hip score was improved from 54 pre-operative to 88 at most recent follow-up of 8 years. We conclude that total hip replacement arthroplasty is a viable option for patients with synovial chondromatosis with severe arthrosis.

**Abstract no.: 34537**

**OS INTERMETATARSEUM REVISITED – A CASE REPORT OF A RARE VARIANT AND REVIEW OF LITERATURE**

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Introduction: Os-Intermetatarsium (OI) is the rarest accessory bone of the foot. The incidence quoted in the literature from cadaveric and radiological studies ranges from 1.2% to 13%. So far 10 cases of symptomatic Os-Intermetatarsium have been reported. These reports suggest that OI are usually bilateral and arises most commonly from the base of the 2nd metatarsal and can be of any shape or size. It can be rudimentary or a fully formed bone. Our case report is interesting as it is a large, fully formed bone bridging 1st and 2nd metatarsal and completely fused to the 1st metatarsal diaphysis. To our knowledge, such bilaterally symmetrical and fully formed OI has not been presented before. We present review of literature and describe the relation of neurovascular bundle and deep peroneal nerve to the Os-Intermetatarsium during its excision. Case report: 14-year-old boy, who does karate at professional level presented with a four month history of pain and swelling on the dorsum of the both feet associated with feeling of pins and needles radiating into the 1st web space. On examination, there was swelling on the dorsum of both his feet. There was no neurovascular deficit but tinel's sign was positive on percussing over the base of the swelling suggestive of compression of deep peroneal nerve. Radiographs demonstrated bony mass bridging between 1st and 2nd metatarsal. A further CT scan of both feet confirmed large fully formed, bilaterally symmetrical Os-Intermetatarsium. Excision of this bar relived symptoms bilaterally.



**Abstract no.: 34538**

**SAFETY AND EFFICACY OF VISCOSUPPLEMENTATION FOLLOWING CHONDRAL SURGERY AND LIGAMENT RECONSTRUCTION OF THE KNEE**

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**Aim:** Viscosupplementation is used widely and its chondroprotective property is widely established in various studies. This study is aimed to assess the safety, analgesic efficacy and functional outcome of hylan GF-20 following chondral surgery of the knee and ligament reconstruction. **Methods:** This is an independent, prospective, blinded (reviewers), longitudinal cohort study in a single institution. Inclusion criteria was patients who had arthroscopic/open surgery to the knee for chondral injuries or ligament reconstruction. Patients received 3 x 2mL hylan G-F 20 or 1 x 6mL (from 2009). Follow-up at 1, 6, 12 and 26 weeks by blinded reviewers. **Results:** A total of 326 patients were recruited in this study. Mean age was 29.4 yrs. 139 patients had ACL reconstruction, 34 had MPFL reconstruction and the rest had chondral surgery. 51% had Grade II (K-L) OA changes. Injection and/ or treatment-related AE in the target knee were reported in 6.2% (3 x 2 mL) and 7.8% (1 x 6 mL) of patients. Significant pain reduction (68%) was observed in both groups at 26 weeks (3 x 2 mL: 67% (mean) decrease from baseline, 1 x 6mL: 51%). Overall knee pain on VAS improved from 74 to 31 at 6 months (p=0.02). There were no significant differences between groups in demographics or any of the primary or secondary outcome measures at 26 weeks. **Discussion:** In patients with post surgical pain due to chondral injuries, it is a safe option for symptom control. Its chondroprotective properties may assist in chondral repair and pain management

**Abstract no.: 34541**

**VISCOSUPPLEMENTATION AFTER ARTHROSCOPIC SURGERY OF THE KNEE: SAFETY AND EFFICACY COMPARED TO ARTHRITIC KNEES**

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**INTRODUCTION:** Hylan G-F 20 has been effectively used in the management of OA. There is a paucity of information on post arthroscopy use of viscosupplementation  
**OBJECTIVES:** We compare clinical effectiveness, functional outcome and patient satisfaction following intra articular injection of hylan G-F 20 following arthroscopic debridement  
**METHODS:** Patients with OA of the knee and mechanical symptoms who underwent arthroscopic debridement and/or minimal trimming of the cartilage were reviewed six weeks after the surgical procedure. All such patients with a VAS pain score of 6 or more (0-10, 10 as worst pain) were identified and offered hylan G-F 20 (3x2ml or 1x6ml). The control group were patients who did not have arthroscopic surgery. The minimum follow up was 12 months.  
**RESULTS:** We identified 664 patients (332 patched pairs) from our viscosupplementation database. Injection and/ or treatment-related AE (all mild/moderate) were reported in 9.5% (post arthroscopy group –PAG) and 10.1% (control group- CG) of patients. Significant pain reduction was observed in both groups at 26 weeks (PAG: 56% (mean) decrease, CG: 49%). There was a better reduction in pain in the PAG at 6months ( $p>0.05$ ) There were no significant differences between groups for any of the primary or secondary outcome measures at 26 weeks.  
**CONCLUSION:** There is a significant improvement in the pain and function of OA patients with hylan GF-20. The response is clearly amplified in post arthroscopy patients. It is a valuable tool in the surgeons armamentarium in long term management of OA patients

**Abstract no.: 34543**

**SPONTANEOUS RUPTURE OF SIX FLEXOR TENDONS IN ZONE FIVE  
COMPLICATED BY NEURITIS 18 YEARS FOLLOWING GALEAZZI  
FRACTURE**

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Introduction: Spontaneous tendon ruptures are extremely rare, pathogenesis is most likely multifactorial, and may involve underlying pathologic processes or previous history of trauma, rheumatoid arthritis, and use of steroids or statins. Case report: We report a rare case of an 84-year old woman who was diagnosed with spontaneous complete rupture of superficial (FDS) and deep flexor tendons (FDP) of the third, fourth and fifth digits of the right hand in zone five. The patient, who was otherwise healthy, active and independent, sustained a closed fracture of her right wrist eighteen years ago, which was treated conservatively. Current XRs and operative findings confirmed a malunited Galeazzi fracture. She requested surgical treatment to improve her hand function as she was not able to flex her middle, ring, and little finger, however she had normal function of the thumb and index finger. Additionally, she developed severe neuritis of the ulnar and median nerves. Exploration and repair of the flexor tendons, nerve decompressions and Darrach procedure were performed. Upon follow-up, the patient showed improvement in the function of hand and wrist, with the neuritis completely resolved. Conclusion: Spontaneous rupture of multiple flexor tendons in zone V as a late consequence of a Galeazzi fracture is extremely rare. Misdiagnosis or inadequate management of Galeazzi fracture may result in disabling complications, such as DRUJ instability, malunion, limited forearm range of motion, chronic wrist pain, and osteoarthritis. Correct management of a wrist fracture must be ensured to avoid possible late complications such as tendon rupture.

**Abstract no.: 34547**

**PERIPROSTHETIC METASTASIS – A RARE CAUSE FOR PROSTHETIC LOOSENING**

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Introduction: Periprosthetic osteolysis is a common complication in patients who undergo total hip replacement (THR). In a great majority of cases, aseptic or septic loosening is responsible for periprosthetic osteolysis and the subsequent THR failure. Malignant causes of prosthetic loosening are far less common and can frequently be misinterpreted as non-malignant. Case report: This study presents a case in which periprosthetic osteolysis following total hip replacement (THR) occurred as a result of metastatic mesothelioma. A 71-year old, previously healthy and independent patient underwent a very successful primary cemented C-STEM total hip replacement for primary osteoarthritis seven years ago and presented with increasing pain especially night times in his left thigh of 12 months duration. X-rays were suggestive of aseptic loosening with evident lucency around the femoral component. Patient underwent revision total hip replacement; tissue samples taken from the femoral canal revealed pleomorphic sarcomatoid appearances. Together with CT scans of chest the diagnosis of a metastatic biphasic malignant mesothelioma was made. Patient is receiving palliative chemotherapy. Conclusion: This study presents a case in which loosening happened as a result of periprosthetic metastatic infiltration. This is a very rare yet important cause of painful joint arthroplasty and should be considered when dealing with loosening of prosthetic implants. There should be a high index of suspicion for malignant causes of loosening especially in patients with atypical history and those who are at higher risk for primary malignancies. Routine histopathologic examination of removed tissue is essential for diagnosis.

**Abstract no.: 34548**

**PARAPLEGIA AFTER REVISION TOTAL HIP REPLACEMENT –  
PERIOPERATIVE METASTATIC SPINAL CORD COMPRESSION**

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Introduction: The combination of metastatic spinal cord compression (MSCC) leading to paraplegia and various types of cancer is well documented. Common malignancies leading to spinal metastasis include breast, lung and prostate cancer and non-Hodgkin's lymphoma. However, metastatic spinal cord compression occurring during or shortly following a routine orthopaedic procedure is extremely rare and early diagnosis is very difficult in patients who received spinal anaesthesia. Case Report: This study present the case of an 82-year old man admitted to hospital with a fractured left neck of the femur, which was treated with a cemented total hip replacement (THR). Unfortunately, he developed recurrent dislocation of his THR, requiring revision surgery, which involved the removal of cemented components. During this procedure, which was carried out under spinal anaesthesia, the patient developed bilateral paraplegia of his legs, noticed in the postoperative period. An urgent MRI demonstrated spinal cord compression at L2/L3 level; further investigations revealed transitional cell carcinoma. The previously independent patient now receives palliative treatment. Conclusion: This case describes the unique presentation of a MSCC developing perioperatively during hip surgery, leading to catastrophic neurological damage. It was felt that spinal anaesthesia did not contribute to the development of this spinal abnormality but masked the presenting symptoms. Although extremely rare, if a patient develops symptoms of neurological complications after a routine orthopaedic procedure, a potential MSCC diagnosis should be considered. Neurological examinations should be carried out during recovery to enable early detection of neurological complications and avoid delay in diagnostic imaging.

**Abstract no.: 34556**

**CALCITONIN GENE-RELATED PEPTIDE INCREASES PROLIFERATION OF HUMAN UMBILICAL VEIN ENDOTHELIAL CELLS BY ACTIVATION OF MAP KINASES**

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Objective : To investigate the effect of Calcitonin gene related peptide(CGRP) on the proliferation of human umbilical vein endothelial cells (HUVECs) and the role of mitogen-activated protein kinases (MAPKs) in CGRP induced HUVECs proliferation.Method : AlamarBlue was used to estimate the CGRP-induced proliferation of HUVECs, the influence of CGRP8-37 (CGRP receptor 1 antagonist), PD98059(ERK1/2 inhibitor), SB203580 (p38 inhibitor) and SP600125(JNK inhibitor) on this effect. Western blotting was used to test the activation of ERK 1/2, p38, JNK pathway.Result : Our data indicate CGRP improve the proliferation of HUVECs. HUVECs cultured with CGRP had a significant increase in phosphorylated ERK1/2, p38 and JNK and inhibited by PD 98059 , SB 203580 or SP600125. Conclusion : This study indicates that CGRP induces the proliferation of HUVECs, which is mediated by MAPKs.

**Abstract no.: 34558**

**NEUROPEPTIDE SP ACTIVATES WNT SIGNAL TRANSDUCTION PATHWAYS AND ENHANCES THE PROLIFERATION OF BONE MARROW STROMAL STEM CELLS**

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**Introduction:**Recent studies have shown that substance P (SP) mediates multiple activities in various cell types, including cell proliferation, anti-apoptotic responses, and inflammatory processes. This study investigated the effects of SP, NK1 antagonist and DKK1 on the proliferation of BMSCs, and to examined the related mechanism.**Materials and methods:**The isolated BMSCs were exposed to SP (10<sup>-8</sup>M), SP + NK1 antagonist(10<sup>-7</sup>M), SP + DKK1(0.2µg/ml), and the same amount of PBS , The expression of gene and protein of Wnt/β-catenin signaling was detected using Quantitative polymerase chain reaction and Western blot. **Results:**We found that SP (10<sup>-8</sup>M) significantly enhanced the proliferation of BMSCs and the Viable cell number was reduced by treatment with NK1 antagonist(10<sup>-7</sup> M) or DKK1 (0.2µg/ml), We also observed that SP significantly increased the expression of C-myc mRNA, Lef1, β-catenin protein and C-myc protein, but decreased the expression of Tcf7 and p-β-catenin protein compared to the control group, this result can be inhibited by the NK1 antagonist and DKK1, not significantly influenced the expression of CyclinD1 mRNA and β-catenin mRNA. **Conclusions:**our results suggest that SP enhances the proliferation of BMSCs via regulation of the Wnt/β-catenin signaling pathway.

**Abstract no.: 34560**

**TWO DIFFERENT STRUCTURE TRI-PHASE PLGA SCAFFOLDS AS SCAFFOLD TO REPAIR RABBIT OSTEOCHONDRAL DEFECT**

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**Objective** The purpose of the present study was to explore which tri-phase three-dimensional (3D) cylindrical poly-lactic-co-glycolic acid (PLGA) sponge ( 4mm×4mm ) is more suit for repair of critical size of osteochondral defect using cartilage tissue engineering method, wishing to obtain a more compacted connection between neo-cartilage and neo-subchondral bone. **Method** We obtained cell- scaffolds constructs by planting the BMSCs together with induce factor into two different 3D inner structure tri-phase PLGA scaffold, according to the intermediate phase' structure the scaffold were classified as connective PLGA scaffold and non-connective PLGA scaffold, and the constructs were planted into the acute osteochondral defect of medial femurs condyles of rabbit, the rabbits were randomly differenced into three group as connective group, non-connective group, and blank group, after 8 and 12 months the femurs were harvested and repair effect was evaluated and compared. **Result** Both connective and non-connective group can repair the critical size osteochondral defect with hyaline cartilage-like tissue, but there is more GAG content and chonarogenic and osteogenic mRNA expression in non-connective group. **Conclusion** Utilizing non-connective tri-phase PLGA scaffold repair cartilage better than using connective tri-phase PLGA scaffold, while together with a potential to become fibrocartilage and even bone, and connective tri-phase PLGA scaffold group have a better integration of neo-cartilage and neo-subchonaral bone. So the connective triphase PLGA scaffold may suited to repair Osteochondral defect via changing the attribute of the scaffold.



**Abstract no.: 34561**

**ADVANCES AND DISPUTES OF POSTERIOR MALLEOLUS FRACTURE:  
A REVIEW OF LITERATURE**

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Many advances and disputes exist in the biomechanical researches and clinical studies of posterior malleolus fracture. No consensus is found regarding what sizes of posterior malleolar fragments would lead to ankle instability thus affecting prognosis, and should be fixed. X-ray measurement is unreliable, while CT scan is widely recommended and it can recognize the occult posterior malleolar fractures associated with tibia shaft fractures, which is always undetected previously. Direct posterior malleolus fixation is suitable to stabilize syndesmotic injury. The basic and clinical researches support direct reduction and buttress plate fixation of posterior malleolar fracture through the posterolateral approach. Traditional operative indications are now challenging. Timing of weight bearing and prognosis affecting factors are still in discussion.

**Abstract no.: 34563**

**THE CLINICAL EFFECTS OF FREE PERFORATOR FLAP TREAT ANKLE SOFT TISSUE DEFECT**

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**Objective:** The aim of this study is to evaluate the surgical technique and clinical significance of the therapy for ankle soft tissue defect with 2 different free perforator flaps. **Methods:** 30 cases of ankle soft tissue defect with exposed bone of the ankle were involved in this study between August 2006 and April 2012(24 male, 6 female, aged from 3~52 years). the wounds were covered by vacuum sealing drainage VSD before free perforator flap transplantations were performed, and the wound sizes varied from 6cm×8cm~11cm×23cm. 12 cases were repaired by free perforator thoraco-umbilical flap; 18 cases were repaired by free perforator anterolateral thigh flap. **Results:** All 30 flaps survived. At 3 to 60 months follow-up (on an average of 18.0±0.8 months) postoperatively, appearance of the flaps was satisfactory, with 10 to 22 mm in 2-PD, and the sensation percentage beyond S2 was 58.3%、68.8%. **Conclusions:** The optimal therapy for the ankle soft tissue defect is the free perforator anterolateral thigh flap or free perforator thoraco-umbilical flap. The free perforator flap can decrease secondary orthopaedic surgery. VSD can significantly decrease the infection rates of the free perforator flaps.

**Abstract no.: 34564**

**MANAGEMENT OF HUMERAL NON-UNION AFTER FAILED FIXATION**

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Background: Management of humerus non-unions continues to be a challenging problem especially in the setting of failed prior fixation. Both compression plating and intramedullary nailing have been described as revision techniques with compression plating showing more consistent results. Acute compression plating with the use of bone graft substitutes has also been shown to be successful in humerus non-unions without prior fixation. The aim of this study was to assess the results of open reduction and compression plating with bone graft substitutes in the setting of humerus non-unions with failed fixation. Methods: Fourteen patients with humeral non-unions after failed hardware fixation from 2008-2012 were retrospectively identified. These humeral non-unions were classified as atrophic, hypertrophic, or oligotrophic and treated using a similar protocol of open reduction and compression plating with acute humeral shortening along with the use of demineralized bone matrix. Two patients were lost to follow-up. Humeral union was the end goal and defined radiographically as bridging bone across at least three cortices and resolution of clinical symptoms. Results: Humeral union was achieved in eleven of twelve (92%) patients with a mean time to union of 29 weeks. Radial nerve palsy occurred in three of twelve patients, however the three patients had previous documented palsy's following index procedure. Conclusion: Humeral non-union after failed hardware fixation can be effectively managed without the increased risk of complications associated with the harvest of autologous bone grafts. Union can reliably be achieved using acute humeral shortening osteotomy, compression plating techniques, and bone graft substitute.

**Abstract no.: 34569**

**ASSESSMENT OF CTEV CORRECTED BY PONSETI TECHNIQUE - RESULTS OF FIVE YEAR FOLLOW UP**

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Introduction: Widespread acceptance of the Ponseti technique in the management of Congenital Talipes Equino Varus (CTEV) has necessitated the need for a standard evaluation tool for assessing the treatment outcome. The evaluation potential of subjective methods currently in vogue needs enhancement with quantifiable and reproducible ones. This five year follow-up study aims to assess the treatment outcome of clubfeet by integration of biomechanical data alongside the traditional functional and clinical assessment. Methods: Nineteen patients, with twenty-nine treated clubfeet were assessed using the IMAR clubfoot scale. Questionnaire and clinical examination were employed to evaluate functional and clinical outcome. This was supplemented by digital pedobarographic, video analysis and analogue methods to assess biomechanical function utilising the Institute of Motion Analysis and Research (IMAR) clubfoot scale. Results: The biomechanical outcome was comparable to its functional and clinical counterparts, though subtle changes suggestive of possible early relapse, not hitherto evident in the latter could be identified. Conclusion: The results have been conclusive of the fact that clinically normal looking feet may not fare equally in a biomechanical perspective and subtle differences could be picked up adequately early so as to aid in timely intervention to prevent clinical relapse. The analysis of results from this phase suggests that IMAR Clubfoot scale has a potential to become the gold standard evaluation tool in post treatment CTEV assessment.

**Abstract no.: 34571**

**COMPARISON OF COST AMONG MEDICARE AGE PATIENTS UNDERGOING TOTAL KNEE ARTHROPLASTY BASED ON PRIMARY MEDICAL INSURANCE**

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Total knee arthroplasty (TKA) makes up a majority of surgical patients in the United States who require rehabilitation beyond the acute care hospital. Post-acute care can be provided in a multitude of settings including skilled nursing facilities (SNF). To qualify for a SNF under Medicare, a US government health insurance program primarily for patients over age 65, patients must stay 3 days in an acute care hospital. Some patients over age 65 may have additional, non-Medicare health insurance coverage as their primary insurance; these patients are not subject to the 3-day rule and can be discharged from the hospital to SNF no matter the acute care length of stay (LOS). This study compares LOS and cost per day based on primary medical insurance coverage among patients 65 years or older referred to a SNF for rehabilitation after TKA. A retrospective electronic file review was conducted for TKA patients (n=938) discharged to a SNF in 2010 and 2011; differences in acute care LOS and cost between Medicare and non-Medicare primary insurance groups both approached significance (P = .06). Combined acute care and SNF LOS was significantly higher for the Medicare group (P < .00). A linear regression model of age, gender, and type of insurance found that age was the sole significant factor in acute care cost. Results suggest the Medicare 3-day rule may not be cost effective for a TKA patient population. A randomized, prospective study of these two groups is recommended in the future.

**Abstract no.: 34573**

**THE CORRELATION OF BONY TORSION AMONG THE PHYSICAL EXAMINATION, GAIT ANALYSIS AND COMPUTERIZED TOMOGRAPHY IN CEREBRAL PALSY PATIENT WITH IN-TOEING GAIT**

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**Purpose:** The purpose of study was to assess the correlations between the torsion values measured by rotation profile, CT torsional study and gait analysis for the CP patients with torsional problems. **Material & Method:** The study group was 26 CP patients (spastic diplegia, GMFCS 1~2, mean age 12.6 years) with torsional problems. All subjects were assessed by rotational profile (IR(internal rotation), ER(external rotation)), CT torsional study (FAV(femoral anteversion) and TT(tibial torsion)) and three-dimensional computerized gait analysis (HR(mean hip rotation) and KR(mean knee rotation)). Statistical assessment with Pearson correlation test was done to investigate the relationship between the variables. **Results:** Strong correlation (Correlation coefficient(PC)>0.7) was observed between ER and HR(PC=0.80) and TFA and KR(PC=0.72), which meant good correlation between rotational profile and gait analysis. FAV, the anatomic value of femoral torsion, correlated well with IR(PC=0.69) and ER(PC=0.52), not correlated with HR on gait analysis( $p=0.23$ ). TT, the anatomic value of tibial torsion, correlated with TFA(PC=0.40) and KR on gait analysis(PC= 0.52). In the femur, HR correlated with ER but not with FAV. But in the tibia, TFA(rotational profile), KR(gait analysis), and TT(CT torsional study) were correlated significantly each other. Rotation of hip joint, which has larger rotation arc than the knee joint, is thought to be influenced by dynamic factors such as muscle imbalance in addition to the torsional malalignment. **Conclusion:** Joint rotation measured using gait analysis is influenced by static and dynamic factors, especially in hip joint. For planning the derotational osteotomy, CT torsional study might be needed as an auxiliary test.

**Abstract no.: 34578**

**EFFECT OF SYSTEMIC ADMINISTRATION OF RECOMBINANT GROWTH HORMONE ON ROTATOR CUFF REPAIR –A RAT MODEL STUDY**

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Back ground:Rotator cuff tear is one of the common problems encountered in the older age group. Supplementation of various growth factors at the local site has been tried in order to reduce re-tear rate. Despite recent advancements, retaining the growth factors at the repair site remains a challenge.Purpose:We hypothesized that re-tear of rotator cuff could be decreased by increase in local concentration of growth factors through up-regulation by systemic administration of recombinant growth hormone.Material and methods:We observed the effects of systemic administration of growth hormone on rotator cuff healing using rat as an animal model. 48 rats divided into four groups were sacrificed at 1, 3,6,12 weeks after rotator cuff repair respectively. Out of 12 animals in each group, 6 were administered GH while 6 were kept as control group. The rotator cuff muscles were obtained en masse and subjected to H&E staining, immunohistochemical staining for Collagen1 ,3, and BMP 12.Results :There was an increased number of chondrocytes, collagen fibers, hyperchromatic nuclei of chondrocytes, at 1and 3 weeks in the growth hormone group as compared to the control group.Immunohistology demonstrated high collagen 3 expression at 1 week while high collagen 1 expression at 3 weeks in the growth hormone group (p value<.05). High BMP12 levels were observed at 3weeks (p value<.05). All the results were analyzed using SPSS software.Conclusion :Our study depicts a significant improvement in rotator cuff healing rate with the systemic administration of growth hormone. Systemic administration of GH, holds great potential in decreasing re-tear rate.

**Abstract no.: 34579**

**THE POSITION OF THE AORTA RELATIVE TO THE SPINE IN PATIENTS WITH THORACOLUMBAR KYPHOSIS SECONDARY TO ANKYLOSING SPONDYLITIS**

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**Objective.** To explore the anatomic relationship between the aorta and spine in patients with thoracolumbar kyphosis secondary to ankylosing spondylitis (AS).**Background.** During lumbar spinal osteotomy, the aorta may be stretched at the osteotomized level producing a potential risk of the aortic injury. **Methods.** Thirty-three AS patients with thoracolumbar kyphosis and thirty-eight age and gender matched patients with a normal spine were included in this study. For each subject, the left pedicle-aorta angle and distance were measured from T9 to L3 on the CT images. Radiographs were analyzed to measure the global kyphosis, lumbar lordosis and to record the apex of the thoracolumbar kyphotic curve.**Results.** At T9-L3 levels, AS patients with thoracolumbar kyphosis exhibited significantly smaller Left Pedicle-Aorta angles (from 10.23° to -11.56°) and larger distances (from 39.0 mm to 55.5 mm) than those with a normal spine. With increased global kyphosis, the aorta shifted more laterally to the right at L1 and L2. Notably, the aorta was located at the middle front of the vertebrae at T12-L1 levels, and far away from the vertebrae at L2 and L3 levels.**Conclusions.** In AS patients with thoracolumbar kyphosis, the aorta is positioned more anteromedially relative to the vertebral body compared with that in the normal subjects. The aorta is far away from the vertebral body at L2 and L3 levels, thus it could be much safer to perform osteotomy below L1.



**Abstract no.: 34585**

**EVOLUTION OF VERTEBRAL AND DISC WEDGING IN IMMATURE PORCINE SCOLIOSIS MODEL AND ITS SIGNIFICANCE**

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**Introduction:** It is thought that both the discs and vertebrae become increasingly wedged as a result of asymmetrical loading and asymmetrical growth. However, no published study has ever longitudinally analyzed the progression of wedging deformity in animal scoliosis models. The present study was to investigate the evolution of the disc and vertebral wedging under unilateral tethering in porcine scoliosis model. **Methods:** Seven female pigs underwent posterior asymmetric tethering surgery. All pigs were observed with serial postero-anterior X-ray films at 4-week intervals to document progression of the deformity. The wedging angle of every disc and vertebra in the major curve was measured by Cobb's method, and the proportion to the Cobb angle was calculated (wedging percentage) respectively. The wedging of 5 vertebrae and four discs which included apex and two superior and two inferior vertebrae as well as discs between these vertebrae was also analyzed. **Results:** The wedging of the apical vertebra and disc was found to be larger than the adjacent area. Immediate postoperatively, the wedging of intervertebral discs made almost whole contribution to the scoliosis. However, the contribution of the vertebral wedging to the scoliosis increased over time. The wedging of the vertebrae made the major contribution (71.5%) to the scoliosis 8-week postoperatively. **Conclusion:** The respective contributions of vertebral and disc wedging to the Cobb angle varied over time under asymmetric tethering. To obtain a reliable scoliosis animal model, adequate tethering duration is required to get prominent vertebral wedging. **[Keywords]:** scoliosis; biomechanics; vertebrae; disc; wedging

**Abstract no.: 34587**

**THE ROLE OF INTERLAMINAR DYNAMIC STABILIZATION DEVICE (INTRASPINE) IN THE TREATMENT OF LATE DEGENERATIVE PROBLEMS**

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Introduction, The ultimate Clinical goal of Dynamic Stabilization using motion preservation Devices is to relieve Pain and to improve the function. Essentially it should preserve and restore physiologic motion, while maintaining the balance and stability of the spinal motion segment (SMS) by controlling motion or unloading the disk and or the facet joint. To meet this requirement the devices should be located at the bony neural arch either pedicle or lamina The fundamental feature in the design of the new device IntraSpine is the anatomical reconstruction of the SMS and regarding the overturned anvil with the anterior part the device should be placed between the laminae to achieve the "Sagittal Balance" Objective, Review the first 50 cases in 3 years : the techniques and minimum follow up 6 months Result, 17 males and 33 females, average age 56.9 ( 27 – 85 years old ) were treated using IntraSpine, The levels of dynamic stabilization are : L1-2, L2-3, L3-4, L4-5, and L5-S1. The skin incision is 3 cm, blood loss 30 cc, the surgical time for 1 level with decompression is 45', and patient is discharged from hospital 1- 3 days after surgery. After 6 months the result is excellent, no complain and patient can do normal activity daily living. Conclusion, This report shows a good result of IntraSpine in Dynamic stabilization and fulfills the goals of Dynamic Stabilization : 1. Stabilize the Segmental Instability, 2. Maintain the Sagittal Balance, 3. Restore the physiologic movement of Segmental Spine Unit.

**Abstract no.: 34604**

**ROLE OF CONTRAST ARTHROGRAPHY IN MANAGEMENT OF LATERAL CONDYLE FRACTURE OF HUMERUS IN CHILDREN**

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Background: Cartilaginous lateral condyles are difficult to visualise on plain radiographs. A contrast arthrography will be able to delineate accurate fracture geometry and if performed under image intensifier can guide the fracture reduction and fixation and facilitate closed reduction. We report use of this technique in 10 of our patients. Patients and methods: 10 patients including 7 boys and 3 girls were evaluated between May 2011 and January 2013 with plain radiographs 2 views (Antero-posterior & lateral ) and arthrography using contrast for lateral condyle fracture of humerus. Jakob's stage of displacement was used with 1 stage I, 4 stage II and 5 stage III fractures. The mean age was 4.1 years. Results: Contrast radiography under image intensifier was used in all cases and all stage I and stage II fractures could be closed reduced and fixed. 3 out of 5 stage III (60%) fractures which usually require open reduction could be closed reduced due to better delineation of fracture anatomy. 2 stage III fractures still required open reduction. Average time of cast and 'K' wire removal was 29.4 days. All fractures healed without complications with union time of 9-12 weeks. Conclusion: Contrast radiography can help in better understanding of fracture geometry and facilitate dynamic intraoperative reduction. This may help in reducing the requirement of open reduction in these fractures. Key words: Elbow injury, lateral condyle fracture, arthrography.

**Abstract no.: 34613**

**USE OF PLATELET RICH PLASMA INTRA-ARTICULAR INJECTIONS FOR ACROMIOCLAVICULAR JOINT OSTEOARTHRITIS.**

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A total of 10 patients (3 men and 7 women aged 31 to 72 years, average  $59 \pm 15,9$ ) with acromioclavicular joint osteoarthritis were followed at least for 12 months. They were suffering from pain, average  $70 \pm 3,6$  score using visual analogue scale (VAS). All patients had undergone previous conservative treatment with NSAIDs, physiotherapy and steroid injections into the joint without any improvement. We performed clinical, X-ray and ultrasound examination. 6 patients had Grade 2, and 4 patients had Grade 3 osteoarthritis according to the Kellgren and Lawrence grading scale. We injected intra-articular 2 ml of platelet-rich plasma (PRP) with a platelet count 8 times that of baseline, under ultrasound control. Results were prospectively evaluated at 3rd, 8th and 52nd weeks after the procedure using VAS. Also we evaluated ultrasound and X-ray changes in the joint. All patients demonstrated stable reduction of pain in 3 weeks after the injection to average level of  $17 \pm 5,8$  score by VAS. All patients had decrease of synovitis after 3 weeks, and overgrowth of scar tissue in the joint compartment within 8 weeks after procedure. The longest observation period was 3 years without return of pain while preservation of patient's sporting activity. Conclusion: We can assume that injection of 2 ml PRP intra-articular into acromioclavicular joint causes arthrofibrosis similar to arthroscopic or open resection of the acromioclavicular joint. A larger clinical trial is needed to establish the validity of our study.

**Abstract no.: 34625**

**PATHOLOGICAL FRACTURES SECONDARY TO BONE CYSTS IN LONG BONES – A PROSPECTIVE STUDY OF TREATMENT BY VARIED METHODS.**

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Background: Bone cysts in adults are rare and asymptomatic. Pathological fractures are challenging, because fracture has occurred in weak bone. The goals of treatment are to identify the cause, stable osteosynthesis, cure lesion, maintain length, prevent recurrence and refracture. Materials and methods: 6 cases presented with acute fractures in long bones studied from 2006 – 2012 with minimum of 16 months to 5 years followup. Fractures treated by either, Category I 3 patients with unicortical breach by Curettage, bone grafting and TENS. Category II 3 patients with bicortical breach treated by Curettage, bone grafting and Plate osteosynthesis. Union assessed by Modified NEER Classification of Cyst resolution. Results: Average age was 23.3 years (14 - 47 years). Three long bones were involved humerus (3), tibia (2) femur (1). All were in metaphysis except one in diaphysis. Lesions were 50% UBC and ABC. Peculiarly ABC patients were of second decade. UBC were in 3 and 4 decade. Iliac crest grafting done in all and Synthetic graft in 3. Avascular fibular graft used in 2 patients. The average followup was 36 months by serial X-Rays. All lesions healed completely attaining NEER stage II by 6 months. Conclusion: In Pathological fractures the need is to achieve Osteosynthesis and grafting to fill void. TENS provides support, stability, early mobilization in unicortical and pediatric fractures. TENS help transfer osteoprogenitor cells for cyst resolution and augment healing. Sturdy fixation by plate osteosynthesis is necessary in bicortical and lower limb fractures. Proper planning, implant and synthetic graft, will not only achieve Osteosynthesis but also maintain limb length and prevent refractures.

**Abstract no.: 34627**

**COMPARISON OF MRI AND ARTHROSCOPIC GRADED KNEE CARTILAGE DAMAGE. PROSPECTIVE STUDY**

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The objectives of this study were: to assess and classify the various types of articular cartilage lesions using MRI and to compare MRI findings with the arthroscopic findings. A prospective study was performed on 45 patients with clinical findings of ACL rupture. MRI of the knee was performed and arthroscopy for reconstruction of the ACL during which the condition of the cartilage was evaluated. In total of 45 examinees 315 articular surfaces were analyzed and lesions were classified during arthroscopy according to the Outbridge, and for MRI using Shahriaree's modification of Outbridge classification. On MRI a total of 168 articular cartilage lesions were found, and during arthroscopy 125 cartilage damages were observed. Arthroscopic and MRI staging was the same in 117 cases (93.6%). According to the localization of cartilage damage, the biggest matches of arthroscopic and MRI findings were for medial patellar facet (92.3%) and femoral trochlea (91.7%), and lowest were for the medial tibial condyle (75%) and lateral patellar facet (70%). MRI can detect and display cartilage damage that is still not visible arthroscopically. This lesions can be classified in two stages: 1a, which represents lesions in the superficial part extending up to the half of the thickness of cartilage, and 1b, which represents the lesions encompassing the full thickness of cartilage but with intact cartilage surface. Ability to detect cartilage damage prior to the onset of morphological changes will allow us to monitor the development of lesions and follow up the success of treatment.

**Abstract no.: 34629**

**ONE-STAGE POSTERIOR C2 AND C3 PEDICLE SCREW FIXATION OR COMBINED ANTERIOR C2–C3 FUSION FOR TREATMENT OF UNSTABLE HANGMAN'S FRACTURE**

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**Objective:** The present study aims to evaluate the effect of using a one-stage posterior C2 and C3 pedicle screw fixation or combined anterior C2–C3 fusion on the treatment of unstable Hangman's fracture. **Methods:** Thirteen cases of unstable Hangman's fracture patients were all given C2 and C3 pedicle screw fixation, lamina interbody fusion, or combined anterior C2–C3 fusion and imaging examinations to evaluate the fracture fixation and healing condition at 3 days and 3 months postoperation. **Results:** Postoperative X-ray and computed tomography (CT) results show high reduction, and good internal fixation position, and reliable fracture fixation. The three-month postoperative CT shows good vertebral fracture healing. **Conclusion:** C2 and C3 pedicle screw fixation has a good curative effect in the treatment of unstable Hangman's fracture. The direct fixation of the fracture enables early ambulation of patients.

**Abstract no.: 34631**

**OSTEOSYNTHESIS OF SEVERELY COMMUNED INTERCONDYLAR FRACTURES OF HUMERUS WITH PRECONTOURED LOCKING DOUBLE-PLATE INTERNAL FIXATION**

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**OBJECTIVE:** To evaluate the results of osteosynthesis of severely comminuted intercondylar fractures of humerus through olecranon osteotomy with precontoured, locking double-plate internal fixation. **METHODS:** 20 patients of severely comminuted intercondylar fractures of humerus were treated by precontoured locking double-plate internal fixation through posterior approach and transolecranon osteotomy. There were 14 males and 6 females, with an average age of 42.3 years ranging from 21 to 62. According to AO/ASIF classification, there were 11 cases of type C2 and 9 of C3. **RESULTS:** All patients were followed-up for 6 months to 2 years (means 1.5 years). The complications such as bone defect, ossifying myositis, tardive ulnar nerve palsy, internal fixation failure were not found in any of the cases. According to Aitken-Rorabeck scale the function of the elbow showed excellent in 14 cases, good in 5, fair in 1 cases. **CONCLUSION:** Anatomical reduction surgically reconstructed stabilization of the elbow and early active rehabilitation are crucial factors of functional rehabilitation of the elbow. The technique of osteotomy olecranon with precontoured locking double-plate internal fixation for treatment of severely comminuted fractures of humeral intercondylar is a good approach.



**Abstract no.: 34632**

**AN ANATOMIC STUDY ON THE PLACEMENT OF THE SECOND SACRAL SCREW AND ITS CLINICAL APPLICATIONS**

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**Background** Although several studies on the anatomical and biomechanical features of S2 screw fixation have been published, little clinical application has been reported, especially combination of anatomical investigation and clinical study. **Materials and Methods** Fifteen adult dry sacrum specimens were prepared and truncated from the S1-S2 and S2-S3 vertebral fusion remnants, and the morphology of the S2 vertebral body was observed from this section. The intersection of the horizontal line through the lowest point of the inferior edge of the first posterior sacral foramen and the lateral sacral crest was the entry point (Point X). The screws were inserted anterolaterally or anteromedially at Point X in 10 cadavers, with all of the screws penetrating the sacrum. Finally, the S2 sacral screw fixation technique was applied to a total of 13 patients with lumbosacral lesions, and the clinical outcome was evaluated at a minimum follow-up of one year. **Results** Two S2 sacral screw placement methods were developed, i.e. the anterolateral and anteromedial insertions. Seven patients had complete preoperative, postoperative and follow-up data. In all cases, the bilateral S2 screws were placed in good position and the fixation was firm. There was no surgical wound infection or internal fixation loosening. The bone graft healing was satisfactory. **Conclusions** The intersection of the horizontal line through the lowest point of the inferior edge of the first posterior sacral foramen and the lateral sacral crest can be used as the entry point for S2 sacral screw fixation.

**Abstract no.: 34635**

**THE INFLUENCE OF ILIAC WHEN PEDICLE SCREW WAS IMPLANTED IN L5**

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**Objective :** To study the influence of iliac when pedicle screw was implanted in L5.  
**Methods:** Collect 3-D CT data of 75 patients who suffered lumbar diseases, the plane in which the pedicle screw planted in to L5 was identified by software. Parameters for measurement: Draw a tangent line from the nail start point to the iliac and get the point of tangency, then draw a perpendicular line from the point of tangency to the midline, d1 is the distance from the point of tangency to the midline ; d2 is the distance from the intersection point which crossed by the nail axial extension line and the perpendicular line to the midline. d3 is the distance from the point of tangency to the nail axial extension line.  
**Results:** In the 75 cases, 30 cases are male, in which 2cases were not affected, 17 cases might be affected, 11 cases were affected obviously; 45 cases are female, in which 17 cases were not affected, 25 cases might be affected, 3 cases were affected obviously. In male cases, the average d2 of left side is  $39.02\pm 6.19$  as well as  $38.30\pm 6.45$  of the right side. In female cases, the average d2 of left side is  $34.46\pm 5.79$  as well as  $34.76\pm 5.63$  of the right side. There are significant differences of d2 between male and female( $P<0.05$ ).  
**Conclusion:** The influence of iliac when pedicle screw was implanted in L5was different between male and female. 3-D CT data could judge the difficulty before surgery.

**Abstract no.: 34638**

**CAUSALITY OF INJURY AND OUTCOMES IN PATIENTS ADMITTED IN A MAJOR TRAUMA CENTRE IN NORTH INDIA**

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Introduction: Trauma in south Asia is an increasingly significant problem, particularly in light of increasing motorization. Aims: To assess various epidemiological parameters that influence the causation of injury and their outcomes in patients admitted in a major trauma center in northern India. (Trauma center of King George Medical College). Materials and methods: A prospective study of 748 patients chosen by random assortment was carried out over a period of 1 year (August 2008 to July 2009) and clinical and epidemiological factors were noted. The length of stay of patients, Kampala trauma score and mortality depending on the arrival time in emergency department was also noted. Results: Overall trauma was most common in the age group 15-30 years (Mean age: 29.43±16.87 years). It was observed that road side injuries were the most frequent (66.71%) site of injuries, whereas household injuries (23.66%), farm site (6.28%), work place (1.60) were the next most common modes of trauma. Mean time of presentation of injured patient was 2.53\_+ 4.92 days. About 48.13% patients were admitted after more than 24 hours after the injury. Two wheelers (32.09) were found to be the most common mode of injury. Maximum injuries (65.31%) occurred in the rural setting. The overall length of hospital stay ranged from 2-178 days (median 15.6 days). Mortality is more in patients who arrive in night (between 9 pm and 5 pm). Conclusions: We conclude that the majority of injuries are preventable and the epidemiological trends differ from that of developed countries. Therefore preventive strategies should be made on the basis of these epidemiological trends.

**Abstract no.: 34640**

**OSTEOPOROSIS SECONDARY PREVENTION – A PATHWAY FOR IMPROVEMENT**

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Background: Osteoporosis is a condition affecting millions of people worldwide, and associated public health burden. Prevention of fragility fractures is vital, with orthopaedics having a key role to play. Secondary prevention, however, particularly in fractured neck of femur, is an aspect of management often overlooked. Through introduction of a structured integrated care pathway we sought to investigate if the implementation of secondary prevention would be improved. We aim through this study to demonstrate that implementation of an integrated pathway, along with education can lead to improved implementation of secondary prevention strategies. Methods: We performed a cross-sectional prospective study of 100 fractured neck of femur patients, both before and after introduction of an integrated care pathway. We assessed whether secondary prevention of fragility fractures improved and was inline with best practice guidelines. Results: Comparing the data before and after introduction of the integrated care pathway revealed significant improvements. With a change from 22% of patients receiving calcium and vitamin D replacement to 90%. 18% of patients were being appropriately treated with a bisphosphonate, prior to implementation, improving to 89% with the integrated care pathway. Discussion: These results both indicate that secondary prevention of fragility fractures is easily overlooked at the time of initial presentation. However to reduce the incidence of these fractures steps must be taken to increase the awareness of clinicians, and to initiate treatment early. This study demonstrated that through education and implementation of a structured pathway with clear guidance, improvements could be made.

**Abstract no.: 34643**

**A PROSPECTIVE STUDY OF CLINICAL ASSESSMENT OF ACL RECONSTRUCTION USING LOW FEMORAL TUNNEL POSITION BY TRANSPORTAL TECHNIQUE**

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ACL is the primary stabilizer of the knee joint and helps counteracting rotational and anterior translation of the tibia against the femur. The treatment of ACL has progressed rapidly from the placement of isometric single bundle graft by transtibial method to the complex double bundle anatomic reconstruction. We conducted a prospective study to assess the ACL reconstruction using the low femoral tunnel position by the transportal technique. We performed 60 ACL reconstructions from Jan 2012- October 2012, operated by a single surgeon and followed up the patients for a minimum of 6 months and assessed the patient with the return to pre-injury levels as our aim of reconstruction. The patient was chosen for surgery depending on the clinical assessment, MRI findings and the demand of the patient to get back to active sports. We assessed the sex predominance, mode of injury, time of presentation since injury, pre-injury Cincinnati and Lysholm scores and associated meniscus injury among the study variables. Post-operatively the patient was followed up for 4,8,12 and 24 weeks. Subjective and objective scoring using Cincinnati and Lysholm knee scores were used along with clinical tests (Anterior drawer, Pivot shift) to assess the result of ACL reconstruction at the end of 6 months post-operative. A rehabilitation protocol was followed for all the patients. We found that Road traffic accidents were a common mode of injury in our population. The ACL reconstruction using low femoral tunnel position is a safe and effective method to restore the function of ACL.

**Abstract no.: 34650**

**VITAMIN D LEVELS IN INDIAN POPULATION. DO WE NEED A NEW BASELINE FOR INSUFFICIENCY?**

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Vitamin D deficiency causes osteomalacia and rickets. Low serum vitamin D levels have been associated with trivial falls, fracture and low bone mineral density levels. Vitamin D deficiency has become worldwide issue more so in the elderly and remains common in children and adults. Some research shows that dark-skinned people living in temperate climates have lower vitamin D levels. It has been suggested that dark-skinned people are less efficient at making vitamin D because melanin in the skin hinders vitamin D synthesis; however, a recent study has found novel evidence that low vitamin D levels among Africans may be due to other reasons. We conducted a retrospective study of over 200 people into 2 groups. 100 patients who had radiological evidence of osteopenia and 100 in the control group with no evidence of osteopenia. The patients were ordered to get Vitamin D levels. The reports were assessed. The baseline values used in our set-up suggests deficiency for levels <20ng/mL and insufficiency for levels between 20 and 30 ng/mL. We consistently found low levels of Vit D levels in both the groups. A large group of patients fell into the category of Vit D deficiency with values <15 ng/mL including the control group. We found that we require a new classification system to assess the Vit D levels in our population. We also found that patients with low-back ache and pelvic pain had a lower level of Vit D compared to the control population.

**Abstract no.: 34654**

**OBTAINING FULLY INFORMED CONSENT - IS IT POSSIBLE?**

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Introduction: Surgeons must adequately explain to patients the recommended treatment so that they can understand the risks and benefits of the procedure along with other treatment options to obtain informed consent. In the UK the ability to do this forms part of the General Medical Councils guide to best practice. Methods: We present our experience of obtaining consent for arthroscopic subacromial decompression. We examined the patients' ability to recall and understand the information provided. We looked at the impact of consenting on the day of surgery as well as in the clinic when the decision to operate was taken. We also examine the impact of providing written information. We then looked to see what techniques are methods have been published in the literature to improve consent. Results: Regardless of when the consent was taken the vast majority (>90%) were able to either name or describe the nature of the operation. Consent taken on the day of surgery was associated with 20% being unaware of a single benefit and 20% being unaware of any risks. These improved with consenting in the clinic and the use of written information. However, regardless of when the consent was taken or the information was given over 90% of patients were happy with the information provided. Conclusions: The use of written information and repetition of the consent process does improve patient recollection. However, regardless of the method and number of ways the information is provided no patients are able to recollect all the necessary information.

**Abstract no.: 34661**

**LONG TERM FOLLOW UP OF TREATED IDIOPATHIC CLUB FEET**

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Club. foot is commonest congenital anomaly. Its incidence is 1-2/1000 live birth. 25 cases (33 feet) of Idiopathic club foot cases were picked up to find out the correlation between cosmetic, functional and radiological correction. All were treated by one single surgeon. Males 15 and females 10. Unilateral 17 and bilateral 8. Minimum follow up was 3.5 and maximum follow up was 22 years. On an average 8 years follow up. 50% of the children had forefoot adduction, 16 feet. 6 feet had hind foot varus and four feet had mild equinus and three feet had cavus. 28 feet were treated by PONSSETI METHOD and five feet were operated either post medial release or CSTR. In majority the Pirani score remained at 1.5 and 2. Functionally majority of children were happy. Five had pain while walking and running both and two had pain only on running. Radiologically in majority of the cases talo calcaneal angle was corrected but not the Talo first metatarsal angle it was mainly in the operated group who had compromised result. Our conclusion is that if the feet are plantigrade even with some residual deformity children are happy irrespective of their radiological correction. If one wants foot to look like normal foot then radiological correction has to be achieved.



**Abstract no.: 34663**

**IS TIMING OF SURGERY CRITICAL FOR LONG-TERM OUTCOME OF FOOT POLYDACTYLY?**

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**Aim:** To evaluate long-term results of foot polydactyly treatment, with primary focus on timing of surgery. **Methods:** 24 patients (9 male, 15 female) with polydactyly of the foot were surgically treated at our Department from 1995 to 2013. Patients were divided into two groups according to their age at time of surgery – under 5 years of age (A), and those older than 5 years (B). The age of 5 was chosen as a milestone for gait development, because children attain normal mature gait at that age. We assessed functional, radiological and cosmetic outcomes. **Results:** There were 12 patients in each group. Median follow-up was 14 yrs 6 mos (range, 1 year 6 mos – 19 yrs). Eight patients had preaxial and 16 postaxial polydactyly. Two patients with preaxial polydactyly had associated hallux varus deformity, 8 patients with postaxial polydactyly had associated polymetatarsia. Bilateral involvement was seen in 6 patients. Median age at the time of surgery in group A was 1 year (range, 9 mos – 4 yrs 6 mos) and in group B, 8 yrs 6 mos (range, 6 yrs – 37 yrs). All patients were able to walk and wear normal footwear without pain or discomfort after treatment. Post-operative X-ray images showed fifth toe varus malposition in two group A patients. One group A patient had excess soft tissue on site of surgery. One group B patient suffered fracture of the fifth metatarsal after K-wire removal. **Conclusion:** No significant differences in outcome between the two groups were found.

**Abstract no.: 34665**

**DEVELOPMENT OF EVALUATION AND TREATMENT METHODS IN PATIENTS WITH DYSPLASTIC HIP ARTHRITIS DEPENDING ON BONE MINERAL DENSITY**

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Background Osteoporosis is a risk factor for development of aseptic instability during arthroplasty from practice of Russia (Rodionova, 2007). Study objectives are to develop of evaluation methods in effectiveness, to develop complex treatment methods according to the normal bone density and to analyze results of treatment in dysplastic arthritis. Methods and materials It is conducted prospective nested case control method. Number of patients were 36 among 40 - 65 years, with diagnosis DHA, II -IV stages. Patients after X ray densitometry has been divided into 3 groups according to T score to osteoporoses, osteopenia and NBD. Patients were evaluated with 3 instruments before THA and after 6 months. As an evaluation methods it was conducted SF 36 model, Pain score and lameness score. Patients were treated dividing into 3 groups. Each group before and after THA has taken conservative treatment approach. Results Pain score shows sharp decline (7,2 to 2,8; 6,5 to 2,4; and 2,3 to 1,9 respectively). In SF 36 model score it is discovered added numbers to the quality of life (32-56; 34 -60 and 35-61). Lameness score has shown decrees (3,8-1,8; 3,3-1,7 and 2,8-1). Conclusions In DHA with THA, pains score, SF 36, lameness scores are effective instruments for evaluation. Defining bone mineral density in DHA is important for health outcomes. Treatment methods in DHA need to be selective approach to patients according to the bone mineral density.

**Abstract no.: 34669**

**PATIENT SPECIFIC INSTRUMENTS FOR TOTAL KNEE ARTHROPLASTY:  
A NOVEL TECHNIQUE WITH AN OPEN PLATFORM**

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The technique of patient specific instruments (PSI) is revolutionary as it provides an alternative to conventional instrumentation systems that have been in use since the 1970s. When we talk about technology in surgery, we have to consider cost, complexity, operative time and potential hazards. PSI has been adopted by 9 industrial companies and many surgeons only in the last couple of years. It is all about simplicity, especially when combined with accuracy, making some new technologies more accepted than others. The concept of this technique was first reported by Hafez et al in 2004 followed by experimental application<sup>1</sup> on 45 knee specimens (17 cadaveric and 28 plastic) showing successful performance of TKA in all cases without resorting to conventional jigs. The accuracy was accepted and the operative time was almost half compared to conventional techniques. The technique was later validated and showed no significant inter- or intra-observer variations. Preoperative CT or MRI images are acquired and imported to a special software system. Two virtual templates (femoral and tibial cutting guides) are designed and then transformed into physical guides using rapid prototyping technology (a printing machine). The guides have built-in information of the preoperative planning that can be transferred to the patient's knee when the guides are positioned on the matching surfaces of the distal femur and the proximal tibia. Then, surgeons can use these guides to make all necessary cuts or to guide the position of the conventional cutting blocks without using intra- or extra-medullary guides.

**Abstract no.: 34670**

**MID TO LONG TERM RESULTS OF UNCEMENTED TOTAL HIP ARTHROPLASTY**

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Uncemented THR works on the principles of Biological ingrowth Which would increase the longevity of the implant and long term results of THR? Results depend upon a) Technique of Surgery b) Design of implant c) Material of Implant d) Indications for use of implants. One must consider the age of patient and Density of bone. Materials & Methods: A prospective study of primary Uncemented THR done in 500 hips at Bombay Hospital with an average Follow up of ten years, range-1 – 13 years we have used different variety & implants from a) CLS (Sulzer) b) Bicontact (Aseculap) c) Corail (Depuy) These implants used bearing different surfaces. Minimum age of 21 years & Max years of 62 years Mean age was 42 years. Indications: We have used in different indications. Surgical approach was always posterior Radiological Evaluation was done by ENGH criteria Results: Compared with different authors with average 10 yrs follow up of bilateral rate was 99% We had clinical complications. Summary: Encouraging clinical radiological results in 1-13 yrs follow up. Clinically Harris Hip score increased to 82 points. Radiologically excellent fit of cups and stems, absence of shake lines, no Migration, no subsidence, good amount of spot welding along with both the components. Conclusion: Results of Uncemented THR over a period of average of 10 yrs are good to excellent, however the long term durability, strength of components and biocompatibility should be assessed after a long term follow up.

**Abstract no.: 34674**

**MECHANICAL AXIS DEVIATION AFTER COMPUTER ASSISTED TKA AND CONVENTIONAL TKA**

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TKA is a highly successful operation to relieve pain and improve function in arthritic knees. Restoring normal leg alignment after TKA is the most important factor affecting long term survival. Loosening rate is less in correctly aligned TKA. The mechanical axis of the knee is measured on long leg standing films. The normal angle of the mechanical axis should be  $(180 \pm 3)$ . Rate of survival is about 90% at ten years for patients with less than  $4^\circ$  of deviation from the neutral axis. CAOS is defined as the use of computer-enabled technology at any stage (pre-, intra and postoperatively) using various systems. Navigation techniques for TKA are the most popular system in surgical use. This modality is passive as it provides the surgeon with intra-operative measurements and feedback, divided to three types: Image free, CT-based and fluoroscopy based. Navigation surgeries have been shown to give the best post operative alignment in TKA with the drawbacks of increased time consumption and high cost. Hafez et. Al reported a new technique by using patient specific cutting guides instead of conventional instruments. Preoperative computer assisted CT-based or MRI –based planning to design femoral and tibial cutting blocks. Preoperative planning with sizing, cutting and verification of implant positioning and surgical simulation and then production of the guides. Rapid prototyping machine acts as a three dimensional printer by joining liquid, powder, and sheet materials, benefits of PSI include time saving, less invasive usable in bilateral cases, medically unfit patients and with a slightly higher cost than conventional

**Abstract no.: 34680**

**USE OF TANTALUM CONES IN PRIMARY ARTHROPLASTY OF ACUTE PROXIMAL TIBIAL FRACTURES**

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**Objectives:** The use of tantalum cones in primary arthroplasty for tibial fractures is not well documented in literature. The authors in this series have described the use of metaphyseal tantalum cones in primary TKA in selected group of patients and their functional outcome. **Materials and methods:** We present 3 case reports over 6 years. Patient presentation and management were recorded via online database systems. Three knees in 3 elderly individuals with mean age of 70.4 (59.2 – 79.0) years were operated on. One had a pre-operative varus deformity of 7.4 degrees and 2 had a mean valgus deformity of 15.3 degrees (15.0-15.5). Two fractures were classified as Schatzker II and one, Schatzker III. Tibial implants with stems were used in all cases. **Results:** Median time to operation from time of admission was 9 days (6-12). Ambulation with walking frame was achieved from POD 1, with weight-bearing as tolerated. Mean range of motion was 122 degrees (105-132), Mean Knee Society score was 88. All patients showed improvement in pre-operative limb alignment with 2 patients achieving correction to within 3 degrees of the mechanical axis. Radiological fracture union was achieved on an average of 3 months (2 – 5 months). All patients were independent ambulators and pain-free at latest follow-up. **Conclusion:** Our case series shows that tantalum cones are associated with significant improvements in clinical scores, patient symptoms, range of movement, early weight bearing and low rates of complications in complex proximal tibial fractures, with poor bone stock, planned for arthroplasty.

**Abstract no.: 34681**

**COMPLEX AND NON COMPLEX PRIMARY TOTAL KNEE REPLACEMENT  
– A NEW CLASSIFICATION**

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**Background:**The outcome of Primary TKR depends on complexity of the disease and general status of patient.The aim of study was to propose a modified classification based on prognostic risk factors and to study Outcome of primary TKR using proposed classification.**Methods:**During the period-June 2009 to Jan 2011 a prospective study was done on 212 patients who underwent TKR in Sancheti Hospital.These patients were divided in two main categories Non-complex and Complex group.Complex group was divided into group A-Anaesthesia or systemic issue, group B-Bony or local issue,group c-circulatory issues and group d-double combination of 2 groups.Parameters assessed perioperatively-operative time,drain output,hospital stay.Outcome measures assessed pre-operative and at one year follow up-clinical-pain,Knee ROM and functional-knee score, function score.**Results:**On statistical analysis all variables except flexion deformity were comparable between the 5 groups.Among intraoperative variables,operative time and blood loss was highest in group D while hospital stay was highest in group C.At follow up, Flexion deformity was significantly higher in group C and minimal in non-complex group.Knee ROM was lowest in group B.Knee score was lowest in group A while function score was lowest in group C, however there was no significant difference in pain score between the groups.WOMAC score was worse in group C.**Conclusion:**The comparison showed that non complex TKR gives better result as compared to complex TKR with respect to ROM, pain relief.Also significant improvement in functional outcome and quality of life score was seen with non complex TKR.The subgroups did follow the classification characteristics.Further reliability and validity is required for this classification.

**Abstract no.: 34684**

**OSTEOPOROTIC WRIST FRACTURES: CAN DAILY TEN MINUTES OF HAND GRIP EXERCISE PREVENT THEM?**

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Title- Osteoporotic wrist fractures: Can daily ten minutes of hand grip exercise prevent them? In middle to old aged individuals, wrist fractures due to osteoporosis are very common. A prospective interventional double blind study was conducted from November 2011 to October 2012 to find out the effectiveness of hand grip exercise in improving wrist bones quality and subsequently preventing these fractures. 28 female healthy volunteers with the mean age 49.5 years (range= 45-55 years) were included in this. All the volunteers acted as their own controls. With the left hand they performed hand grip exercise for five minutes twice a day using a standard hand gripper of strength 5kg. With the right hand they did not perform any exercise. At monthly intervals, BMD was measured at both the wrists using Sunlight Omnisense® 7000S ultrasonographic bone densitometer and t-scores were recorded. At the end of one year, results were analysed using paired t-test. Significant and consistent improvements in the T-scores of left wrist were observed, whereas right wrists did not show any improvements. No complaints related to the exercise were reported by any of the volunteers. On analysing the data using paired t-test, the probability came out to be 0.03, which is statistically significant. It was concluded that performing hand grip exercise for five minutes, twice a day, can significantly improve the bone quality of wrists and therefore, prevent the osteoporotic wrist fractures.



**Abstract no.: 34685**

**STUDY OF BONE MINERAL DENSITY(BMD) IN TYPE 1 AND TYPE 2  
DIABETES MELLITUS**

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Introduction: Diabetes may affect bone tissue by different mechanisms like obesity, hyperinsulinaemia, reduced circulating levels of IGF-1, hypercalciuria, microangiopathy and chronic inflammation. Only a few studies have studied the prevalence of osteopenia in diabetes. Hence it is essential to evaluate the prevalence and magnitude of diabetic osteopenia and its association with clinical, metabolic and biochemical variables. Methods: This cross sectional study was carried out by evaluating 50 cases having diabetes mellitus (Type 1 -17 and Type 2 -33) and 50 age and sex matched controls for BMD and associated parameters. Bone mineral densitometer was used for evaluating BMD. Results: In Type 1 DM patients 58.83% had osteopenia while 23.53% osteoporosis. In Type 2 DM patients 45.46% had osteopenia while 21.21% had osteoporosis. BMD values were significantly lower in Type 1 diabetics as compared to controls (p value=0.020). There was no significant correlation in BMD between Type 2 diabetics as compared to controls. BMD was significantly correlated with fasting blood glucose (r value=0.468, p value=0.05) and post-prandial glucose (r value=0.485, p value=0.04) in Type 1 DM patients. No significant correlation was observed between BMD and serum markers like alkalphosphatase, acid phosphatase, calcium and phosphorous. Conclusion: Type 1 DM patients are at risk of osteoporosis. Poor glycaemic control is a major risk factor for development of diabetic osteopathy. Differences between type 1 and type 2 diabetes are probably influenced by much greater body weight of latter, because obesity is associated with increased BMD. Also patients with type 1 diabetes may go through frequent episodes of insulin deficiency and metabolic acidosis at an early age, when peak bone mass is being determined. Optimisation of metabolic control may prevent further progression of osteoporosis.

**Abstract no.: 34688**

**INTRA-OPERATIVE IMAGING FOR TOTAL ANKLE REPLACEMENT. IS IT NECESSARY?**

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**Introduction:**We use intra-operative imaging for Total ankle replacements (TAR) since 2009 to check for component alignment. Prior to this period no such assessment was performed. The study aim was to compare the clinical outcomes and radiographic parameters in patients with or without imaging at surgery.**Method:**We identified the patients from the joint registry with TAR operated between 2007 and 2010 and established if intra-operative imaging was used.Two groups based on use of intra-operative imaging (Group A) and no-imaging (Group B) were formed . Patient demographics,AOFAS was collected and radiographic assessment was made with measurement of the component alignment in AP and lateral view on a long leg standard weight bearing radiographs pre-operatively and at 1 year follow up.The anterior distal tibial angle (ADTA) in the sagittal plane, lateral distal tibial angle (LDTA) and the tibial-talar angle were measured in the coronal plane on digital radiographs. **Results:**17 (Group A) and 16 patients (Group B) were included in the study. Mean age was 61 years in both groups. For Image group, there was a significant difference in LDTA, Tibio-Talar and AOFAS scores ( $p<0.05$ ). In Group B, the change in ADTA, Tibio-Talar and AOFAS scores was significant ( $p<0.05$ ). There was however no significant difference between LDTA, ADTA, Tibio-talar and AOFAS between Groups A and B ( $p>0.05$ ). **Conclusion:**Study shows that intra-operative imaging offered no benefit with respect to any significant change in the AOFAS and radiographic outcomes. We recommend that intra-operative imaging be only used where there is a clinical indication to do so.

**Abstract no.: 34691**

**EVALUATION OF SHORT TERM OUTCOME OF MANAGEMENT OF IPSILATERAL FEMORAL SHAFT AND HIP FRACTURES TREATED WITH RECONSTRUCTION-TYPE INTRAMEDULLARY NAIL OR VARIOUS PLATE COMBINATIONS**

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Introduction: Ipsilateral femoral shaft and hip fractures are commonly encountered following high energy trauma. Despite many treatment methods, controversy exists regarding the optimal management of these fractures. This study was planned to compare reconstruction-type intramedullary nailing and various plate combinations on the fracture healing and functional outcome in patients with these fractures. Methods: 15 patients with ipsilateral femoral shaft and hip fractures were operated by one of the two modalities - cancellous lag screws or dynamic his screw for fractured neck and compression plate fixation for fracture shaft of the femur (Group I, 8 patients) and Reconstruction-type intramedullary nailing alone (Group II, 7 patients) - depending on surgeon's preference. The functional results of the patients were assessed with the system used by Friedman and Wyman. Radiological and functional assessment was done by an independent evaluator blinded to the surgical procedure. Results: The mean age was  $33.6 \pm 4.03$  in group I and  $35.3 \pm 4.04$  years in group II ( $p=0.70$ ). The average follow up was 6 months. The average union time for femoral neck fracture was  $15.76 \pm 1.78$  and  $16.74 \pm 1.56$  ( $p=0.36$ ) weeks and for fracture shaft was  $20.3 \pm 1.65$  and  $22.33 \pm 2.10$  ( $p=0.15$ ) in group I and group II respectively. Two patients needed re-operation in group I and one patient in group II. 5 patients (62.5%) in group I and 5 (71.4%) in group II showed good functional results ( $p=1.0$ ). Conclusion: Ipsilateral femoral shaft and hip fractures can be treated satisfactorily either with nailing alone or various plate combinations with similar outcome

**Abstract no.: 34692**

**STUDY OF THE EFFICIENCY OF ARTHROSCOPIC SUTURE OF SHOULDER ROTATOR CUFF.**

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The aim of our study was to evaluate the results of treatment of patients who underwent arthroscopic rotator cuff suture. Since 2005, in our department 105 arthroscopic surgeries in patients with confirmed ruptures of rotator cuff in terms of 4-6 months after the injury were performed. Among operated there were 46 women (44%) and 59 men (56%). Mean patients age was 56.14 years. All patients were examined before surgery with X-rays, ultrasound and MRI. The function of the injured upper limb on a Constant scale before surgery was 26.7 points in average. Surgical intervention consisted of several stages: long biceps tendon tenodesis, subacromial decompression and suture shoulder rotator cuff. After surgery the upper limb was immobilized in a special brace with shoulder abduction about 20 degrees for 6 weeks with a mandatory passive shoulder movements, which began in 3 days after surgery. Since 3 weeks after surgery, patients take the course of rehabilitation treatment, which was aimed on the development of active movements in the shoulder joint and muscles training under physiotherapist control. On evaluation of treated upper extremity function on a Constant scale at 3, 6 and 12 months after surgery, we observed a progressive increase in shoulder joint function. In 1 year after surgery there were obtained excellent results in 57 patients (54%), good in 41 patients (39%) and 7 patients (7%) had satisfactory results of treatment. The function of the operated upper extremity on a Constant scale increased to 75.7 points in average.

**Abstract no.: 34693**

**NEW WAY TO TREAT BONE LOSS: A NOVEL ANABOLIC TARGETED THERAPY - BONE6-BIS**

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We have developed a new therapeutic concept for the treatment of osteoporosis named BONE6-BIS. This new therapeutic option will have better efficacy and safety profile in respect to the existing therapies. Novelty is related to “chimeric” molecule consisting of bone morphogenetic protein 6 (BMP6) and a bisphosphonate, linked by specific coupling chemistry. Bisphosphonate (BP), as a small molecule, directs BMP6 toward the site of action – bone surface, where BMP6 acts as anabolic factor. We have produced BMP6 in mammalian cell culture as a dimer with a large pro-domain. The pro-domain itself has neither bone inducing activity nor does it block the osteogenic activity of mature BMP6, but is stable and is used for purification of the mature BMP6 protein. The respective coupling chemistry involves conjugation of the bisphosphonate to the amino groups of lysine residues in the BMP6. By applying newly, in-house developed techniques we were able to confirm 5 out of 14 potential BP coupling sites in the pro-domain and all 7 potential coupling sites in the mature domain of the BMP6. In addition, we have shown that trypsin readily generates BMP6 peptides which were detected by sophisticated LCMS measurements. Coupling with Alendronate which has been selected as the most suitable BP is currently ongoing, after which the “chimeric” molecule will be ready for preliminary testing. In parallel, we thoroughly investigate by in vitro and in vivo experiments, specific molecular mechanisms and mode of action by which BMP6 induces formation of new bone.

**Abstract no.: 34694**

**TREATMENT OF DISPLACED TYPE II DISTAL CLAVICULAR FRACTURES BY OPEN REDUCTION INTERNAL FIXATION WITH AO LOCKING HOOKED CLAVICLE PLATE**

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Introduction-Type II fractures of lateral third of clavicle are complex injuries with a high incidence of non-union. Consequently, many authors advocate primary surgical intervention. In this study, we present our experience in treating displaced type II fractures primarily by open reduction and internal fixation with AO locking hooked clavicular plate. Methods-16 patients (mean age 32 years) of unstable and displaced Neer type II distal clavicle fractures were primarily treated by open reduction internal fixation with AO titanium locking hooked clavicular plate. Shoulder movements were started on second day of surgery. All cases were evaluated clinically and radiologically. Plate was removed after 4 months. Mean followup was 18 months. Results-All the fractures united in 12 weeks (Range 10-16 weeks). Complications like infection or implant failure were not observed. Stress fracture was observed in one case. All patients regained most of pre-surgery range of shoulder movements after surgery. Mean constant score 4 weeks after surgery was 88 which increased to 96 after removal of plate. All patients joined duty in 4-6 weeks. Conclusions-Locking hooked clavicle plate fixation is good alternative for treatment of type II distal clavicle fractures without significant complications. The most important advantage of this plate is that shoulder movements can be started early resulting in faster functional recovery and mechanics of acromio-clavicular joint is not disturbed. The only disadvantage of this method is the need for second surgery for plate removal.

**Abstract no.: 34696**

**REVIEW OF PATIENT'S EXPECTATIONS AND OUTCOME FOLLOWING  
TOTAL KNEE ARTHROPLASTY IN SOUTH INDIAN POPULATION**

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**Introduction:** Total knee arthroplasty has revolutionized the care of patients with end-stage knee arthritis. Expectations do variably influence self-rated satisfaction after surgery. **Methods:** Fifty two patients with osteoarthritis of the knee were subjected to a questionnaire preoperatively on their expectations of surgery in terms of expected time of recovery, expected pain after surgery, and expected limitations in everyday activities. Post operatively they were followed to evaluate clinical and functional outcome using knee society clinical and functional scoring system. Correlation of preoperative expectations to post operative outcome and satisfaction of the patient was assessed and parameters of expectations analysed. **Results:** Of the 52 patients, 28 were treated with Hi-flex PS design and rest with normal PS design prosthesis. 31 were males and 21 females with mean age of 63.8 years. Patients significantly underestimated the time for full recovery (expected  $1.2 \pm 0.6$  months, recalled actual time is  $2.7 \pm 0.7$  months;  $P = 0.005$ ). They were also overly optimistic about the likelihood of being pain-free (98% expected, 63% were;  $P < 0.05$ ) and of not being limited in usual activities (82% expected, 59% satisfied;  $P < 0.05$ ). The overall satisfaction post operatively at 1 year follow up was 61%. Pre operative expectations met the satisfactory levels at follow up in Hi Flex designs in 69% of patients compared to only 52.8% in other designs. **Conclusion:** The impact of patient expectations on satisfaction is profound. It would be better for orthopaedicians and patients to discuss expectations before surgery to assure that they are realistic.

**Abstract no.: 34697**

**SUPRA-CUTANEOUS METAPHYSEAL LOCKING COMPRESSION PLATE FOR GRADE I&II COMPOUND FRACTURE DISTAL TIBIA - A CASE SERIES.**

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Introduction: Supra-cutaneous plating using a locking compression plate (LCP) as an external fixator in peri-articular areas is facilitated by the development of anatomical plates. The soft tissue around the distal tibia is easily compromised by trauma and subsequent operative fracture treatment posing a definitive challenge in the distal tibia compound fractures. The purpose of this report is to describe our successful results using the metaphyseal locking plate (LCP) as an external fixator in the treatment of Grade I & II compound fractures of distal tibia. Methods: A total of five patients underwent "supra-cutaneous plating" of the tibia using a metaphyseal locking plate. Average age was 36years. Regular screw tract dressings were done. Average period of follow-up was 15 months. Results: Plate was in situ for an average of 24 weeks. There were no clinically significant screw site infections. In all patients the plate was kept in place until complete consolidation. At the latest follow-up (average 15months), all patients were fully weight bearing with a fully healed tibia. All patients were infection-free with well-healed wounds. Conclusion: Routinely, after initial debridement and temporary bony stabilization is provided by external fixation in compound fractures of the distal tibia with significant soft tissue injury. Most external frames for the lower leg are bulky and cumbersome, causing significant problems for the patient. To circumvent these issues, we have successfully used an anatomically-contoured supra-cutaneous metaphyseal locking compression plate as external fixator in five patients for grade I & II compound fracture of the tibia.



**Abstract no.: 34702**

**PIGMENTED VILLONODULAR SYNOVITIS: ARTHROSCOPIC AND HISTOPATHOLOGICAL STUDY OF 28 CASES.**

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Pigmented Villonodular Synovitis (PVNS) is an uncommon enigmatic synovial disorder. It is considered to be a giant cell variant but several times behaves like a locally aggressive but benign lesion. Three types have been described: localized, diffuse and an extremely rare malignant variety. We present 28 cases of PVNS since 1989 in knee (27 cases) and shoulder(1 case). Among these 7 were localized, 20 diffuse and 1 malignant case. All cases of monoarticular synovitis were screened with arthroscopy and biopsy was performed. Excision with near total synovectomy was curative in localized forms, diffuse forms required additional therapy and malignant form ended in amputation. Follow up was between 1 month to 10 yrs. Recurrence was common in the diffuse forms. PVNS being a rare diagnosis is easily missed, the symptoms mimicking a meniscal tear. Chances of fibrosis is less in arthroscopic treatment. Moreover, early diagnosis prevents the invasiveness of the disease.

**Abstract no.: 34703**

**USE OF POLLAR SCREW AS A FRACTURE FIXATION DEVICE**

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**Introduction** The Pollar Screw has been used to supplement Intramedullary interlocking nailing in the treatment of long bones fracture in order to keep the nail in the desired position and also to stabilize the fracture. Our aim was to evaluate the role of Poller screws as a supplement to stability after fixation with interlocked intramedullary nails in the fracture of proximal and distal tibia. We retrospectively analyzed clinical and radiological outcomes of 20 tibial fractures, 8 proximal third and 12 distal third who underwent intramedullary nailing supplemented with Poller screws from July 2008 to June 2012 at Nepal Medical College, Kathmandu. **Results** The mean follow up was 12 months. All fractures had united. Healing was evident radiologically at a mean of  $5.6 \pm 2.3$  months (3 to 12). Postoperatively 19 cases had  $< 5^\circ$  valgus or varus deformity one case had  $8^\circ$  valgus deformity. The only complication related to Poller screw was one case of irritation of anterior tibial tendon. The clinical outcome according to knee rating scale of the Hospital for special surgery, outcome was excellent in 15% good in 40%, satisfactory in 35% and fair in 10% and was not influenced by previous or concomitant injuries. **Conclusion** The pollar screw is used to improve and maintain reduction and fixation of long-bone fractures at the metaphyseal-diaphyseal junction, where there is a strong tendency for axial displacement. The pollar screw has been observed to work as nail stabilizer and fracture fixation device which enhances the fracture stability.

**Abstract no.: 34704**

**REVISION ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH QUADRUPLED TENDOACHILLIS ALLOGRAFT FROM YOUNG DONOR-OUTCOME AFTER EIGHT YEARS**

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The outcome of revision anterior cruciate ligament reconstruction has only rarely been reported. We evaluated outcome of revision anterior cruciate ligament surgery with use of tendoachillis allograft. Methods:- Between 2004 to 2012 patients underwent a repeat reconstruction of a previously reconstructed torn ACL with use of tendoachillis allograft. Primary reconstruction had been done with a BPT, ST/GR, Dacron graft and Allograft in 26 patients. The average time from primary to revision surgery was 5.85 years. Functional outcome, graft survival and radiographic outcomes were evaluated at a mean of 4.89 years. A graft was considered to have failed when a revision was done or pivot shift was positive. Results:- Total number of patients studied were 26. The mean IKDC subjective knee score was 84 and mean Lysholm score was 90. The result of pivot shift examination was normal in 23 patients and slightly positive in 2 and positive in one

**Abstract no.: 34708**

**DETERMINATION OF ADVANTAGES OF MIS APPROACHES**

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**Methods.** We followed-up 130 THR performed from November 2010 till October 2012. We have used MIS AL in 42 THR, Hardinge – in 56 and Muller approach in our modification in 32. We evaluated the surgery time, blood loss, VAS, HHS, biochemical markers of muscular alteration, biomechanical parameters of the gait, rhoentgenological evaluation of component positioning. The institutional THR register was the investigation data base. **Results.** The elevation of ASAT, LDG and myoglobin was significantly higher than in MIS groups. Biomechanical parameters of MIS groups were also significantly higher than in Hardinge. In MIS AL group in 8 cases were revealed the mistakes of positioning of the cup. The mean surgical time in the first two groups was similar - 93 (61–120 ) and 94 (65–118) minutes. In the third group it was less – 82 (55–125). The mean intra-op blood loss was 495 ml (300–1200) in MIS AL, 434 (150–1200) – in Hardinge and 336 (150–1000) in modified Muller. 10 days post-op patients of the first two groups felt less pain (VAS=3) than in Hardinge (VAS=5). Mean HHS in Hardinge group was less 3 months post-op than in MIS AL and Muller on 9 and 7 points. **Conclusion.** MIS approaches demonstrate better early functional, biomechanical and biochemical results with the higher rate of technical mistakes. It should be performed by the experienced surgeons.

**Abstract no.: 34715**

**CRYOSURGERY CARTILAGE-FORMING BENIGN BONE TUMOURS**

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Cryosurgery cartilage-forming benign bone tumours S .Dianov, Astrakhan State Medical Academy, Russia Benign cartilage forming tumours degeneration in chondrosarcoma is 12% that makes this problem of their treatment actual. 1233 patients with tumours benign bone, 741 (58%) of which with chondrogenic origin tumours have been treated in clinic since 1964. Osteochondroma (osteocartilaginous exostosis) was diagnosed in 633 (85%) cases, 102 (14.2%) patients were operated for chondroma, chondromyxoid fibroma was in 3 (0.4%) and chondroblastoma in 3 (0.4%) patients. Tumours localization in the pelvic bones and large metaphyses is absolute indication for urgent surgery. Cartilage forming tumours such localization are considered as malignant. To prevent recurrence and tumours malignancy cryotherapy bone healing following resection is conducted in clinic. The experimental study of the effect of ultralow temperatures on cartilage tumour tissue showed that the contact has reached 90-100 destruction of tumour cells and 60-80 for instillation coolant. The operation was completed with alloplasty bone defect grafts treated by method of the clinic. 202 patients with osteochondroma, 33 patients with chondroma, all patients with chondroblastoma and chondromyxoid fibromas were undergone cryosurgical treatment. Cases of tumour recurrence or malignancy in the observed group of patients with cryosurgical intervention were not registered. In patients with the standard methods of operational intervention in one case there was osteochondroma relapse and malignancy in 6 patients (2 with osteochondroitis and 4 with bone chondroma).

**Abstract no.: 34716**

**ANKLE SYNDESMOTIC INJURIES: A COMPARISON OF TRADITIONAL SCREW FIXATION TO TIGHTROPE FIXATION**

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Introduction: Syndesmosis injuries are common with incidence of 15 per 10,000 and are associated with 15% of all ankle fractures. Traditional metallic screws fixation of the distal tibiofibular syndesmosis is being challenged with a new suture endobutton device (TightRope). However, there is paucity in the literature over complication rates in a comparable group with most studies having short follow up and small number of patients. Our aim was to assess complication rates in syndesmotic injuries treated with the two techniques in a comparable group. Method: All cases of distal tibiofibular syndesmotic injuries performed in our institute between 01/2008 and 12/2010 were retrospectively analysed. Results: A total of 42 patients were treated with traditional screw fixation and 43 with TightRope device over the same period. Follow up was for a minimum of 6 weeks or till complications resolved. In the syndesmotic screw group, 52% of patients had screw removed post operatively compared to 9% of patients in the TightRope group. Wound infection rates were 14% and 2% in the syndesmotic screw group and TightRope group respectively. Discussion: Our study highlights that there is comparable rate of wound site infections in both groups. However, with regard to re-operative rates, TightRope fixation appears to be superior to traditional screw fixation.

**Abstract no.: 34719**

**SARCOPENIA IN UKRAINIAN WOMEN OF DIFFERENT AGE**

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The aim of this study is evaluating of body composition and frequency of sarcopenia in women depending on age. Materials and methods. We've examined 8637 women aged 20-89 years (mean age –  $56.7 \pm 0.14$  yrs; mean height –  $162.5 \pm 0.07$  cm; mean weight –  $73.5 \pm 0.16$  kg). The patients were divided into two groups depending on age: 20-24 (n=143), 25-29 (n=209), 30-34 (n=271), 35-39 (n=326), 40-44 (n=419), 45-49 (n=794), 50-54 (n=1292), 55-59 (n=1534), 60-64 (n=1193), 65-69 (n=943), 70-74 (n=877), 75-79 (n=384), 80-84 (n=204) and 85-89 yrs (n=48). Lean and fat masses and total body, lumbar spine, femoral neck bone, forearm bone mineral density (BMD) were measured by DXA using a densitometer Prodigy, GE. Results. We have found the significantly differences of fat and lean masses in women with age: fat mass (F=83.19;  $p < 0.0000001$ ); lean mass: (F=29.15;  $p < 0.0000001$ ). Frequency of sarcopenia in women aged 65 yrs and older was 7 % (women aged 65-69 yrs (n=943) – 7.6% (n=72), 70-74 yrs (n=877) – 6.1% (n=54), 75-79 yrs (n=384) – 6.3% (n=24), 80-84 yrs (n=204) – 6.9% (n=14), 85-59 yrs (n=48) – 10.4% (n=5). Conclusion. Fat and lean masses were significantly decreased with age. The maximal accumulation of fat and lean masses was in women aged 50-59 years. Frequency of sarcopenia in women aged 65 yrs and older was 7 %.

**Abstract no.: 34720**

**BONE MINERAL DENSITY AND FRACTURE RISK IN DUCHENNE MUSCULAR DYSTROPHY**

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Boys with Duchenne Muscular Dystrophia (DMD) often get prednisone to slow progress of their disease. Because of their reduced mobility they are already at risk to have a lower bone mineral density (BMD) and possibly prednisone makes the BMD even lower, which increases the fracture risk. We performed a longitudinal prospective observational study. 42 boys were included (5,0-19,4 year) en followed for 1 to 12 years. BMD and fracture incidence are described in relation to age, BMI, activity level and use of prednisone. A Linear Mixed Model is used to describe the development of the BMD. A prediction model was made to predict the chance on a fracture during the course of the disease. BMD increases with age, but too little in comparison with contemporaries, so Z-score is decreasing. The Z-score of the mobile boys is on average -0.55 and of wheelchair bounded boys -1.82. 9 patients had 1 or more fractures (1-4). At the age of 15 40% of the boys already sustained a fracture. Thereby a prediction model has been made with the parameters: age, Z-score, BMI, use of prednisone and mobility level. Boys with DMD had a lower BMD in comparison with healthy contemporaries and a high fracture risk, which also can be predicted. In this cohort we cannot find a higher fracture risk for prednisone users. Possibly this is because the boys stay mobile for a longer time, and loss of mobility is a strong predictor for both Z-score and fracture risk.



**Abstract no.: 34726**

**LONG TERM HEALTH CARE UTILIZATION AND OUTCOME AFTER ADULT SPINE DEFORMITY SURGERY**

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Prospectively followed retrospective cohort study was designed to investigate distribution of primary and hospital based health care services by adult spinal deformity patients in combination with their self reported long-term benefits. 134 patients duly filled EQ-5d-Dallas pain questionnaires. Data on primary and hospital based health care sectors were obtained from Danish registers; The National Health Insurance Service Registry provides records of patient's contacts to primary health care and The National Patient Registry provides details on in-outpatient-emergency visits to hospitals. Higher disability was seen in older age groups with pain and functional limitations (63%, 26%) as chief complains at the time of surgery compared to younger patients. 38% patients reported improvement in dependence status. Patients below 30 years were significantly working (n=27) compared to older age groups (n=7) at followup. Perceived emotional- cosmetic improvement ranged in 40% to 77%. Only 4/99 female patients reported concerns of getting pregnant. The hospital based health care use was constant throughout with minimal fluctuation. Services related to cardio- respiratory, musculoskeletal systems constituted the major chunk of hospital health care use. In contrast; primary sector usage had a steady increase since surgery with increased visits to general practitioner and physical therapist. No significant differences were observed in both sector utilizations with varying co-morbidity and surgical age. Education, age at surgery, spinal fusion till sacrum and non-working status were significantly associated with the variability in EQ-5d and visits to general practitioner. History of smoking was significantly associated with higher number of visits to the practicing specialist

**Abstract no.: 34730**

**DISTAL RADIUS FRACTURES: THE CONSERVATIVE TREATMENT VARIABILITY.**

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Distal radius fractures are one of the oldest described skeletal injuries which continue making a topical problem for an orthopedic surgeon. The most (up till 95%) of these fractures regardless the AO type in Russia undergo conservative treatment. But the methods of this treatment may vary not only among different hospitals or orthopedic schools, but even inside one orthopedic department. First of all, closed reduction most is performed by surgeon and two assistants, making countertraction. Some surgeons however perform the reduction without traction: this method may be more traumatic but doesn't demand assistants. The form of plaster splints also varies widely: surgeons apply straight dorsal splints, double dorsal and ventral splints, "sugar tongs" splints and fenestrated splints. The timing and the necessity of the splint replacement by the circular bandage is not determined well. In some departments the splint replacement is not performed at all. The approach to rehabilitation also remains different. Some patients are allowed to earliest range of motions in hand small joints but some are not allowed even a passive movement. As the majority of patients undergoing the conservative treatment are the perimenopausal women the best designed rehabilitation program is household management.

**Abstract no.: 34734**

**TRABECULAR BONE SCORE AND BONE MINERAL DENSITY OF LUMBAR SPINE IN HEALTHY WOMEN: PROS AND CONS**

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The aim of this study was to evaluate the PA spine Trabecular Bone Score (TBS) and site matched bone mineral density (BMDLS) in healthy women of various ages and verify how the “normal” presence of such artifact would impact the outcome. Materials and methods. All women who had prior exposure to corticosteroids, systemic illness or who were taking medications known to affect bone metabolism were not included. Similarly all fractured subjects were excluded from this analysis. We’ve examined 176 healthy women aged 40-79 years (mean age – 53.4±0.6yrs; mean height – 1.64±0.005m; mean weight – 80.4±1.1kg). The patients were divided into the following age-dependent groups: 40-49, 50-59, 60-69, 70-79 yrs. BMD of whole body, PA lumbar spine and proximal femur were measured by DXA method (Prodigy, GEHC Lunar, Madison, WI, USA) and PA spine TBS were assessed by TBS iNsight® software package installed on our DXA machine (Med-Imaps, Pessac, France). Results. We observed a significant decrease of TBS as a function of age (F=6.56; p=0.0003) whereas PA spine BMD was significantly increasing with age (BMDLS: F=4.04; p=0.008). TBS decreased with age significantly. BMD of lumbar spine significantly increased in healthy women depending on their age, as it seems to reflect the impact of aggravating spinal osteoarthritis. This contradiction can be traced to the spinal osteoarthritis and degenerative diseases progressing with age in the elderly patients. Conclusion. TBS is an independent parameter which has a potential diagnostic value of its own, without taking into account the BMD in case of bone degenerative diseases.

**Abstract no.: 34737**

**TRABECULAR BONE SCORE (TBS) IN WOMEN WITH RHEUMATOID ARTHRITIS**

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The aim of this study is evaluating TBS in women with rheumatoid arthritis (RA) depending on their age. Participants were 185 women with RA who fulfilled the American College of Rheumatology criteria. Clinical assessment included demographic data: age, height, weight, and BMI (kg/m<sup>2</sup>). Disease duration was defined as the time elapsed between the onset of first disease-related symptoms and enrollment. We have included 76 women aged 42-76 years (mean age – 60.2±1.1 yrs; mean height – 161.5±0.7 cm; mean weight – 73.0±1.8 kg), who were divided into the groups depending on their age: 40-49 yrs (n=11), 50-59 yrs (n=24), 60-69 yrs (n=24), 70-79 yrs (n=17). BMD of whole body, PA lumbar spine and proximal femur were measured by DXA method (Prodigy, GEHC Lunar, Madison, WI, USA) and PA spine TBS were assessed by TBS iNsight® software package installed on our DXA machine (Med-Imaps, Pessac, France). We have observed a non-significant decrease of TBS in ageing women with rheumatoid arthritis (F=2.09; p=0.11). TBS values of women with rheumatoid arthritis were significantly lower than those of healthy women of the corresponding age groups. Significant difference in TBS as a function of BMD WHO criteria were also observed (F=4.43; p=0.02). In conclusion, according to the TBS values, the bone status of women with rheumatoid arthritis was much lower than that of healthy women. TBS of women with rheumatoid arthritis decreased with ageing but in our sample without reaching the significance while when using BMD WHO categories TBS values were significantly different.

**Abstract no.: 34741**

**GENDER DIFFERENCE ON SAGITTAL VERTEBRAL INCLINATION AND SPINO-PELVIC ALIGNMENT IN ASYMPTOMATIC CHINESE ADOLESCENCES**

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Sex-related prevalence ratio has been documented in spinal disorders like adolescent idiopathic scoliosis (AIS) and Scheuermann's disease. Spino-pelvic alignment has been thought in contributing to the sex-related prevalence ratio of curve progression in AIS and identified with gender difference in asymptomatic adults. Since significant curve progression of AIS occurred during pubertal stage, a case-control study was done to clarify whether the gender differences in spino-pelvic alignment occurred during pubertal stage. Upright standing lateral digital radiographs of the spine of 117 female and 123 male teenagers (5-20 yrs) were analyzed. The inclination of each vertebrae were measured by Surgimap Spine. In addition, thoracic kyphosis, lumbar lordosis, pelvic incidence, pelvic tilt, sacral slope and spino-sacral angle (SSA) were quantified. Subjects were sub-grouped by Risser grade then comparisons were made between male and female by Students' t test. The level of significance was defined by  $p \leq 0.05$ . The males and females subjects showed comparable age, thoracic, lumbar and spino-pelvic morphology. In subjects with Risser grade 0, male and female showed no difference in the vertebral inclination and sagittal spinal inclination. In contrast, in those with Risser grade  $\geq 1$ , female showed less ventral inclination in upper thoracic vertebrae and more dorsally inclination of thoracolumbar vertebrae. The differences were significant at T1 and T11-L1 ( $p < 0.05$ ). Moreover, female adolescences showed significantly larger SSA than male adolescences ( $131^\circ$  VS  $128^\circ$ ,  $p < 0.05$ ). These findings indicated that female adolescents might suffer higher rotational instability of spine than males and might contribute to sex-related prevalence ratio of AIS.

**Abstract no.: 34744**

**IS THE HIP FRACTURE MORTALITY INFLUENCED BY THE TIME OF ADMISSION IN REHABILITATION CENTER?**

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**Introduction** After hip replacement procedures, patients require some form of rehabilitation. The primary goal of a rehabilitation program after hip fracture is to reduce disability and maximize function to allow the person to return to their prior activity level. It is well known that patients with hip fractures are common old, with several comorbidities and with high mortality rate in first postoperative year. **aim** To determine if time of admission in rehabilitation center have influence on mortality in patients with hip fracture who underwent hemiarthroplasty. **Methods** In the period from 2009-2011 we followed 73 female patients with hip fracture who underwent hip hemiarthroplasty. 41 patients were discharged to the rehabilitation unit direct from the surgery department and 32 patients were admitted to the rehabilitation unit not earlier than one month after discharging to the home. One year after surgery we evaluated mortality rate. **Results** The mean age was 72,2 (54- 88). All patients were females and had cardiovascular disorders. The mortality rate was significant higher ( $p < 0,05$ ) in patients who were discharged direct to the rehabilitation unit (18%), comparing to the group with delayed rehabilitation (11%). Also the rehospitalisation rate were significant higher in the first group ( $p < 0,05$ ). **Conclusion** All patients with hip fracture will benefit from some type of rehabilitative services, in order to achieve preinjury functional status. But our study showed that delayed admission to the rehabilitation center is associated with lower mortality rate. This can be explained by better functioning and positive impact of home conditions on the recovery

**Abstract no.: 34746**

**5-YEAR SURVIVAL RATE IN JAPANESE SENILE PATIENTS WITH PROXIMAL HIP FRACTURE: CORRELATION BETWEEN GAIT FUNCTION FOLLOWING OPERATION AND POSTOPERATIVE SURVIVAL TIME**

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Introduction: We investigated elderly patients with proximal hip fractures to analyze factors concerned with postoperative survival time. Methods: The subjects were 375 out of 456 cases, operated on at age 60, in the period between 2000 to 2005 (with a follow-up rate of 82.2%). We estimated whether patients could walk with a walker, based on eight degrees of walking ability set in Japan for the elderly and the disabled (Degrees of Independent Living). Results: The 1-year survival rate was 80.0% with a 5-year survival rate of 42.1% for all cases. The survival rate significantly deteriorated for those patients who were unable to walk even with a walker ( $P < 0.01$ ). Among 339 living patients who were from our hospital, the average survival time was 2,215.0 days for those cases with walking ability at J2 (second level from the top) at the time of hospital discharge; 2,065.0 days at A1 (third level); 1,559.3 days at A2 (fourth level); 1,389.3 days at B1 (fifth level); 1,352.2 days at B2 (sixth level); 934.9 days at C1 (seventh level); and 388.8 days at C2 (lowest level). The correlation between walking ability and survival rate was analyzed by converting ability levels into class levels (changing J2 to 7, C2 to 1, etc.). A significant positive correlation was observed between the class values of walking ability and the days of survival ( $R = 0.42$ ). Conclusions: Postoperative survival time was found to be strongly affected by the amelioration of gait function.

**Abstract no.: 34754**

**NEW SURGICAL TECHNIQUES OF COCCYGECTOMY**

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Introduction: coccygectomy is the most popular method of operative treatment for patients with chronic intractable coccygodynia. Postoperative infection, haematoma and seroma are well known complications after coccygectomy. The authors propose two new surgical techniques of coccygectomy for prevention of these complications. Methods: From June 2010 to February 2013, 10 patients with chronic resistant coccygodynia were operated in our neurosurgical departments with two new surgical techniques of coccygectomy. The coccygectomy was performed by arcuate incision above sacrococcygeal joint. The coccyx was extract from base to apex. We used the “two-layer” muscular plastics in 6 cases for close the residual recto-coccygeal cavity after coccygectomy, and we used the “inturn” muscular suture in 4 cases for this purpose. Results: We had no complications associating with proposed surgical techniques. Both surgical techniques afford not only close residual recto-coccygeal cavity after coccygectomy, but also to restore the fixation points cut of the coccyx muscles and ligaments for prevention of complications after coccygectomy.



**Abstract no.: 34757**

**REVISION SURGERY POST ACL RECONSTRUCTION**

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Interuduction: ACL reconstruction is a popular surgery among sportspopultion with generally satisfactory results. In Hamad General Hospital 24 revision surgeries post ACL reconstructions were recorded by the authors team. Methods: Retrospective study. Patients records who underwent a secund surgery post ACI reconstruction were stuied. Secund surgeries were done in 24 patients. Results: Causes of secund surgeries were reviewud. Of these 24 cases 16 were related to the tibial fixation. Copnclusion: More efforts needed to reduce tibial fixation related complications.

**Abstract no.: 34759**

**MANAGEMENT OF DOG BITE WITH UNDERLYING OPEN FRACTURE IN LOWER EXTRIMITY: AN UNUSUAL PRESENTATION**

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Introduction: Fractures associated with dog bites are a rare presentation. No case reported in literature of lower extremity fracture associated with dog bite. These fractures are the most severe because there are associated wounds from the dog's teeth harboring bacteria from oral flora, making it high grade open fracture and also associated risk of rabies virus transmission. We wanted to discuss a rare case of compound distal third tibia and fibula fracture associated with Grade III Dog bite. Case: 70 yr old female sustained dog bite on left leg associated with compound fracture of distal third tibia and fibula at the same level. The dog bite was grade III according to WHO guideline for animal bites indicating severe exposure. There was around 3 centimeter wound around fracture site and multiple puncture wounds all from bite. The dog bite wound was managed according to WHO guidelines for rabies prophylaxis and management. Now the dilemma was how to treat the associated fracture as no clear cut guidelines available whether is safe to perform open reduction or not and how much we should wait to avoid risk of rabies transmission due to surgical wound. We applied ankle spanning external fixator to leg after achieving acceptable alignment and put percutaneous rush nail in distal fibula. Toe touch wt bearing started once pt comfortable and gradually increased once evidence of healing on x rays. At the end of three months external fixator removed and PTB given with full wt bearing for 4 weeks.

**Abstract no.: 34763**

**DENTAL PULP STEM CELLS SEEDED ON MODIFIED  
POLYCAPROLACTONE SCAFFOLDS PROMOTES OSTEOGENIC  
DIFFERENTIATION IN VITRO**

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Introduction: Dental pulp cells (DPSCs) have been hypothesized as an alternative source of stem cells for bone tissue engineering. The aim was to determine their efficacy on three different polycaprolactone (PCL) scaffolds. Methods: PCL was plotted into a three-dimensional grid structure (PCL scaffold). A modified scaffold was created by infusing the pure PCL scaffold with hyaluronic acid + TCP followed by lyophilization to create a microporous hydrophilic coating (HT-PCL scaffold). Another scaffold was developed by infusing a homogenous mixture of PCL, water and 1,4-dioxane and afterwards perform a thermal induced phase separation (TIPS) followed by lyophilization. This NSP-PCL scaffold was structurally graded with micro- and nanopores. A total of 132 scaffolds (Ø=10mm, h=5mm) were used. DPSCs were cultured using proliferation medium for 7 days and thereafter osteogenic medium. After day 1, 7, 14 and 21, 10 scaffolds were collected for further analysis. Following analyses were performed to validate cell viability: Scaffold cellularity by quantifying the amount of dsDNA, ALP activity, live/dead staining (confocal microscopy), histology, SEM, RNA extraction and RT-PCR (GAPDH, Ubiquitin, ALP, Collagen type I, BMP-2, Runx2 and bone sialoprotein /osteocalcin). Results: The HT-PCL and NSP-PCL scaffold promoted osteogenic differentiation compared with pure PCL scaffold. Cell proliferation and migration into the scaffold was best facilitated on the HT-PCL scaffold compared to both the pure PCL scaffold and the NSP-PCL scaffold, making this a promising scaffold for further in vivo studies.

**Abstract no.: 34765**

**VALIDATION OF TRANSEPICONDYLAR AXIS AS AN ACCURATE MEASURE FOR FEMORAL COMPONENT ROTATION IN TOTAL KNEE ARTHROPLASTY**

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Purpose – To validate accuracy of transepicondylar axis as a reference for femoral component rotation in primary total knee arthroplasty. Methods – A prospective study done from dec 2010 to dec 2011 at tertiary centre. 80 knees were included ( 43 females and 21 males ). All surgeries were carried out by one senior arthroplasty surgeon. All patients undergoing primary total knee replacement were included and all revision cases were excluded. Intraoperative assessment of TEA was done by palpating most prominent point on lateral epicondyle and sulcus on medial epicondyle and passing a k wire through it. Confirmation is done under image intensifier C arm with epicondylar view. Postoperative TEA was assessed by taking CT scan, measuring condylar twist angle and posterior condylar angle. Also correlation of femoral component rotation with postoperative anterior knee pain was assessed. Results – The mean PCA was around 4° with TEA as reference and only 10% patients required an additional lateral release of which 2% patient had preop patellar maltracking. No postoperative patellar maltracking was seen. Anterior knee pain was present in 8% patients. No postop infection is noted. Alignment ranging from 3° to 9° external rotation. Conclusion – TEA is most accurate reference for femoral component rotation even in severely deformed arthritic knees.

**Abstract no.: 34771**

**A PROSPECTIVE STUDY OF INTRAOPERATIVE ACCURACY OF ANKLE JOINT INJECTION.**

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Introduction: Blind intra-articular injections (IAI) of various joints are used diagnostically and therapeutically in sport medicine, rheumatology, general practice and orthopaedics. Injections are carried out by palpation, the accuracy of which is determined indirectly by improvement in clinical symptoms. The gold standard for any joint injection is image guidance. The objective of this study was to evaluate the intraoperative accuracy of blind ankle IAI. Methods: 78 consecutive patients undergoing ankle arthroscopy over a five month period were included in the study. All ankle joints were insufflated with 10ml of physiological saline by principal surgeon (JM) prior to arthroscopy. A positive result was documented by a back flow of saline when the joint capsule was breached. Results: There were a total of 78 patients. There were 60 male and eighteen female patients. Mean age was 35 years. Overall 64% of ankle joint injections were intra-articular and 36% extra-articular. Conclusion: This paper clearly shows that blind ankle IAI is not accurate as approximately 1/3 of the injections were Extra-articular. We conclude that all ankle injection, in particular diagnostic but also therapeutic should be done under image guidance.

**Abstract no.: 34778**

**MANAGEMENT OF DEGENERATIVE TEARS OF TENDOACHILLES BY AUGMENTED REPAIR USING PERONEUS BREVIS TENDON: EARLY RESULTS**

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Reconstruction of degenerated ruptures of the tendoachilles is a challenge. Ruptured tendons are not only apart but also the remaining tendon ends are abnormal of which some part has to be excised. A number of methods have been described in literature to bridge the gap and reconstruct the tendoachilles with variable results. We have used peroneus brevis tendon in 20 such patients to augment the repair of degenerated tendoachilles tears by creating a dynamic loop as described by Teuffer et al. All the patients were followed up for atleast 18 months. With respect to the ability to toe raise 18 out of 20 patients were able to do it. With respect to subjective criteria using modified Rupp scoring, 85 % patients had excellent or good results and 15% had fair or poor results. Advantages offered by this procedure is usage of a single incision along with a mini incision and logical advantage of using a dispensable tendon like peroneus brevis without entirely depending on the pathological tendon for healing.

**Abstract no.: 34781**

**VERTEBROBASILAR STROKE FOLLOWING CERVICAL DISC ARTHROPLASTY**

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Introduction: Vascular complications associated with the anterior approach to the cervical spine are rare. Reported complications include intraoperative direct trauma, compression due to hyperextension or rotation of the neck and traction of the vertebral or carotid arteries. To our knowledge we describe the first reported case of vertebrobasillar stroke following Cervical Disc Arthroplasty (CDA). Materials and Methods: A 60-year-old presented with right arm radiculopathy. MRI revealed bilateral foraminal stenosis and cord compression at C4/5, C5/6 and C6/7. She underwent anterior cervical decompression and CDA at these levels. Surgery and anaesthetic were uneventful. Postoperative examination revealed left sided weakness, dysdiadochokinesia and photophobia. Results: MRI scan of the brain revealed a large left inferior cerebellar signal abnormality indicating a cerebellar infarct or ischaemia. Subsequent MRI angiogram and carotid doppler confirmed no abnormality, occlusion or compression of the vertebral or carotid arteries and a patent Circle of Willis. The patient underwent rehabilitation on a stroke ward and was discharged 12 days postoperatively. Now eighteen months postoperative she only has residual balance problems but mobilizes independently with one stick. Conclusion: Despite extensive investigation the cause of the patient's stroke remains unexplained. The lack of a structural injury or occlusion of the vertebral arteries suggests there may have been a temporary lack of vertebrobasilar blood flow. This may have been due to an unrecognised intraoperative hypotensive or malpositioning of the neck. We stress the importance of thorough knowledge of vertebral artery anatomy and careful position of the patient and retractors to avoid vertebral artery complications.

**Abstract no.: 34783**

**EXPERIENCE OF VERTEBROPLASTY IN PATIENTS WITH VERTEBRAL HEMANGIOMAS COMPLICATED WITH SPINAL STENOSIS AND NEUROLOGICAL IMPAIRMENT.**

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Introduction: Vertebroplasty is an effective method for treatment of severe back pain, caused by osteoporotic compression fractures, vertebral hemangiomas and other osteolytic spinal lesions. However, the sphere of application of this method of treatment is limited. The combination of neurological impairment caused by spinal cord compression and tumour spinal stenosis are relative contraindications for vertebroplasty. There is a high risk of extravertebral leakages of bone cement into the spinal or radicular canals with worsening of neurological status in these cases. Purpose: To investigate the feasibility and results of vertebroplasty in patients with aggressive vertebral hemangiomas complicated with spinal stenosis and neurological impairment. Methods: 5 patients with aggressive symptomatic vertebral hemangiomas complicated with spinal stenosis and spinal cord compression were operated on using vertebroplasty in our center. All operations were consisted in carrying the vertebroplasty of vertebral body and posterior vertebral structures as the first stage and decompression of neural structures as the second stage. In 3 cases the transpedicular fixation was applied. Results: The reduction of pain syndrome was achieved in all cases. The regression of neurological impairment by 1 grade of the Frankel scale was achieved in 4 patients. The volume of intraoperative hemorrhage was moderate. Discussion: We believe that the use of vertebroplasty from open approach before the decompression during the operation is reduce the risk of damage neural structures, allows the performing vertebroplasty of vertebral body and posterior vertebral structures correctly to minimize intraoperative blood loss in patients suffering from aggressive vertebral hemangiomas complicated spinal cord compression.



**Abstract no.: 34790**

**CLINICAL OUTCOMES OF DIRECT OR INDIRECT DECOMPRESSION WITH SILICONE OR PEEK INTERSPINOUS IMPLANTS**

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Introduction: Foraminal and spinal canal stenosis causes neurogenic claudication. Interspinous devices provide an indirect decompression by distracting the involved vertebrae thereby tightening the buckled flavum and opening the foraminae. When used for indirect decompression alone they avoid scar tissue formation in the canal should revision surgery be required. The DIAM™ (Medtronic, USA) made of silicone conforms to the interspinous space whereas the InSWing™ (Orthofix, USA) made of PEEK (Polyether Ether Ketone) is non-compressible. We report the outcomes between these devices and between direct and indirect decompressions in our institution. Methods: Retrospective analysis performed for surgery July 2009 - 2011. Paired and unpaired t-test used to assess statistical significance ( $p < 0.05$ ). Results: 60 patients (22 females, 38 males). Age 46 (21 – 78) years. Pre-operative symptom duration: 65 (4-420) months. 89 implants: 68 DIAM™ (43 patients), 21 InSWing™ (17 patients). 16 indirect, 28 direct and 16 combined procedures. Average follow-up 47 weeks. Statistically significant improvement in all outcome measures in direct and InSWing™ groups. DIAM™ group showed statistically significant improvements in all outcomes except MCS which improved but not with statistical significance. The indirect group improved in all outcomes but these were only significant in VAS Back and Leg scores. The InSWing™ and direct groups scores improved more than DIAM™ and indirect groups respectively. Conclusion: Statistically significant improvement was seen in all outcome measures in patients undergoing direct decompressions or implantation PEEK interspinous implant. Improvement in scores was greater in these groups compared to the indirect decompression or silicone implant groups.

**Abstract no.: 34798**

**A STUDY TO EVALUATE THE MANAGEMENT OF PATIENTS WITH  
FLOATING HIP**

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The term 'Floating hip' is used for patients suffering from ipsilateral femur and pelvi-acetabular fractures at the same time. This study was conducted to assess the course, treatment pattern and the outcomes of such patients. All such patients managed from Jan 2008-Jan 2012 were included. Their injury pattern, timing and method of fixation, complications and final outcome after a minimum follow-up of one year were analysed. There were 43 cases out of which records of 39 cases could be reviewed. The average period of follow-up was 25 months (14-56 mths). All the patients were males with an average age of 27.2 years (22-46 years). 21 cases had associated acetabular fracture while 18 cases had pelvic ring fracture at both the ends. Femur was always fixed in the first setting if multiple operations were required. Complications included heterotopic ossification in 14% cases, infection in 8% cases and nerve palsy in 5% cases. Floating hips are severe injuries and require specific attention in regards to the timing, sequence and the choice of implant in the surgery.

**Abstract no.: 34800**

**MANAGEMENT OF OSTEOCLASTOMA OF DISTAL RADIUS BY ENBLOC EXCISION AND AUTOGENOUS FIBULAR RECONSTRUCTION**

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Introduction: Osteoclastoma represents 5 – 10 % of primary bone tumours. It's aggressive at the distal radius, the 3rd most common site after distal femur and proximal tibia .The treatment remains controversial due to high recurrence rate. Material and methods: 6 cases with complaints of swelling near wrist with progressively increasing pain since 6 months were evaluated. On examination swellings were irreducible with ill defined margins with no fixity to skin and wrist movements limitation .On x –ray eccentrically located lesion at distal radius with intra – articular extension and soap bubble appearance noted (campanacci grade III).Histopathological examination on trocar guided aspiration showed dimorphic cells (spindle and giant cells).All these findings suggesting a osteoclastoma of distal radius. Management: En bloc excision of distal radius and reconstruction with autogenous non-vascularised fibular graft with DCP fixation and radio –fibular stabilization by k-wire in required cases. Biopsy showed characteristic many multinucleated giant cells in sea of mononuclear stromal cells –diagnostic of osteoclastoma. Follow –up: All patients were followed for a period of 2 years with no signs of recurrence. On serial x-rays union was seen in about 14 -24 weeks with mean grip strength about 74 %( 52 – 88%) with good range of wrist movements. Overall revised musculoskeletal tumour society (MSTS) score averaged 86% with no graft related complications. Conclusion: Thus aggressive giant cell tumour of distal radius managed with Enbloc excision and autogenous fibular reconstruction shows successful results with no signs of recurrence and adequate wrist joint movements.

**Abstract no.: 34801**

**CURATIVE EFFECT ANALYSIS ON LATARJET PROCEDURE IN TREATMENT OF PATIENTS OF RECURRENT ANTERIOR DISLOCATION OF SHOULDER WITH SEVERE BONE DEFECTS WITH 3-5 YEARS FOLLOW-UP**

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Introduction: To retrospectively evaluate the 3-5 years' follow-up result of the Latarjet procedure for the treatment of recurrent anterior dislocation of the shoulder associated with severe bony defect . Methods: 37 patients (37 shoulders) including 23 men and 14 women underwent the Latarjet procedure for anterior glenohumeral instability between April 2006 and October 2009. All shoulders had severe osseous deficiency of the anterior glenoid rim, which was more than 25% of the glenoid width according to 3D CT scan and under arthroscopic approach. 21 were treated with parallel coracoid transposition bone block type and 16 were with intorted coracoid transposition method. The American Shoulder and Elbow Surgeons Assessment(ASES) , the Constant-Murley Score were used to evaluate before and after operation . Results: The follow-up period was a mean 48.3 months. All patients got bony union except a non-union in the intorted group according to the 3D CT scan taken at 6 months' follow-up. For the parallel transposition group, ASES score improved from  $80.7\pm 16.7$  to  $92.2\pm 6.4$  (  $P<0.05$  ) , Constant-Murley score from  $78.6\pm 10.1$  to  $91.6\pm 3.2$  (  $P<0.05$  ) . While for the intorted transposition group, ASES score improved from  $81.4\pm 14.7$  to  $92.4\pm 7.0$  (  $P<0.05$  ) ,Constant-Murley score from  $80.2\pm 12.6$  to  $92.8\pm 5.1$  (  $P<0.05$  ) , one patient had a residual positive Apprehension sign postoperatively. Conclusion: The Latarjet procedure is an effective procedure with lower redislocation rate for most patients with recurrent anterior dislocation of the shoulder associated with severe glenoid bony defect. And the parallel coracoid transposition group with more contact area and more stable fixation strength got higher union rate than the coracoid intorted group .

**Abstract no.: 34803**

**IDIOPATHIC SCOLIOSIS (IS) CLINICAL ORTHOPEDIC DIAGNOSIS  
CREATION ALGORITHM**

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Purpose: The purpose of this research was to study IS manifestation clinical and radiological criteria as orthopedic pathology to define clinical diagnosis algorithm and structure. Methods: Symptoms, signs and characteristics of developing spine deformity were studied and classified on three groups. The signs illustrating pathology as structural defeat process were united in the first or main group. The second or additional group included data reflecting deformity localization, its expressiveness parameters and secondary changes. The third or accompanying group included the signs which are negatively influenced dynamics of independent deformity development. Results: On the basis of the developed classification the IS clinical orthopedic diagnosis algorithm was defined. According to diagnosis classical representations it consists of an etiological, pathogenetic, anatomy-morphological and functional component with the relevant data and parameters which reflect spine deformity development dynamics taking into account carried-out treatment and its productivity. The special place in the diagnosis formulation is allocated for the radiological information which reflects objectively deformity expression and measured pathological arches parameters with the obligatory indicating of radial inspection date. Conclusion: Application of this algorithm allows unifying and standardizing orthopedic clinical-radiological diagnostics at IS.

**Abstract no.: 34806**

**CONUS MEDULLARIS SYNDROME AFTER SEIZURE INDUCED DORSO-LUMBAR BURST FRACTURE**

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Introduction: Epilepsy-induced spine injuries are commonly compression fractures of mid-thoracic region. We describe a non-traumatic burst fracture of dorsolumbar junction due to seizure; along with its etiology, management and literature review. Case: A 45-year-old male presented to the emergency after multiple episodes of GTC seizures while sleeping. Patient has had a head trauma 3 years ago and had been under anti-epileptic drugs (AEDs) since then. After the post-ictal disorientation improved, patient complained of mild back pain. 7 days later he developed bowel-bladder involvement and up-going plantar reflex. Investigations showed a burst fracture of body of L1 and inferior tip fracture of D12 body with cord compression. Decompression and fixation was done by posterior approach with L1 laminectomy, pedicular screws in D11, D12, L2 and L3 and cage between D12-L1. At present, patient is seven months post-op and is doing well. Discussion Conclusion: All seizure-induced spine fractures are not the same. There is a distinction between less-violent asymptomatic mid-thoracic compression fractures, and more violent thoraco-lumbar burst fractures, which often present with back pain and neurological deficits. While the first group can be managed conservatively, burst fracture cases (such as our patient) generally require surgical decompression and fixation. Awareness regarding poor bone health and increased fracture risk due to AEDs needs to be stressed upon. We also advise critical examination and imaging in form of CT or MRI when a patient presents with back pain following seizure, as plain radiographs have a 25% false negative rate regarding the presence of burst fracture.

**Abstract no.: 34811**

**MALUNION, CARPAL TUNNEL SYNDROME, CARPAL INSTABILITY AND ATTRITIONAL RUPTURE OF FLEXOR TENDONS AFTER DORSAL PLATING OF DISTAL RADIUS – A CASE REPORT**

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**Introduction:** We present an unusual case of Malunion, carpal tunnel syndrome, carpal instability and attritional rupture of flexor tendons after nine years of dorsal plating of distal radius fracture. **Case report:**The patient presented with insidious onset of progressive loss of finger movements and hand strength with parasthesia following surgery done nine years earlier. Radiographs showed malunited distal radius with a dorsal plate and proud screw tips on the volar side. There was gross dorsal angulation and carpal instability of adaptive variety. On exploration, the median nerve was compressed and all the flexor tendons with the exception of the thumb were discontinuous. A fibrous bridge of adhesions ensured minimal excursion of the tendons. Prominent screw tips were observed at the base of this fibrous mass. The implant was removed and a corrective osteotomy with volar locked plate was done along with flexor tendon reconstruction with fascia lata graft. **Results:**At 3 months follow up the patient had returned back to his occupation with satisfactory restoration of interphalangeal joint movements. **Discussion:**This is an unusual presentation of attritional tendon rupture after nine years of surgery. The incidences of flexor tendon rupture are exceptionally rare and following dorsal plating have not been reported earlier. Based on the history and clinical findings and per-operative observation we believe that the prominent screw must have resulted in this unusual complication. The patient also had compression of median nerve and an adaptive carpal instability which added to the overall morbidity.

**Abstract no.: 34813**

**SURGICAL OUTCOMES OF SPINAL FUSION USING SEMI-RIGID INSTRUMENTATION**

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Objective: Lumbar spinal fusion using instrumentation for degenerative spinal disorders seems to increase the fusion rate. However, rigid instrumentation may be associated with undesirable effects, such as fracture of the vertebral body and adjacent segment degeneration. The main purpose of this study was to examine short-term results using semi-rigid instrumentation for elderly patients with lumbar spinal stenosis. Method: We examined eight patients (2 males, 6 females) who underwent lumbar posterior spinal fusion using semi-rigid instrumentation. Mean age was 68.9 (60-76) years old. Follow-up periods ranged from 8 to 34 months. Two patients with lumbar spinal stenosis and six patients with degenerative spondylolisthesis were included. Segmental range of motion (ROM), degeneration of adjacent intervertebral discs, and instrumentation failure were assessed with preoperative and the final follow-up radiographs. Results: Mean ROM at the semi-rigid level was 3.8 (2-6) degrees at the final follow-up visit. There were no adjacent vertebral fractures and aggravation of degenerative change of intervertebral discs at the final follow-up. In only one patient, screw-halo was detected. No revision surgery was performed. Conclusion: Rigid instrumentation is very useful for young patients but implant loosening is often detected in osteoporotic spinal fusions. Semi-rigid instrumentation may reduce the risk of adjacent segment fractures of the vertebral body and adjacent segment degeneration by the absorption of the stress on upper instrumented vertebrae or adjacent vertebrae.



**Abstract no.: 34814**

**ONE-STAGE MANAGEMENT OF BONY AND LIGAMENTOUS COMPONENTS TO TREAT MASON-JOHNSTONIV RADIAL HEAD FRACTURES**

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Introduction : To evaluate the clinical outcomes of one-stage management of bony and ligamentous components to treat Mason-JohnstonIV radial head fractures. Methods : From August 2007 to November 2011, 16 patients with Mason-JohnstonIV radial head fractures were treated by ORIF combined with repair of ruptured capsule and ligaments with suture anchors in my ward. Injury was caused by falling in 10 cases and by traffic accidents in 6 cases , There were 9 partial intra-articular fractures with 2-3 fragments treated with AO 1.5mm or 2.0mm mini-screws and 7 complete intra-articular fractures with 2-4 fragments treated with 2.0mm mini-plate. Active and active-assisted motion was encouraged to start the day after surgery. VAS and Broberg-Morrey score were adopted to evaluate the function of elbow joint. Results : The patients were followed up for an average of 22.6 months(range,12-38 months) All fractures achieved bony union without complication. 10 patients had the ossification in the medial and lateral collateral ligament attachment without clinical symptom. According to the Broberg-Morrey score, there were 89% acceptable (excellent or good) rate in partial intra-articular fractures group. In complete intra-articular fractures group , there were 71.5% acceptable rate.The ROM, Broberg-Morrey score and VAS score in partial intra-articular fractures group were obviously better than that in complete intra-articular fractures group ( $P < 0 .05$ ). Conclusions : One-stage management of bony and ligamentous components to treat Mason-JohnstonIV radial head fractures can provide three-dimensional stabilisation to elbow joint timely in favour of early active and active-assisted motion in order to decrease the complications rate postoperatively

**Abstract no.: 34815**

**SEVERE SPINAL OSTEOPOROSIS WITH MULTIPLE VEREBRAL FRACTURES AND KYPHOSIS POST PREGNANCY – A CASE REPORT**

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**ABSTRACT:** Osteoporosis associated with pregnancy and lactation is a less commonly known scenario in our country. The prevalence, exact aetiology and its pathogenesis are unknown. We report a case of 24 year old female 4 months after pregnancy with severe back pain and difficulty on sitting or standing since 2 months. Radiographs and MRI showed multiple vertebral compression fractures. However her metabolic workup was normal. DEXA scan revealed severe Osteoporosis of Dorso Lumbar spine. She was treated with TERIPARETIDE therapy, and at 6 months on treatment with teriparatide there was solid increase of bone mineral density and sustained pain reduction was observed. Our aim is to report the case of severe spinal osteoporosis with multiple vertebral fractures post pregnancy in a lactating female who presented with severe back pain with inability to sit or stand in Lactating phase and also to highlight the diagnostic challenge in such cases with emphasis on the role of medical management

**Abstract no.: 34819**

**CHALLENGES IN RESTORING GLOBAL STABILITY IN ADVANCED TUBERCULOSIS OF THE LUMBOSACRAL JUNCTION – A CONCEPTUAL ANALYSIS.**

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Tuberculosis of the lumbosacral junction is rare (2-3%). Early cases with lesser destruction of vertebrae can be managed successfully with conservative management. Advanced tuberculosis with extensive destruction of the lumbosacral junction results in a kyphosis or a hypolordosis in 53.8% cases, resulting in a higher incidence of back pain and difficulties during child birth. The main goal in treating lumbosacral tuberculosis is to restore or preserve a normal lumbosacral angle and global sagittal stability. Instrumentation at the lumbosacral junction is technically demanding due to the complex local anatomy, the unique biomechanics, and difficult fixation in the surrounding diseased bone. We have successfully managed a 19 year girl with extensive tuberculosis from L2 to S2 with pain and spinal instability, with spinopelvic stabilization and anterior debridement and fusion using fibular strut graft. Fusion analysis at 5 years using multiplanar tomography showed excellent graft incorporation and fusion. Anterior column reconstruction with a strut graft lessens and prevents the progression of kyphosis and helps in restoring a near normal lumbosacral angle and the normal lumbosacral biomechanics. Posterior instrumented stabilization augments the spinal stability and increases the compressive forces across the strut graft preventing graft slippage and accelerating graft incorporation and fusion. In L5-S1 tuberculous spondylodiscitis with extensive destruction of sacral promontary with disease free ala, sagittal stability can be restored by spinopelvic stabilization using alar screws with supplemental iliac screws. The use of S2 screws for posterior stabilization does not add much to the strength of the construct for biomechanical reasons. Spinopelvic stabilization is biomechanically stable and is a necessity in managing advanced tuberculosis of the lumbosacral spine.

**Abstract no.: 34826**

**MOTION OF SINGLE LEVEL CERVICAL DISC ARTHROPLASTY IMPLANTS AT GREATER THAN ONE YEAR FOLLOW-UP**

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**Introduction:** Cervical fusion is currently the gold standard treatment for degenerative cervical disc disease. The loss of motion at the fused level alters the biomechanics of the cervical spine with adjacent levels compensating for the loss of motion. This has been associated with the development of symptomatic adjacent segment disease. Cervical disc arthroplasty (CDA) is therefore emerging as an alternative to fusion in order to preserve motion and reduce the incidence of recurrence of symptomatic disease and need for revision surgery. **Methods:** Lateral flexion and extension radiographs were analysed for motion at the level of the disc arthroplasty using the Cobb angle. The difference between the Cobb angle in flexion and extension was taken. We classified any disc that had less than two degrees change in angle between flexion and extension radiographs to not be exhibiting motion. **Results:** Postoperative radiographs of 54 patients who had undergone anterior cervical decompression and cervical arthroplasty at one level with at least one years radiographic follow-up were reviewed. 80% (n=43) of discs maintained motion of greater than two degrees. Average follow-up in this group was 102 (range 52-234) weeks. In the group of 11 discs that exhibited less than two degrees motion average follow-up was 106 (range 52 – 259) weeks. Five of these discs had greater than two years follow-up. **Conclusion:** Our results show that cervical disc arthroplasty is a viable option for maintaining motion at the operated level in the cervical spine. Further analysis is required of motion at adjacent levels and longer-term follow-up.

**Abstract no.: 34828**

**ARTHROSCOPIC SUTURE FIXATION OF TIBIAL SPINE FRACTURES.**

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The use of absorbable suture fixation has been described for the treatment of tibial spine fractures. The disadvantages of using an open technique for tibial spine fixation have precluded the use of this open method. In this article, we present a simple arthroscopic method for tibial spine suture fixation. The suture was passed at the anterior cruciate ligament insertion, then pulled out through drilled tunnels and tied onto the anterior surface of the tibial metaphysis. By this new method, we can obtain the advantages of arthroscopic technique and suture fixation without any hardware. Absorbable suture fixation is effective for obtaining a secure fixation and achieves good clinical and functional mid-term results.

**【Key Words】** : arthroscopy, tibial spine, anterior cruciate ligament, fixation, suture

**Abstract no.: 34838**

**"CURRENT STATUS OF PHYSICALLY CHALLENGED IN INDIA:  
JABALPUR DISTRICT"**

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**BACKGROUND:** 2/3rd of world's 600 million Physically Challenged living in Asia Pacific Region. The Madhya Pradesh State Government of India launched 'Sparsh Abhiyan' to identify people with Physically Challenged on 1st May 2011. In this campaign; 3 Lac 51 thousands beneficiaries like Orthopedically Handicapped, mentally retarded, mentally ill, visually and hearing impaired were identified. **OBJECTIVES:** This 'Sparsh Abhiyan' Programme was to identify the detail status of Orthopedically Physically Challenged in Madhya Pradesh. **METHODS:** Disability camps were installed at all 327 development blocks of 50 districts in the Madhya Pradesh State. 36 Medical Camps were organized in Jabalpur district in Block, Tensile & Proper City level in the month of June & July 2011 & Follow up camps. A special District Medical Board was prepared with all speciality doctors with two Orthopaedic specialists. Comparison of this disability data was compared with the Global prevalence of disability especially with WHO references. **RESULTS:** 29 Thousands 350 were identified in Jabalpur district in which Orthopaedic Physically Challenged constitutes 74 % followed by eye problems & mental retardation and least of Speech & Hearing plus Multiple Disability. **CONCLUSIONS:** Orthopedically physically challenged persons are in the top of all disabilities. Still Post Polio Residual Paralysis constitutes one of the major causes for Orthopaedic Physically Challenged. CTEV is commonest Congenital Anomaly. Polydactyly with or without Syndactyly is not a common Congenital Anomaly in this district. Charm for handicap certificate was more observed in rural area as comparison to urban region.

**Abstract no.: 34839**

**THE DISPLACEMENT OF ANTERIOR WALL OF PROXIMAL FRAGMENT INTO MEDULLARY CAVITY SHOULD BE REDUCED TO PREVENT SLIDING OF PROXIMAL LAG-SCREW AFTER SURGERY OF INTERTROCHANTERIC FRACTURE**

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**Introduction:**It has been known widely that proximal lag-screw sometimes slide out after surgery of intertrochanteric femoral fracture using intertrochanteric nail. Recently, several authors reported the posterolateral wall of great trochanter have been comminuted in many cases and the contact of mutual bone fragments at anterior wall have been important for the stability of fixation. We researched the influence of repositioning at anterior side of fracture site on sliding of lag-screw and displacement after surgery.**Method:**We evaluated 49 patients (mean age 83 years) who underwent osteosynthesis using intertrochanteric nail, PFNA (Synthes). We classified patients to 3 groups, which were intramedullary group (IM), extramedullary group (EM) and anatomical group (AN) in relationship of anterior edge of proximal fragment and distal one, investigating roentgenogram at preoperative and postoperative periods. We quantified the amount of sliding of lag-screw in each group at last follow-up period and evaluated the relationships of the displaced type between preoperative and postoperative periods. **Result:**The mean amount of sliding at last follow-up period were  $6.8\pm 3.8\text{mm}$  (IM),  $3.6\pm 1.1\text{mm}$  (EM) and  $3.6\pm 2.6\text{mm}$  (AN). There were significant difference between IM group and other groups. The type of intramedullary at preoperative period tended to be intramedullary or anatomical types after surgery. **Conclusion:**The intramedullary reduction type is one of the risk factors of sliding of lag-screw after surgery. The intramedullary displacement detected at preoperative period should be reduced to anatomical or extramedullary at the operative period to prevent problematic displacement.

**Abstract no.: 34840**

**MANAGEMENT AND OUTCOME OF DISTAL TIBIA FRACTURES THROUGH MIPPO**

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Background: Injuries to the distal tibia produce more morbidity due to the variable involvement of the articular surface, soft tissue damage and the reduced blood supply to this region. With the recent increase in high velocity injuries, treatment of these have become demanding. Minimally invasive techniques offer fixation in the biological manner. We aim to see the results of the operative fixation of distal tibial fractures with locking compression plate (LCP) using minimally invasive percutaneous plate osteosynthesis (MIPPO). Patients and Methods: Twenty one consecutive patients were prospectively reviewed. Sixteen male and five female patients with a mean age of 49 years were included. All fractures under AO/OTA '43' classification were considered. Results: Mean time to union was 12 weeks. Eighteen fractures healed with good functional outcome. Two patients had delayed union which united at seven months. Two patients had ankle stiffness and two had skin impingement. The functional outcome of 19 patients at seven months was good and excellent. The remaining two were fair. Discussion: Final assessment was based on 'Tenny and Wiss' clinical assessment criteria. Distal tibial fractures treated with locking plates using MIPPO showed good results. Early mobilization helps to prevent stiffness and contracture. Keywords: distal tibia fractures, locking plates, minimally invasive, percutaneous.



**Abstract no.: 34843**

**MULTILEVEL CERVICAL DISC ARTHROPLASTY IMPLANT MOTION AT GREATER THAN ONE YEAR FOLLOW-UP**

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Introduction: Cervical fusion alters the biomechanics of the cervical spine with adjacent levels compensating for the lost motion. This has been associated with the development of symptomatic adjacent segment disease. Cervical disc arthroplasty is therefore an alternative to fusion in order to preserve motion and reduce the incidence of recurrence of symptomatic disease. Methods: Lateral flexion and extension radiographs were analysed for motion at the level of the disc arthroplasty using the posterior vertebral body angle. The difference between the posterior vertebral body angle in flexion and extension was taken. We classified any disc that had less than two degrees change in angle not to be exhibiting motion. Results: Postoperative radiographs of 100 patients (59 two level, 34 three level, 7 four level) who had undergone anterior cervical decompression and cervical arthroplasty at two, three or four levels with at least one years radiographic follow-up were reviewed. Radiographic data was available for 239 discs. 77% (n=185) of discs maintained motion of greater than two degrees. Average follow-up in this group was 94 (range 52-291) weeks. In the group of 54 discs that exhibited less than two degrees motion average follow-up was 110 (range 54 – 291) weeks. In seven two level constructs and in one three level construct all replaced levels showed less than two degrees of motion. Conclusion: Multilevel cervical disc arthroplasty provides a viable option for maintaining motion at operated levels beyond one year and therefore reduces the potential for symptomatic adjacent segment disease.

**Abstract no.: 34845**

**A NEW TECHNIQUE FOR HAMSTRING TENDON GRAFT HARVESTING**

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Harvesting of hamstring tendon is a very important step in anterior cruciate ligament reconstruction. Although there are many advantages for using the hamstring tendon for anterior cruciate ligament reconstruction, but there are many disadvantages of the traditional technique for hamstring tendon harvesting. That is why we have used a new technique trying to avoid all disadvantages and allow for fast, easy, and perfect hamstring tendon graft harvesting. The aim of our new technique for hamstring tendon harvesting is to avoid all complications and difficulties related to graft harvesting and keeping sartorial fascia in a good condition

**Abstract no.: 34847**

**A COMPARATIVE STUDY OF ULTRASOUND, MRI AND ARTHROSCOPY  
IN DIAGNOSIS OF INTERNAL DERANGEMENTS OF THE KNEE**

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**INTRODUCTION** Internal derangements of the knee is a common presenting clinical condition. As it comes in the way of daily activities and significantly affecting financial earning of the person and family, it is important to deal such cases with accurate diagnosis and early treatment. The clinical examination still stands as preliminary and gold standard, more reliable and cost effective way of diagnosing such knee problems. Hence this study is intended to determine the benefits of arthroscopy directly and also to compare the sensitivity and specificity of ultrasound, MRI and arthroscopy in diagnosing internal derangements of the knee. **METHODOLOGY** : This is a prospective study of 50 cases of internal derangement of knee admitted to Mamata General and Super Speciality Hospital between May 2011 and Jan 2012 who underwent ultrasound, MRI and arthroscopy of the knee. **RESULTS**: In our study of 50 cases. Ultrasound is less sensitive non invasive diagnostic compared to MRI. Although MRI found to be sensitive non-invasive diagnostic tool, it still has a high rate of false and misleading results. Arthroscopy correlates better with clinical findings and also had an additional advantage of therapeutic modality. **CONCLUSION**: The present study supports that the clinical diagnosis is of primary necessity. ultrasound and MRI are additional diagnostic tool for IDK. Arthroscopy combines more accurate diagnosing tool and therapeutic modality, which is more convenient, economical and convincing technique to both surgeon and patient alike.

**Abstract no.: 34849**

**MANAGEMENT OF CTEV BY PONSETI TECHNIQUE- OUR EXPERIENCE**

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Various methods are advocated for correction of CTEV still no single modality has achieved with functional, plantigrade, pain free foot without calluses. Ponseti method of clubfoot correction avoids open surgery in 89% in his cases. And many studies with this method have shown varying results. The objectives of the study were to assess the results in terms of the number of casts applied, need for tenotomy of tendoachilles and relapse and resistant cases. From June 2008 to July 2012 we treated 112 feet in 65 children (aged 3 days- 10 months) by ponseti method with mean follow up of 14 months (6-30 months). The standard protocol described by ponseti method was followed. The pirani score was used for assessment. Number of casts required was 4-10 (average 7 casts) and Tendoachilis Tenotomy was required in 74 of 112 feet before full correction. We achieved full correction in 82% of feet. On evaluation Poor compliance with foot abduction orthosis (Denis Browne splint) was measure cause of relapse (n= 12 feet) which needed repeat tenotomy and delayed presentation of patients with atypical foot was the cause for resistant cases (n=8). We conclude that ponseti method of correction is reliable method of correction in patients presented early with idiopathic CTEV.

**Abstract no.: 34854**

**EXPERIENCE OF USING REVERSE DISTAL FEMORAL LOCKING PLATE FOR THE TREATMENT OF UNSTABLE PROXIMAL FEMORAL FRACTURES**

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**Objectives:** We have evaluated the clinico-radiological results of reverse less distal femoral locking plate (DFLP) in patients with unstable intertrochanteric or subtrochanteric femoral fractures. **Materials & Methods:** We have included 30 patients (24 males, 6 females) with a mean age of 41.7 years (range 17-75 years). All these patients were operated and closed reduction and internal fixation was performed using reverse DFLP, after a mean duration of 8.9 days (range 3-21 days) from injury. Results were assessed radiologically and clinically. Radiographs were evaluated for reduction, union, cut-out of implant, mechanical failure of implant, etc. Clinically, patients were assessed for complications, harris hip score. The mean follow-up period was 9.6 months (range 6-12 months). **Results:** Mean operating time was 52.6 minutes (range 35-75 minutes). And mean blood loss was 275 ml (range 250-500 ml). Union was achieved in 26 patients. Reduction was good in 16 (53.33%), acceptable in 10 (33.33%) & poor in 4 (13.33%) patients. Intraoperatively, trochanteric fracture was seen in one patient. Postoperative complications included surgical site infection (n=2;6.67%), mechanical failure of implant (n=3; 33.33%), secondary varus (n=2;6.67%), DVT (n=5;16.67%), mortality (n=2; 6.67%). Second surgery was required in 2 patients. Mean harris hip score was 78.2, All above complications were seen elderly patients >60 years. **Conclusions:** Reverse distal femoral locking plate is a valid alternative for osteosynthesis of unstable intertrochanteric and subtrochanteric fractures. It also provides rapid fixation in polytraumatized patients. It should be used with caution in elderly patients with poor bone stock.

**Abstract no.: 34857**

**BIOMECHANICAL FUNCTION ASPECTS OF ANKLE JOINT-BASIS  
CHOICE OF METHOD FIXATION ALONG WITH SYNDESMOSIS INJURY.**

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Primary disablement along with ankle-joint elements injuries run to 7-12%. Our country has great background in treatment such pathology but coupling element parameters of ankle joint are understudied, that is made it difficult to choose clear guidelines as for indications one or another method of treatment, terms and method of fixation in case of operative measure. The aim of our research is defining movement in ankle-joint and optimum fixation element mode of ankle joint in case of injuries. The base of research consists of biomechanics study of ankle joint health in health and disease with the help of helix CT machine. Patients are: 81 men at the age of 20-45: 11-healthy, and 70-with injures of ankle – joint. We had made ankle joint computer scan in different flats and locations-full flection, extension and mid physiological; with and without exercise test. The research showed qualitative and quantitative correlation element indexes of ankle joint-distal metaepiphysis of shin-bone, lateral malleolus, ankle bone and tibiofibur syndesmosis. We defined and measured 3 movement types of calf bone toward shin bone: 1. Axial area: to 3 mm 2. Vertical displacement in sagital area to 6 mm 3. Rotative motion toward vertical axis of calf bone-5 ° and 7° while heave load. The research showed that movement in the syndesmosis area has definite laws and it is considered while choosing operative therapy methods, terms and methods of fixation immobilization and method of rehabilitation.

**Abstract no.: 34861**

**EARLY, ACTIVE REHABILITATION FOLLOWING TENSION BAND WIRING REPAIR TECHNIQUE OF ACHILLES TENDON RUPTURE**

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**Introduction:**The Achilles tendon is the most commonly injured tendon and is usually treated with surgery or with a cast, splint, brace, or other device that will keep the lower limb immobilized in equinus causing physical, psychological and economical distress. tension band technique overcomes these limitations allowing immediate full weight bearing mobilization. **Objective:** To assess the immediate weight bearing and supervised active rehabilitation program following repair of Achilles tendon ruptures using tension band wiring repair technique.**Methods:** We performed a prospective study on 32 patients undergoing surgical repair of Achilles tendon ruptures using the tension band wiring technique. All patients underwent supervised active rehabilitation program. Immediately post operative patient were allowed full weight bearing in a cast in neutral plantigrade position for six weeks. After six weeks cast removal, suture removal and implant (tension band wire and pin removal) was done.**Results:**At a minimum follow up of 12 months there were no re-ruptures. All patients were able to weight bear and return to their daily household and sedentary work within 7 days. All patients were allowed to do sports and strenuous activity by 12 weeks. One patient had a superficial wound infection which settled with 5 days of oral antibiotics. Two patients had pin tract infection which settled with antibiotics and dressing.**Conclusion:** The tension band wiring repair technique allows immediate post operative full weight bearing with biological tendon to bone healing at insertion site. safe early active rehabilitation program and achieves a high rate of success.

**Abstract no.: 34863**

**AN EVALUATION OF LEARNING CURVE FOR MICROENDOSCOPIC DISCECTOMY IN TWO DIFFERENT TRAINING ENVIRONMENTS**

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Objective: Micro Endoscopic Discectomy (MED) needs its specific maneuver. The objective is to evaluate the learning curve for MED between two different environments. Materials and Methods: We evaluated 41 Lumbar Disc Herniation (LDH) patients. The patients were divided into 2 groups by period of having surgical treatment. The surgeries of all patients were performed by one surgeon. The surgeries of Early Group (EG; 22 cases, June 2009-May 2010) were conducted under the supervision of a senior spine surgeon. Those of Late Group (LG; 19 cases, July 2010-Jan 2013) were conducted without supervisor. The operative time, the recovery rate of JOA score, the incidence of complications and the rate of recurrence in the two groups were noted. Results: The mean operative time were  $82.6 \pm 14.4$  (EG) and  $104.7 \pm 34.3$  minutes (LG). The recovery rate of JOA score were  $54.1 \pm 17.3$  (EG) and  $72.8 \pm 13.5\%$  (LG). There were no significant difference between the two groups in the mean operative time and the recovery rate of JOA score. However the learning curve of EG tended to be steeper than LG, clinical outcome of LG tended to be improved in compared with EG. Two complications including 1 dural laceration in EG and 1 nerve root injury in LG were observed. The numbers of recurrent cases were 3 (13.6%) in EG and 2 (10.5%) in LG. Conclusion: To make a learning curve of operative time steep, the surgeon had better experience surgery frequently in the short term with supervisor. From the period when a surgeon experienced around 20 cases, the clinical outcome and the incidence of complications get improved.



**Abstract no.: 34866**

**DOES FEMORAL TUNNEL POSITION IN ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION INFLUENCE THE OUTCOME?**

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**Introduction:** There has been a lot of focus on the value of anatomic tunnel placement in ACL reconstruction, and the relative merits of single and double bundle grafts. Multiple cadaveric and animal studies have compared the effects of tunnel placement and graft type on knee biomechanics. The aim of this study was two-fold: establish the effectiveness of a single bundle ACL reconstruction technique in achieving anatomic femoral tunnel placement, and investigate a possible correlation between functional outcome and femoral tunnel position. **Methods:** All patients underwent four strand hamstring graft single bundle ACL reconstruction, by a single surgeon, using antero-medial portal to drill the femoral tunnel as described by Pinczewski et al., which allowed more flexibility in placement of the femoral tunnel. **Results:** Femoral tunnel position after ACL reconstruction in 45 patients was analysed by two independent doctors using the radiographic quadrant method as described by Bernard et al., and the mean values calculated. Forty-one of these patients undertook a KOOS questionnaire. The mean ratio 'a' was 26.57% and mean ratio 'b' was 30.04% as compared to 24.8% (+/- 2.2%) and 28.5% (+/- 2.5%) respectively quoted by Bernard et al. Only twenty-three of these femoral tunnels were in the anatomic range. Analysis of forty-one KOOS surveys (23 anatomic, 18 non-anatomic) revealed no significant difference in total score or subscales between the anatomic and non-anatomic groups ( $p = >0.05$ ). **Conclusion:** Our study suggests that tunnel placement does vary between individual patients and is not necessarily as fixed as previously described.

**Abstract no.: 34873**

**REVERSED DISTAL FEMORAL LOCKING PLATE FIXATION IN  
COMMINUTED SUBTROCHANTERIC FRACTURES**

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Introduction: A comminuted subtrochanteric fracture is a challenging problem and its treatment is controversial. Aim - To evaluate usefulness of Reverse Distal Femoral locking compression plate of opposite limb using Minimally Invasive Percutaneous Osteosynthesis (MIPO) technique for treatment of Complex Subtrochanteric Femur fractures. Materials and methods: 20 patients with acute comminuted Subtrochanteric femur fracture operated between July 2010 to June 2011 were stabilized with reversed distal femoral locking plate of opposite side. Plates were inserted sub-muscularly from proximal to distal bypassing fracture site using MIPO technique. Patients were followed up at 1st, 3rd, 6th and at 12th months. Results: 20 patients were operated in this study. Median age was 44±13.7 yrs (29-72 yrs). According to Seinsheimer classification, there were 3 IIa , 2 IIb, 6 IIIa, 3 IIIb , 2 IV and 4 type V fractures. 14 (70%) were males & 6 (30%) were females. Mean duration of post-op stay: 3±0.76 days. Mean Intra operative time was 133±18.03 minutes. Average Intra operative blood loss was 437±83.44 ml. There were no intraoperative complications. All but 3 fractures united at an avg. of 7 months post op. There was loosening of proximal screws in one patient. One pt had screw cut out & subsequent varus deformity. One pt had implant fracture Conclusion: Reversed distal femoral locking plate treatment is a feasible and effective choice for stabilization in complex subtrochanteric fractures. We recommend considering the use of this plate in comminuted subtrochanteric fractures.

**Abstract no.: 34876**

**CAN WE CHANGE THE WAY WE TRAIN? ADOPTION OF A NEW  
TECHNIQUE IN SURGICAL EDUCATION**

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Introduction: Traditionally surgery has been an apprentice specialty with the trainee learning the art of surgery from his/her trainer during a period of attachment. Over the years there have been a lot of changes to the practise of surgery in the UK and the rest of the world. With improved healthcare and rapid progress in the surgical field especially orthopaedics it is necessary to be well trained to avoid medico-legal implications in practise. We endeavoured to find the best possible way in which the trainee could master a surgical skill in the least possible time. Methods: Our unit is a tertiary level teaching hospital and there is a keen focus on registrar training. The senior surgeon (DN) regularly performs Anterior Cruciate Ligament (ACL) reconstruction in his practice. He uses a standardised operative technique. During the first two theatre sessions the trainee (SK) was taken through the procedure step by step. An operative guide and video was provided to SK to familiarise. During the next operating list SK vocalised each step to DN during surgery. Then SK was asked to be an extra assistant to help the scrub nurse. SK was confident of the procedure and was providing DN with the necessary instruments prior to being asked. The trainee was thinking ahead about the procedure and actively assisting. This novel method revealed a significant reduction of the tourniquet time by 30%. Conclusion: This led to a greater satisfaction to the trainee and trainer. the trainee felt better trained with this method.

**Abstract no.: 34885**

**RESULT OF SIGN INTRAMEDULLARY INTERLOCK NAILING IN THE FRACTURE OF PROXIMAL THIRD TIBIA- A RETROSPECTIVE STUDY**

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Introduction:Tibia is one of the most commonly fractured bone .Proximal third tibial fractures account for 5% to 11% of tibial shaft fracture. Treatment of these fractures is complex.Techniques include plate fixation, external fixation and intramedullary nailing. SIGN nailing technique uses external jigs and slot finders instead of expensive fluoroscopy and fracture table. Purpose of the study was to review and compare SIGN nailing technique in treatment of fracture of proximal third tibia with other available techniques; Materials and methods: 33 patients (M:F- 24:9) operated between 2000 and 2010.The age group was between 18-70 years . Male to female ratio was 3:1. There were 21 simple fractures, 6 cases of non-union and six had open injury (4 with Gustillo1 and 2 with Gustillo 2).Polar screw and reaming was not used in our cases. In the case of non-union, broken implants were removed and SIGN nail used, bone graft was done.Post operatively patients were ambulated with crutches NWB and later PWB to FWB as per the pain threshold of the patient. Follow-up of patients were done at regular intervals.Results:The average hospital stay was 3-7 days. There was only one postoperative superficial infection, no major complications.Union time was average 16 weeks with union rate of 94%.About 91% pt. showed more than 120-degree knee range of motion at final follow up. The non-union cases took 16-20 wks for union.Postoperative angulations were within five degree in all planes.Conclusion:SIGN intramedullary nailing is a safe and effective technique of fixation with good functional outcomes.

**Abstract no.: 34895**

**EXPERT TIBIAL NAIL IN META-DIAPHYSEAL FRACTURES OF TIBIA-A  
STUDY OF 50 CASES**

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Rohtak (INDIA)

Author : Sr. Prof R. C. Siwach Co author: Dr Rakesh Goel Background: Intramedullary nailing is an effective and well-established method for the treatment of a wide spectrum of tibial fractures. Nevertheless, the handling of metaphyseal, segmental and open tibial fractures remains challenging. Numerous modifications in nail and screw design have led to the development of the Expert Tibial Nail. It enables the surgeon to further extend the spectrum of fractures eligible for intramedullary nailing. Methods: A prospective study was conducted in 50 skeletally mature patients with unstable fractures of tibia. Thirty-two(64%) fractures were in lower 1/3rd , 15(30%) fractures in proximal 1/3rd of the tibia; and 3(6%) were segmental fractures. 34(68%) were closed and 16(32%) were open fractures 3(6%) Grade I, 7(14%) Grade II, 1(2%) Grade IIIA and 5(10%) Grade IIIB. Using trans/ para patellar approach expert tibial interlocking nail was done achieving fracture reduction by close methods or open method. Results: Results were assessed on the basis of Johner and Wruh criteria. Acceptable radiographic alignment, defined as <5 degrees of angulations in any plane, was obtained in forty six patients (92%). Forty-six (92%) of fracture united radio logically in average duration of 18.5 weeks. Complication included two (4%) delayed union, two (4%) non union, superficial infection two (4%) and one (2%) deep infection, screw back out in 1 (2%) and one (2%) screw breakage while dynamization. The overall functional outcome was excellent or good in 44 (88%) patients, fair in 2 (4%) and poor in 4 (8%).

**Abstract no.: 34897**

**INTERTROCHANTERIC FRACTURES – A RANDOMIZED COMPARISON OF PREFERRED TREATMENT OPTIONS**

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**OBJECTIVE:** Prospective, randomized study compared the functional, radiological outcome and complications associated with a proximal femoral nail (PFN) device, both Long and Short, with those of extramedullary device, the dynamic hip screw DHS

**METHODS :** 112 patients with intertrochanteric fractures, 41 patients treated with DHS, average age of 76 years. 71 patients were treated with PFN of which 38 patients underwent SPFN and 33 patients underwent LPFN, average age of 74.5 years.

**RESULTS:** Average time of operation was 48.5min in PFN;64.8min in DHS. The length of incision was 4.6cm in PFN;15.5cm in DHS. The blood loss was 150.0ml in PFN;250.3ml in DHS. Varus collapse was none in PFN, 1 case in DHS. The collodiaphyseal angle of 7 cases decreased in DHS. Patients treated with the PFN regained their pre-operative walking ability significantly ( $p = 0.04$ ) by the 4th month. 3 cases of SPFN underwent revision to LPFN following a fracture distal to implant.

**CONCLUSION** The therapeutic effect of DHS and PFN was same in treating type A1 fractures. Operative injuries of PFN were less than that of DHS. The re-operation rate was lower in the LPFN. There was significant difference in outcome between the PFN and the DHS groups. LPFN should be preferred for fixation of more comminuted fractures (A2, A3).

**Abstract no.: 34898**

**DEVELOPMENT OF PAEDIATRIC HIP: REVELATIONS THROUGH A PATHOLOGICAL PROCESS.**

Anil AGARWAL

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Introduction: We studied the morphological changes occurring in nutritional rickets in plain radiographs of proximal femoral region in different paediatric age groups during initial presentation and treatment to understand the development of proximal femur during the childhood. Methods: The retrospective study was undertaken from radiological records of 461 children <12 years with nutritional rickets (2007-13). A total of radiological records of 161 children met inclusion criteria for study of hip characteristics. In sequential healing radiographs, the following parameters could be studied- direction of growth, active areas and contributions of individual growth plates in different age groups and the structure of the proximal femoral epiphysis. Results: In infants less than 1 year, the growth zone of proximal femur is homogenous. The differentiation into the longitudinal growth plate of neck (LGP), the trochanteric growth plate (TGP), and the femoral neck isthmus (FNI) is established by age of 2 years and remain distinct till 6 years. The LGP extends medially in the form of a medial overhang (MOH) by age 4 and contributes to changes in neck shaft angle. The LGP is most active of all growth plates. By age of 12 years, the TGP and FNI are minimally active and only the centre portion of LGP is active. Conclusions: The mineralization in healing rickets acts a biological marker in a deficient skeleton. Knowledge of the quantitative contribution of various growth plates in the hip region in childhood could contribute significantly to other understanding of pathomechanism of hip deformations and therefore useful interventions.

**Abstract no.: 34900**

**MIDTERM FUNCTIONAL OUTCOME AFTER PONSETI METHOD OF TREATMENT IN CLUBFOOT**

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**Background:**The aim of this study was to evaluate the mid-term functional results of Ponseti method in congenital clubfoot.**Method:**This study was conducted among 42 feet of 30 children with idiopathic congenital clubfeet previously treated by Ponseti protocol with a minimum follow up of 4 years(mean 5.3 years: range 4-9 years).The feet were assessed by the scoring system developed by Laaveg and Ponseti with minor modification that the questionnaires filled by the parents.**Measurement** of ranges of motion of the ankle and foot was done and standing radiographs of the feet were taken as described by Beatson and Pearson.**Results:**95% of the parents were satisfied with the final results,90% of the feet did not limit any activity and 90% of the feet were never painful.Average dorsiflexion of all the 42 feet were 14.78°,subtalar and forefoot movements of the feet were near normal.Gait analysis results were satisfactory in all of the children without any limp and abnormality of gait pattern.Only 10% of them couldn't heel walk and 23% of them could not squat with heel touching the ground.The average total functional score was 93(range: min 77 to max 99,SD  $\pm$  6.23)out of the100 point scoring system.The results were excellent in 81%,good in 9.5% and fair in 9.5% of the children in this study. Two of the feet had dynamic supination for which tibialis anterior transfer was planned.**Conclusion:**Ponseti method of treatment in congenital clubfoot shows excellent outcome in terms of parent satisfaction,range of motion and function of the feet in the midterm.



**Abstract no.: 34903**

**SURGICAL TREATMENT OF FRACTURE TALUS USING POSTERIOR APPROACH-A RETROSPECTIVE STUDY**

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**Introduction:**The fracture of the talus are less commonly seen and most of the outcomes are by treatment from anterior approach. The purpose of the study is to characterize these fractures by its treatment by posterior method and to evaluate the clinical, radiographic and functional outcomes.**Material & Methods:**20 patients(M:F- 18:2) with fracture talus were treated from 2000 to 2010. The age group was between 24 to 56 years. There were 18 fresh fractures and 2 old fractures(> 3 months). There were 12 body fractures, 4 neck fractures, 2 posterior process and 2 fracture dislocations. All underwent open reduction and internal fixation by posterior approach. Either triple diameter screw or Herbert screw was used to maintain the reduction. Associated medial malleolus fractures were also treated in 5 cases. Complications, secondary procedures and the ability to return to work were evaluated at a minimum one year. Radiographic presence of osteonecrosis and post traumatic arthritis was ascertained.The results were assessed as per the American Foot and Ankle score Index.**Results:**All the patients were followed,evaluated for functional outcome. None of the patients developed avascular necrosis or degenerative arthritis,one patient of fracture dislocation developed post traumatic stiffness and was treated by secondary procedure with arthroscopic arthrolysis with good results. All fractures united within 12 to 18 weeks with no collapse in any one.**Conclusion:** Posterior approach to the talus according to us provides good access for stable fixation,the vascularity of the talus is not jeopardized and therefore chances of collapse are rare.

**Abstract no.: 34904**

**TREATMENT OF DISTAL SHAFT FRACTURES OF THE HUMERUS WITH A RETROGRADE NAIL**

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**INTRODUCTION:** Distal third fractures of the shaft represent a challenge especially in osteopenic bone. We present our single surgeon series of distal third humeral fractures treated with retrograde Halder Humeral Nail. **METHODS:** Between 1994 and 2011 49 fractures involving distal third of the shaft of the humerus were treated. Patients were in the age range 15-82 years (Median 37 years). 3 out of 45 patients were treated due to failure of non operative or other form of operative management. The Halder nail design allows it to be used for very distal fractures of the shaft. All fractures were fixed distally with the screws and proximally with a tri-wire and a locking screw. Patients were mobilised actively at 2 weeks. All patients were followed till clinical and radiological signs of union. 1 patient was lost to follow-up. **RESULTS:** Average time to fracture healing was 15 weeks (Range 9-50 weeks). There were 2 cases of non union, one healed at 9 months with 2nd surgery. The other patient had asymptomatic non union. There was one reported case of infection which resolved after removal of implant. All the patients achieved full range of elbow and shoulder movement. There was no reported iatrogenic radial nerve palsy. **CONCLUSION:** Our results for retrograde Halder Humeral Nail for distal humeral fractures are excellent. It avoids big exposure with reduced risk of iatrogenic radial nerve palsy.

**Abstract no.: 34906**

**EN-BLOCK SACRECTOMY BY COMBINED ANTERIOR AND POSTERIOR APPROACH FOR SACRAL CHORDOMA.**

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Introduction: Sacral tumours are relatively rare, and experience related to resection of these tumours is therefore limited. Radical resection with intact tumour capsule with “no touch” technique prolongs the disease-free survival period. We present our experience of surgical management of large sacral chordomas. Methods: Three patients with sacral chordoma with perisacral pain were included. Loss of bowel and bladder function with involvement of S1 was present in one who required total sacrectomy and spinopelvic fixation.. Other two patients without involvement of S1 had sacral amputation. Through laparotomy, tumour was identified and rectum is mobilized off the tumour. Internal iliac, middle sacral arteries and veins were ligated. Thecal sac was exposed and closed below the intact sacral roots and cut with care to preserve S2 roots whenever possible. The entire sacrum along with tumour was then excised en bloc. Results: All patients tolerated the procedure well. Total blood loss was 900 (+/-150 ml) which happened mostly during posterior approach. There was no incidence of recurrence at 2 years. All were able to ambulate but complained of severe numbness of posterior aspect of leg. Anterior wound healed well in all patients but the posterior wound gaped in one which required negative pressure dressings and secondary sutures. Conclusion: Single stage combined anterior and posterior approach allows safe enbloc excision of sacral tumours. The anterior approach improves the surgeon’s ability to dissect the tumour accurately from the rectum and to gain control of the vessels and enable a safer posterior sacrectomy.

**Abstract no.: 34918**

**ANTERIOR TIBIAL ARTERY INCARCERATION IN A DISTAL TIBIO-FIBULAR SHAFT FRACTURE AND POTENTIAL RISKS USING THE MIPO TECHNIQUE: A CASE REPORT AND REVIEW OF THE LITERATURE**

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We report the case of a 68 y/o male who sustained a low-energy closed distal diaphyseal tibia fracture (AO type 42-B2) with anterior tibial artery and superficial fibular nerve entrapment in the fracture gap. Absent pedal pulse was paramount in diagnosing this uncommon complication. A MIPO approach with limited exposure of the fracture site was used early in patient care in order to spare the artery, followed by delayed fixation of the fibula. MIPO is an increasingly popular technique for distal diaphyseal and metaphyseal tibial fracture fixation. However, this percutaneous method exposes the surgeon to several complications unwitnessed during ORIF. Specific potential pitfalls reported in current literature include great saphenous vein and saphenous nerve injury, inaccurate fracture reduction, postoperative discomfort over medial shin, skin impingement, superficial wound infection over the distal end of the plate, and need for hardware removal. Entrapment of the anterior tibial artery at the fracture site appears as a rare but perhaps under-estimated complication that may go unnoticed if an indirect reduction technique is performed. This may compromise the micro-vascularity at the fracture site, especially in the distal metaphyseal region and lead to delayed or non-union. In conclusion, we recommend further imaging studies should be obtained when facing absent pedal pulse in a fractured leg, even in the absence of acute limb ischemia. MIPO is a seducing, soft-tissue sparing approach, for which further studies are needed to fully understand and cover the scope of specific complications associated with this technique.

**Abstract no.: 34919**

**ARTHROSCOPIC ACL RECONSTRUCTION (ANATOMICAL SINGLE BUNDLE) USING QUADRUPLED HAMSTRING GRACILIS FLAP GRAFT THROUGH ANTEROMEDIAL PORTAL – A CRITICAL PROSPECTIVE OUTCOME ANALYSIS**

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**BACKGROUND:** ACL tears are common injuries in sports medicine. The ultimate goal of acl reconstruction is the restoration of normal knee kinematics in patients with functionally unstable ACL deficient knees. There are three different approaches for drilling the femoral tunnel in single bundle ACL reconstruction-(a) transtibial (b) anteromedial portal and (c) femoral jig retrograde. Anteromedial portal allows drilling of femoral and tibial tunnel independently which facilitates anatomical placement of ACL graft. It restores rotational stability besides translational stability. **PURPOSE:**To study rotational & translational stability of knee joint following use of AM portal technique for femoral fixation in arthroscopic ACL reconstruction using semitendinosus and gracilis flap graft. **MATERIAL & METHODS:**42 Patients aged between 18-50 years with subacute and chronic ACL injuries between feb 2011- feb 2013 were included in the study. Patients with bilateral ACL injuries, multiligamentous injury, skeletally immature patients and patients with restricted preop movement were excluded from study. Patients were evaluated 12, 18 and 24 months after surgical intervention, both clinically ( lachman test- AP stability, pivot shift test- rotational stability,, Lysholm's knee scoring system) and radiologically (x-ray and ct- scan). **RESULTS:**Statistical analysis revealed a significantly reduced anteroposterior knee laxity and increased rotational stability with more anatomic placement of femoral tunnel in patients using anteromedial portal for placement of quadrupled semi-T - gracilis ACL graft. **CONCLUSION:**ACL reconstruction using AM portal provides significant rotational and translational stability, documented through clinical and radiological criteria.

**Abstract no.: 34922**

**NITROGLYCERIN AS A NEW METHOD OF JOINT IMPLANTS  
INSTABILITY PREVENTION IN PATIENTS WITH TYPE 2 DIABETES  
MELLITUS**

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Introduction: Total joint replacement of large joints in patients with type 2 diabetes mellitus (DM) is a complicated and almost inextricable problem. This is due to insulin deficiency that contributes to development of osteopenia and osteoporosis. Transcendental reduction of insulin reduces the activity of osteoblasts and decreases bone matrix protein. These alterations are accompanied by negative calcium balance that results in implant instability in cases of total replacement of large joints with no signs of remodeling in bone implant bed. Materials and methods: New method of prevention of instability of large joints endoprosthesis component by periosteal administration of Nitroglycerin 2.0 solution 7-8 days after surgery was proposed, 5 injections per treatment. Nitric oxide (NO) contained in medication causes dilation of blood vessels in the walls of the implantation bed, blocks platelet aggregation and adhesion of molecular inflammation in endothelial cells. In general, it significantly improves nutrition of osteoporotic bone with gradual seal around the implants. Intensive remodeling in the bone tissue adjacent to the implant was observed in 27 patients (10 men aged 37 to 78 years and 17 women aged 34 to 74 years) with type 2 DM after total hip (10 patients) and knee (17 patients) joint replacement. Results: Periosteal Nitroglycerin injection after surgery showed significant improvement of bone structure in the "implant-bone" border in 6-12 months after surgery, providing the biological stability of the components of the prosthesis. Moreover, steady decline of blood glucose was revealed that indicates stimulation of pancreatic secretion.

**Abstract no.: 34924**

**RADIOLOGICAL FEATURES OF CERVICAL OSSIFICATION OF LIGAMENTUM FAVUM (COLF)**

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Introduction: Ossification of ligamentum flavum (OLF) is a rare disease relatively common in thoracic region. Cervical Ossification of ligamentum flavum (COLF) is extremely rare disease causing myelopathy. We report the radiological features of cervical OLF. Methods: 12 patients with cervical myelopathy due to OLF were included in the study. All patients underwent MRI and CT evaluation of the cervical spine before and after posterior decompression. Eight patients had isolated OLF whereas four patients had OLF along with OPLL. 10 patients underwent enblock cervical laminectomy where as two patients with gross adhesions underwent posterior decompression with floating flavum technique. The harvested ligamentum flavum was submitted for histopatological examination. Results: The CT scan images of all 12 patients characteristically showed OLF as a radio-dense semicircular area abutting the dural sac and parallel to the lamina giving the appearance of "double lamina". The ossification was thicker at the capsular region and thin in the midline which was confirmed on histopathology. A clear gap exists between anterior surface of lamina and radio-dense COLF giving appearance of "pseudo-dural ossification". On MRI, the COLF appears as uniform hyperdense area posterior to the cord, extending laterally onto the facet joint capsular area without any demarcation between the ossified and un-ossified ligamentum flavum. The radio-dense COLF disappeared after cervical laminectomy and persisted in floating flavum group. Conclusion: Cervical OLF is a rare cause of cervical myelopathy with unique radiological features. The computer tomographic "double laminar sign" and "pseudo-dural ossification sign" are characteristic of cervical ossification of ligamentum flavum.

**Abstract no.: 34932**

**ICU-ADMISSION RELATED TO ORTHOPAEDIC SURGERIES**

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**Introduction** This study was to evaluate the situations that lead to the ICU admission of orthopedic surgical patients postoperatively and the mortality of these patients. **Patients and Methods** We reviewed the records of all orthopedic patients admitted to the surgical ICU from January 2000 to December 2010. These 1540 patients were categorized into four groups, based on the surgery or the indication for surgery: arthroplasty (290 patients), spinal surgery (576), fracture other than spine (550), and others (124). **Results** For the knee arthroplasty patients, the ICU admission rate was higher in patients who received bilateral total knee arthroplasty than patients who received primary total knee arthroplasty. For the spinal surgery patients, the ICU admission rate was higher in patients who received operation for spinal deformity, spinal fracture, spinal infection, and spinal metastasis. Mortality rate was higher in patients who received operation for spinal metastasis. For the other fracture patients, the ICU admission rate was higher in patients who received fixation for multiple fractures. **Discussion** According to the literature, perioperative complications, including myocardial infarction, and the need for intensive monitoring, were greater after the bilateral arthroplasties. In spinal surgery group, the predominant cause of ICU admission was routine postoperative observation, followed by respiratory problems, and massive blood loss. The spinal disease or spinal surgery itself might already have affected the respiratory function. Mortality rate was higher in patients who received operation for spinal metastasis. Due to immunosuppression, poor nutritional status and medical comorbidities, surgery may have significant complications in these patients.



**Abstract no.: 34933**

**THE ADVANTAGES OF COLLOST USING IN TREATMENT BENIGN BONE TUMOURS**

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Introduction: Results of treatment of patients with benign tumours and tumour-like diseases were studied in 84 operated patients. Periods of observation was from 1 month to 7 years. In our long-term study had shown good results - 70%; satisfactory results - 20% and poor results - 10%. The study of long-term results of surgical treatment of benign tumours and tumour-like diseases using the proposed methods has shown that as the time elapsed after surgery, the number of good results increases. Materials and methods: After radical surgery we used allograft and the collagen material collost. But if the size of the defect was less than 20 cm<sup>3</sup>, we used only Collost. Collost advantages are: 1) fills all space, both between allografts, and between them and the mother's bed. 2) increases the proliferation of osteoblasts. 3) the considerable reduction of a pain, the wounds inflammations and the liquid losses. 4) increases the dynamics of restoration of bone structure and anatomical characteristics of the bone. 5) increases the dynamics of restoration of allograft. Results: The Collost application creates optimum conditions for the bone regeneration: there is an effective restoration of bone structure, processes of formation and maturing bone trabecular become more active. The Collost possesses the expressed osteogenic properties, allowing to fill effectively post-op defects. The application of Collost increases restore the morphological structure bone, reduces terms of functional treatment and rehabilitation of patients with a bone pathology.

**Abstract no.: 34934**

**ROLE OF ARTHROPLASTY IN INTERTROCHANTERIC FRACTURES**

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Background: Osteosynthesis is possible in majority of patients of intertrochanteric fractures but it has higher complication rate in patients with unstable and comminuted fractures, patients with associated comorbidity and severe osteoporosis. Primary prosthetic Arthroplasty offers great opportunity to mobilise these patients rapidly thus preventing complications such as pneumonia, thromboembolism (DVT), pressure sores etc. MATERIAL AND METHODS: Fifty patients were treated at our institution with hip arthroplasty in intertrochanteric fractures. Depending on the nature of fracture various options are: - If calcar intact prosthesis can be inserted directly after femoral canal preparation -If calcar deficient, calcar is reconstructed with a cut autograft from the femoral neck. The calcar autograft is compressed between collar of the femoral stem and medial proximal femur as the stem is fully inserted. If lesser trochanter is fractured, it is reattached in its anatomical position with encirclage wire, if greater trochanter is fractured, another encirclage wire is placed around proximal femur RESULTS: Evaluation of clinical results was done using Harris Hip Score Excellent/Good : 20 patients (80%), Fair : 2 patients (8%), Poor : 2 patients (8%). One patient expired in postoperative period probably due to embolism who had poor cardiopulmonary reserve and cement was used. CONCLUSION: Arthroplasty in elderly and comminuted trochanteric fractures with osteoporosis is a good option as this allows early mobilization and have less complications as compared to osteosynthesis. Authors are in opinion that arthroplasty is a real advantage in difficult situation in properly selected patients of trochanteric fractures. Keywords: intertrochanteric fractures, Arthroplasty, Osteosynthesis

**Abstract no.: 34937**

**EVALUATION OF PF-LCP IN COMPLEX PROXIMAL FEMORAL FRACTURE**

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**INTRODUCTION:** Stable pertrochanteric femur fractures can be treated successfully with conventional implants such as sliding hip screw, cephalomedullary nails, and angular blade plates. However comminuted and unstable inter or subtrochanteric fractures with or without osteoporosis are challenging and prone to complications. The PF-LCP is a new implant that allows angular stability by creating a fixed angle block for treatment of complex , comminuted unstable proximal femoral fractures. **MATERIAL AND METHOD:** We reviewed 20 patients with unstable inter- or subtrochanteric fractures , which were stabilized with PF-LCP. Open fractures, bilateral trochanteric fractures, associated shaft femur fractures and patients with systemic manifestations were excluded from study. Mean age of patient was 65 years, and average operative time was 72 minutes. Patients were followed up for a period of 2 years ( july2010-july 2012).Patients were examined at regular interval for signs of union (radiological & clinical), varus collapse ( neck -shaft angle), limb shortening, and hardware failure. Patients were allowed non -weight bearing ambulation and quadriceps setting exercises from day after surgery.Toe touch weight bearing was started at 3 weeks and full weight bearing at 8 weeks subject to union criteria.**RESULTS:** All patients showed signs of union at an average of 9weeks (8-10 wks), with minimum varus collapse(<10deg) & no limb shortening and hardware failure. Results were categorized into excellent, good and fair according to aforementioned criterias . 60% showed excellent result with 30% good & 10% had fair outcome.**CONCLUSION:**PF-LCP represents a feasible alternative for treatment of unstable inter or sub trochanteric fractures.

**Abstract no.: 34939**

**TOTAL HIP ARTHROPLASTY IN ADVANCED AGE**

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Introduction. Femoral neck fractures resulting from osteoporosis are the most common trauma in older adults. Methods. The surgical management of osteoporosis-related femoral neck fracture in elderly patients with coxarthrosis deformans is aimed at restoring mobility and bearing function of lower extremity and movement pattern, and at relieving pain. It must return to the individuals their ability to self-care. Since 1996 up to the present day in Traumatology, Orthopedics and Field Surgery Clinic of MSUMD 520 patients aged 75 to 91 with coxarthrosis deformans and fractures of the neck of the femur have been operated. Total hip joint replacement was performed in all patients. Assessment of the hip joint condition was evaluated by clinical, anthropometric and radiological methods. Results. Our observation shows that total hip joint replacement at osteoporotic femoral neck fractures and at the third - fourth stage of coxarthrosis in elderly patients bring about favourable results for most individuals. The essential conditions of that were sound detecting of the indications for surgery, strict keeping measures for prevention of inflammatory complications, proper technique of joint replacement and adequate rehabilitation treatment. Positive results of hip joint replacement were achieved in 89,5% cases.

**Abstract no.: 34940**

**SINGLE STAGE RECONSTRUCTION OF BONE DEFECTS OF LONG BONES WITH GAMMA IRRADIATED STRUCTURAL ALLOGRAFTS**

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Introduction: Bone defects too long to be bridged by cancellous bone graft require complex reconstruction. Distraction osteogenesis requires long duration and has pin-site complications and non-unions. Patients and Methods :We evaluated 25 patients who underwent structural Allograft replacement of bone defects were assessed from 2008 to 2012 with mean followup of 18 months ( 6months – 3yrs) . The age of patients ranged from 16 to 67 yrs with mean age being 37.5yrs. Five patients had bone loss following tumour resection, 17 patients had large segmental bone loss of supracondylar femur, 3 patients had segmental metaphyseal bone defect. Three patients with tibial bone loss and 9 patients with supracondylar bone defects underwent reconstruction with fibula allograft, Three patients underwent Allograft femur with intramedullary free vascularised fibula transfer and Three patients had undergone allograft femur with autografts. Results : 15 Patients with Supracondylar femur bone loss had good incorporation of allograft, one patient went on to have non union of shaft and fibula junction however didn't undergo secondary procedure. Two patients had post operative deep surgical site infections which settled after debridement and antibiotics. The range of movements of the knee joint are, however restricted to 50 to 100degrees of flexion. Five patients with tumour resection had good incorporation of allografts and no recurrence found till now. The average time of incorporation of allograft is about 8months. Conclusion: Single stage reconstruction of bone defects by structural allografts gives good results.

**Abstract no.: 34941**

**ANATOMIC SINGLE BUNDLE ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION**

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Introduction: The aim of this study was to evaluate the clinical results of Anatomic single bundle Anterior Cruciate Ligament (ACL) reconstruction through an accessory medial portal. Methods: Prospective case series. Fifty-two patients undergoing arthroscopic hamstring ACL reconstruction were prospectively followed. Mean age: 26.4 years (15-39) Men: 68% Female: 32%. Average follow-up: 27 months. (24-31) Bundle fixation was done with femoral TightRope and Tibial biocomposite interference screw. Anteroposterior stability was assessed objectively by using the maximal manual test with the KT-1000 arthrometer. Rotational stability was determined by Lateral Pivot-Shift test. Clinical results were assessed by International Knee Documentation Committee (IKDC) and Lysholm scores. In addition a Magnetic Resonance of the Knee (MRI) was taken at 6 months post-operatively to evaluate graft maturation and bone incorporation. Results: Average ROM: 0-130°. Graft integration was observed in 100% of patients evaluated at 6 months by MRI. IKDC mean score: 89.2; Lysholm mean score: 93.8. The average KT-1000 side-to-side difference was 2,09 mm with 92.4% between 1-3 mm, 3,8% between 3-5 mm and 3,8% more than 5 mm. Pivot-Shift test was negative in 86.5% and positive in 13.5% of the patients. Conclusion: Our study shows good and excellent results in anterior and rotational stability as well as IKDC, and Lysholm scores and Graft integration measured by MRI for the anatomic single bundle ACL reconstruction.

**Abstract no.: 34943**

**WINDOW APPROACH FOR TOTAL HIP REPLACEMENT**

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Total hip arthroplasty has emerged as one of the major breakthroughs in modern day orthopaedics. The optimum approach for Total Hip Arthroplasty is hotly debated. We analyzed patients using postero-lateral window approach to hip for total hip replacement. We used patient holding anterior and posterior posts. Greater trochanter was used as surgical landmark and incision was given obliquely toward the posterior superior iliac spine. Fascia lata was incised and charnelly self retaining retractors were applied. Plane developed between gluteus medius and piriformis. Short external rotators stay sutured. Capsule was divided in L shaped fashion. Hip dislocated posteriorly and femoral neck osteotomy done. One cobra retractor was placed along anterior margin of acetabulum and another cobra retractor was placed below transverse acetabular ligament inferiorly. Steinman pin was placed superiorly in ilium to act as retractor and guide for acetabular cup placement. Global view of acetabulum was visible after proper placement of retractors. For femoral exposure upper part of window was used. One homans retractor was placed around lesser trochanter. Bipronged retractor was placed below greater trochanter to avoid tissue maceration. After femoral preparation and implantation of prosthesis reduction was done checking for soft tissue tension. After reattachment of capsule & short external rotators closure completed in layers. All complications, during and after surgery, were noted with special emphasis on incidence of dislocation and factors contributing to it. We conclude that the window approach is compatible with a low overall rate of early complications especially dislocation.

**Abstract no.: 34947**

**LONG-TERM CLINICAL OUTCOMES IN ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTIONS WITH AUTOLOGOUS PLATELET CONCENTRATE**

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**Introduction:** The addition of Autologous Platelet Concentrate (APC) to Anterior Cruciate Ligament (ACL) reconstruction has shown controversial results at short-term follow up. There is a lack of evidence supporting or rejecting its use at long-term follow up. **Objectives:** To evaluate clinical outcomes in ACL reconstruction in two groups of patients that underwent ACL reconstruction with and without the use of APC at long-term follow up. **Material and Methods:** A randomized prospective study was performed, two consecutive series of patients reconstructed in a 14 months period; 27 with APC use (Group A) and 20 as control (Group B). At five year follow up Lysholm Score was applied to all patients and return to sports activities of the patients was registered. T- test and Chi Square test were performed for statistical analysis. **Results:** Mean Lysholm Score: Group A 96,95, Group B 96. There was no significance statistical difference in Lysholm Scores between groups (P 0,711 – CI 95%). 96% of Group A and 100% of Group B patients were performing sports activities regularly with no significance statistical differences (P 0,757 – CI 95%). Two patients in Group A and one in group B had a re-rupture with no statistical differences. **Conclusion:** There are no differences in clinical outcomes, re-rupture and return to sports activities in patients that had ACL reconstruction with or without the addition of APC at long-term follow up. The use of APC in ACL reconstruction does not report additional benefits in clinical outcomes at long-term follow-up.



**Abstract no.: 34950**

**PREDICTORS OF EARLY MORTALITY IN SURGICALLY TREATED PATIENTS WITH SPINAL METASTASIS**

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Introduction: In spite of using prognostic scores, we have seen early deaths following surgery for metastatic spine disease. Objective: To investigate other factors that could predict early mortality in surgically treated patients with spinal metastasis. Methods: We retrospectively analysed 24 patients who died within 3 months of surgery & compared against 49 patients who survived more than 1 year. We have excluded deaths between 3 months to 1 year. All were operated between Aug 2006- Jan 2012. The factors assessed were gender, type of tumour, location of metastasis, number of levels involved, Karnofsky performance status, Modified Tokuhashi score, presence or absence of cord compression, Pre operative albumin level and Visceral metastasis. Statistical analysis was performed using chi-square test. Results: We found low Karnofsky Score ( $p=0.039$ ), low Modified Tokuhashi score ( $p=0.023$ ), presence of cord compression ( $p=0.016$ ), low albumin level ( $p=0.000$ ), presence of visceral metastasis ( $p=0.000$ ), post-op infection ( $p=0.000$ ) and multiple location of metastasis ( $p=0.009$ ) were statistically significant in predicting early mortality. Type of tumour was not statistically significant in predicting the outcome. Conclusion: Low Karnofsky Score, Low Modified Tokuhashi score, presence of cord compression, Low albumin levels, presence of visceral metastasis, post-op infection and multiple location of metastasis were significant predictors of early mortality. In our series of 24 patients with early deaths 17 patients had cord compression, of 49 patients of late deaths 20 had cord compression. It is very important to be more vigilant and prevent post-operative infections in these patients.

**Abstract no.: 34953**

**PERCUTANEOUS TREATMENT OF SPINAL PATHOLOGIES USING AN EXTERNAL FIXATOR UNDER LOCAL ANAESTHESIA.**

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Surgical correction of Spinal deformities always have a limitation of degree of correction and risk of neurological injury during acute correction peroperatively. We have developed a new technique of gradual correction of Spinal pathologies using an external fixator which is applied percutaneously under local anaesthesia. Advantages include continuous monitoring of the neurological status during surgery and during correction postoperatively. Also, gradual correction of the deformity leads to full correction in comparison to limited correction during acute correction. We present our early results of percutaneous use of external fixator in correction of spinal pathologies in 12 cases. Between 2005 and 2008, 16 cases of Spinal pathologies including 7 cases of Spondylolisthesis, 3 cases of Degenerated lumbar disc, and 6 cases of thoracolumbar trauma were treated surgically. Age group was 31 to 58 years. Radiological evaluation include AP and Lateral Radiograph and MRI. During follow up, serial Lateral radiographs were taken to assess the correction of deformity. Pins of external fixator similar to Schanz pins were applied through pedicle. 2 vertebra above and below the level were fixed. After the surgery, gradual correction of the deformity is done in 3 to 6 weeks. 100% reduction was achieved in 5/7 cases of Grade 1 and 2 Spondylolisthesis, 2 cases of Grade 3 achieved 50% reduction. 100% reduction was achieved in all 6 cases of thoracolumbar trauma. Increase in disc space with increase in water content in T2 image of MRI was noted in all 3 cases of Degenerated lumbar disc.

**Abstract no.: 34959**

**TUBERCULOSIS OF THE SPINE – IS IT ON THE RISE IN ENGLAND?  
SOUTHERN DERBYSHIRE’S EXPERIENCE OF MORE THAN A DECADE**

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**Introduction** Evidence suggests that there is a recent rise in the incidence of Tuberculosis (TB) in UK, but the data regarding spinal tuberculosis is not reported. **Objective** To analyse the epidemiology of spinal tuberculosis in Southern Derbyshire. **Methods** We reviewed the Prospectively collected data of Tuberculosis over a 15-year period. **Results** A total of 940 cases of TB were treated during the period 1997-2012, [892 were General TB(94.89%), 48 were MSK TB including 31 cases of spinal TB(3.30%). Between 2007-2012, there were 325 of cases of TB [25 were MSK TB, 19 Spinal TB (5.85%)]. Between 2002-2006 revealed 302 cases of TB [10 were MSK TB, 7 Spinal TB (2.31%)]. Between 1997-2001 there were 313 cases of TB [13 were MSK TB, 5 Spinal TB (1.59%)]. Of 31 patients with MSK TB over 15 years period, 22 were from Indian Sub-continent, 6 Caucasians & 3 Africans. All Caucasians were born in UK, majority of Non-Caucasian patients were born in their respective countries & immigrated to UK. Except 3 patients, all had culture proven Mycobacterium Tuberculosis, and were sensitive to standard ATT (2 cases resistant to Isoniazid). ‘Two Independent Proportion Test’ showed that there was a significant rise in the incidence of spinal TB for 2007-2012 when compared to 2002-2006 (p=0.026). **Conclusion** From our data it is clear that incidence of spinal tuberculosis is increasing & has more than doubled over the last 5 years, hence we have to be more vigilant. Resistant organisms were not significant in our spine TB cases.

**Abstract no.: 34960**

**TRANSTIBIAL OR ANTEROMEDIAL PORTAL TECHNIQUE OF ARTHROSCOPIC ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION - WHAT IS BETTER? (CLINICAL AND RADIOLOGICAL EVALUATION WITH MRI)**

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Introduction: Aim is to compare clinical outcomes of arthroscopic single bundle (SB) ACL reconstruction using transtibial (TT) and anteromedial portal (AMP) technique and radiological evaluation with MRI of both knees to compare graft placement. Material and methods: Our randomised prospective study of 40 patients of isolated ACL injury with 20 cases each in AMP and TT group. Patients were assessed clinically using Lysholm and IKDC scores and radiologically by a postoperative MRI of knees to compare angles between graft and proximal tibia in sagittal and coronal planes to ascertain if angles match closely to normal in TT or AMP technique. Results: Functional results were better in AMP group as shown by average Lysholm and IKDC scores however the difference was not statistically significant. The pivot shift was absent in all 40 patients. MRI has clearly shown that graft angle in AMP technique closely matches to that of normal knee. Difference of graft angles between injured knee after ACL reconstruction and normal knee was statistically insignificant in AMP group but significant in normal vs TT group. Conclusion: Patients were examined clinically and radiologically with MRI for graft placement. Though difference between functional outcomes amongst two groups statistically insignificant, MRI showed AMP technique reconstruction was more anatomical. This is a small study which could be reason for non significant difference between functional scores of two groups. Longer follow up shall be required to assess long term results of two groups to know if AMP technique group will fare better in long run.

**Abstract no.: 34962**

**SIMULATING ANNULUS FIBROSUS ARCHITECTURE TO ESTABLISH 3D MULTI-LAMELLAR SCAFFOLD WITH ALIGNED ELECTROSPUN NANOFIBERS BY FUSED DEPOSITION MODELING METHOD**

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**Purpose:** To develop a 3D scaffold with multi-lamellar aligned nano- and micro-fibers for annulus fibrosus (AF) tissue engineering. **Method:** Aligned polycaprolactone nano-fiber sheets, which were fabricated by electrospinning, were inserted into fused-deposition-modeling (FDM) micro-fibers. Scaffolds only having FDM micro-fibers were as control. All scaffolds were pretreated by 0.5 M sodium hydroxide for 2 h to increase surface hydrophilicity. Then human mesenchymal stem cells (hMSCs) were seeded. The architecture of the scaffold was investigated by scanning electron microscopy and histology. Cell viability and morphology in the scaffold were evaluated by XTT test, DNA quantify, and confocal microscopy. **Result:** We established a 3D multi-lamellar AF scaffold containing aligned nano- and micro-fibers, which simulating nature AF lamellar structures. The lamellar thickness was 0.7 mm, the angle of fibers in each adjacent lamellar was 60 degree. Sodium hydroxide pretreatment allowed the maximum water absorption completed within 5 minutes. XTT value of the cells on AF scaffold was significantly higher than the control scaffolds at day 3 and day 6 after seeding. DNA quantify on AF scaffold at day 6 was also significantly higher than the control. Confocal microscopy investigated that cells spread evenly on the surface of the electrospun sheet and oriented along with the nano-fiber direction. **Conclusion:** 3D multi-lamellar AF scaffold can be obtained by combining electrospinning and FDM method. This scaffold has advantages of FDM micro-fiber's stability, 3D multilayer, and aligned electrospun nano-fiber's characters such as: improved hMSCs attachment, proliferation, and contact guidance of cell morphology.

**Abstract no.: 34963**

**PAINLESS AWKWARD GAIT DUE TO BONY ANKYLOSIS OF BOTH HIP JOINTS IN A POSITION OF SYMMETRICAL WIDE ABDUCTION, FLEXION AND EXTERNAL ROTATION IN A 18 YEAR OLD GIRL, COMPROMISING HER SOCIAL LIFE.**

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18-year-old girl presented to outpatient department with an awkward gait. She came out of the house only after 10 years because of the social issues and compromised quality of life. She walks with both hips fixed in 60 degrees abduction, 80 degrees of flexion, and external rotation. She had a history of Septic arthritis at the age of 8 years. she had fever with chills and pseudo paralysis of both hips. she had discharging sinuses on both hips. She was treated in a local hospital for 10 days. On examination patient had painless awkward gait. Lies down like in a lithotomy position. On inspection she had healed sinuses on anterior aspect of both the hip joints. Both hips are symmetrical, fixed in 60 degrees of abduction, 80 degrees of flexion and some external rotation. No tenderness, telescoping or abnormal mobility. Both knee and ankle joints were normal. Radiographs were taken which shows Bony ankylosis of both hips in wide abduction as if shaft of femur is fixed to pelvis. Lateral view could demonstrate trochanteric prominence close to pelvic wall. We tried to get a CT scan done but she could not be passed in to the CT tunnel. She was managed with bilateral Total hip replacements in different sittings. Anterior approach was used, Subtrochanteric shortening was done and fixed with metal on poly articulation on both sides. Post operatively on second hip she had anterior iliac vessel thrombosis at the sinus level which was managed with vascular surgery.

**Abstract no.: 34967**

**ACL RECONSTRUCTION USING QUADRICEP TENDON  
AUTOGRAFT:CASE SERIES OF 20 CASES.**

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Introduction:Anterior cruciate ligament (ACL) injury is a common sports injury leading to anterior instability. These patients need reconstruction of anterior cruciate ligament using an autograft. These autografts lead to donor site morbidity in the form of anterior knee pain and possible weakness of knee flexors. For this reason a new autograft from central third of quadriceps tendon is becoming slowly popular with good results. The quadriceps tendon graft is supposed to have about the same strength and stiffness as the original ACL. Quadriceps tendon makes a strong autograft substitute with lesser donor site morbidity. The central quadriceps tendon consists of a central portion of the quadriceps tendon approximately 10 mmwide. Fulkerson and Langeland first popularized the quadriceps tendon as an alternative for primary ACL reconstruction. Objective: To assess the quality of graft in terms of thickness and length. To assess the grafts capability in neutralizing the anterior drawer and Lachman tests in follow up period. To assess the clinical results in terms of symptomatic improvement of patients.To assess any donor site morbidity. Methodolgy: 20 patient with symptomatic and MRI proven ACL deficient knees were operated and followed up for 1 yr. Result: Graft size was at an average 9X85mm, 19 out of20 patients had no symptomatic ACL laxity at the end of 1 yr.1 patient had a failure which was revised using quadrupled hamstring autograft. Discussion: Quadricep tendon bone presents a viable alternative to conventional autografts and has comparable outcomes to routinely used autografts without usual donor site morbidity.

**Abstract no.: 34971**

**SOCIAL DRIFT FOLLOWING SURGICAL TREATMENT OF VERTEBRAL COMPRESSION FRACTURE & FRACTURE NECK OF FEMUR: A CASE FOR RECONSIDERATION OF SURGICAL PRIORITY AFTER VERTEBRAL COMPRESSION FRACTURE.**

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Introduction: Fracture neck of femur (NOF) and Osteoporotic Vertebral Compression Fractures (OVCF) have a significant effect on social function of patients. Downward drift in social functional status (Social Drift) is described. Priority of surgical treatment following neck of femur fracture is well established. Should vertebral compression fractures be viewed in similar light? Objective: To analyze the incidence of social drift and mortality in our centre following either Balloon Kyphoplasty for OVCF or Surgery for fracture NOF in patients who lived in their own home. Patients and Methods: Data was collected prospectively from 2007-2008. Sample size was a fair representation of each group considering the incidence of type of injury. Social functional status was documented pre-injury and at final discharge after treatment & rehabilitation in both groups. Drift in the social functional status was documented. Results: In the NOF group, there were 580 patients. Average age was 78 years, mostly females (n=414). 78% patients showed 'No Drift' (n=453) but 12% (n=71) drifted to lower level and 10% of the patients died before the final discharge (n=56). In the OVCF group there were 53 patients. Average age was 76 years, mostly females (n=45). 79% showed 'No Drift' (n=42). 10% (n=5) of the patients drifted to lower level and 11% died (n=6). Conclusions: Interesting to observe that following appropriate surgical treatment, the social drift and mortality after Osteoporotic Vertebral Compression Fractures and Fracture neck of Femur were similar. We believe vertebral compression fractures require a similar surgical priority as fracture neck of femur.



**Abstract no.: 34974**

**STRESS FRACTURE OF FEMORAL NECK: THE MYSTERY CONTINUES:  
A CASE REPORT**

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Femoral neck fractures are uncommon in young adults and often the result of high energy trauma. Despite optimal management they are often associated with high incidence of femoral head osteonecrosis and non-union. The first case of femoral neck stress fracture was reported in 1905, as cited by Blickenstaff and Morris. Fullerton and Snowdy classified them as: Type I- Tension side femoral neck stress fracture; Type II- Compression side femoral neck stress fracture and Type III- Displaced femoral neck stress fracture. Our case, a 50 years old male while walking, presented with severe gluteal pain following insignificant trauma. Examination revealed active straight leg raising test positive for 30 seconds only, antalgic gait with patrick's test negative. Radiographs were unequivocal. 10 days post injury, repeat skiagram pointed towards a doubtful cortical breach just proximal to the calcar plate at the neck of femur. MRI revealed undisplaced fracture transversing from compressive trabeculae to tensile trabeculae. The fracture was managed by closed reduction and fixed with 7.0 mm cannulated cancellous screws under image guidance. Insignificant trauma with minimal clinical findings, may not suggest fracture neck of femur but index of clinical suspicion must be high. Advanced imaging solutions are of paramount relevance in such circumstances. These fractures can become displaced, resulting in significant associated morbidity. Therefore, early diagnosis is critical so that appropriate management can be initiated and complications prevented. Due to the insignificant traumatic insult, negligible clinical findings and relatively better prognosis, this fracture is presented for its peculiarity in diagnosis and management.

**Abstract no.: 34976**

**CLUSTERING PHENOMENON OF VERTEBRAL REFRACTURES AFTER PERCUTANEOUS VERTEBROPLASTY IN A PATIENT WITH GLUCOCORTICOSTEROID-INDUCED OSTOPOROSIS. A CASE REPORT AND REVIEW OF THE LITERATURE**

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**Objective.** To describe a case with glucocorticosteroid-induced osteoporosis ( GIOP ) as well as pulmonary infection who underwent percutaneous vertebroplasty(PVP)for the managements of first vertebral compression fractures(VCFs), suffered from the clustering phenomenon of spontaneous vertebral refractures.**Methods.** We reported a 63-year-old Chinese woman with GIOP as well as pulmonary infection who underwent PVP for the managements of first VCFs; suffered from the clustering phenomenon of spontaneous vertebral refractures.**Results.** The patient received PVP operations for 6 times, with 13 cement augmented vertebral bodies in a 4 months period. 12 refractures since the initial PVP procedures of T12 and L2 included 3 remote level fractures, 5 adjacent level fractures, 1 pincher body fracture and 3 fractures in previous augmented bodies. Average time between every two PVP operations was 23.6 days. **Conclusion:** The utilization of PVP as a therapeutic alternative for the treatment of VCFs in GIOP patients is still controversial.The balance between good outcomes and refracture risk after PVP could be impacted by a varity of factors. However, as seen in our case, even when the management decisions were made keeping in consideration patient's pulmonary infection, the outcomes were disastrous with the clustering phenomenon of vertebral refractures.**Key words:** Vertebral compression fracture,Vertebroplasty,Osteoporosis,Steroids

**Abstract no.: 34978**

**INTRATHECAL MORPHINE MAY ATTENUATE ACUTE OPIOID TOLERANCE SECONDARY TO REMIFENTANIL IN CHILDREN UNDERGOING SPINAL FUSION**

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We routinely use 15 mcg/kg of intrathecal morphine after anesthesia induction and have shown safe and effective postoperative analgesia with this technique. With increased use of intravenous anesthesia during spine surgery to facilitate neurologic monitoring, remifentanil is increasingly employed as an anesthesia adjunct. However, remifentanil has been associated with increased postoperative morphine use in pediatric patients undergoing posterior spinal fusion. We wanted to see if intrathecal morphine attenuated the increased postoperative morphine use in patients receiving remifentanil. We reviewed our pediatric spine surgery database and anesthesia records for those who did and did not receive remifentanil. Patients in both groups received intrathecal morphine. Each group had 27 subjects. In the remifentanil group, the mean infusion duration was 236 minutes with mean remifentanil dose of 0.14 mcg/kg/min. In the remifentanil group, mean postoperative morphine consumption was 0.02 mg/kg/hr over 48 hours. Mean Visual Analog Pain scores in the recovery room, POD 1, POD 2, and POD 3 were 1.0, 4.0, 3.8, and 3.6 respectively. In the non-remifentanil group, mean postoperative morphine consumption was 0.03 mg/kg/hr over 48 hours. Mean pain scores in the recovery room, POD 1, POD 2, and POD 3 were 0.5, 3.7, 2.9, and 3.2 respectively. Interestingly, patients receiving remifentanil and intrathecal morphine used 0.01 mg/kg/hr less morphine in the first 48 postoperative hours than patients who received intrathecal morphine alone. Pain scores were equally well controlled in both groups. These findings may support using intrathecal morphine to attenuate the acute opioid tolerance caused by remifentanil.

**Abstract no.: 34981**

**PFN A ( PROXIMAL FEMORAL NAIL ANTIROTATION) FOR THE TREATMENT OF TROCHANTERIC FEMORAL FRACTURE IN THE ELDERLY: A PROSPECTIVE STUDY**

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Background : Proximal femoral fractures account for a substantial proportion of trauma surgery in the elderly and a majority of them are extracapsular fractures. Several fixation devices have been developed to treat intertrochanteric fractures with sliding hip screw system and proximal femoral nail being the standard methods of fixation for past few decades. However high failure rates of sliding screws in unstable fractures have been reported. Aim : To report outcomes of 50 consecutive patients treated with PFN A (Proximal femoral nail antirotation) for trochanteric fractures. Patients and methods : 30 women and 20 men in the elderly age group ( range,70-99 years) with trochanteric femoral fractures underwent PFN fixation with a PFN A nail (proximal femoral nail antirotation ) between the periods of January 2011 and January 2013. Fractures were classified according to AO system; the most common being A2 followed by A1 and A3. We evaluated mean operation time, time to ambulation, average union period, changes in neck shaft angle, complications and performed radiographic reviews. Functional outcomes were assessed using Parker mobility score. Results: The average follow up in the 50 patients ranged from 6-24 months. Fracture distribution in the AO classification was A1,n=23; A2,n=18; A3,n=9. Fracture union was consistently achieved after a mean of 10.5 +/- 3 weeks. Conclusion: The new PFN A ( Proximal femoral antirotation nail ) is useful for the treatment of trochanteric femoral fractures. The helical blade improves fixation stability decreasing bone loss of the remaining bone stock and compacts the cancellous bone.

**Abstract no.: 34983**

**SUBTROCHANTERIC FRACTURES- STILL THE CHALLENGES REMAIN !!**

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**BACKGROUND:** The treatment of subtrochanteric fractures is challenging and treatment modalities and implants are constantly evolving. This study is an attempt to revisit and compare extramedullary versus intramedullary devices in relatively young population. **METHODS:** Thirty patients with subtrochanteric fractures were enrolled and treated with extramedullary or intramedullary device and followed-up till one year for clinico-radiological assessment. **RESULTS:** Mean age of patients was 37.53 yrs. Most were males between 21-40 years. Most common mode of injury was traffic accidents (66%). Fractures were classified according to Russell-Taylor classification. Forty percent were Russell-Taylor type IA, 37% type IB and 23% type IIA. Average time to surgery was 3.6 days from the day of trauma. Mean duration of surgery was 45 min for intramedullary group(group A) and 105 min for extramedullary group(group B). Average blood loss was 100 ml in group A (group B-200 ml). Mean duration of radiation exposure was 130 sec for group A (group B-40 sec). Average duration of hospital stay was 12 days in group A (group B-16 days). Excellent results were seen in 47% cases in group A and 33% cases in group B. **CONCLUSION:** Intramedullary device is a reliable implant for subtrochanteric fractures. It has high rate of union with minimal soft-tissue damage. Intramedullary fixation has biological and biomechanical advantages, but surgery is technically demanding. Gradual learning and patience is needed to make this method truly rewarding.

**Abstract no.: 34989**

**PROSPECTIVE STUDY TO COMPARE THREE DIFFERENT DRAIN PROTOCOLS IN PRIMARY KNEE ARTHROPLASTY. WHETHER TO USE DRAIN AND FOR HOW LONG?**

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Introduction: The use of suction drain in Total Knee Arthroplasty has been widely studied however controversy still exists regarding use of drain and duration for which it should be used. Present study compares between three different drain protocols followed in Primary Total Knee Arthroplasty. Materials and Methods: 150 patients were divided into 3 groups of 50 patients each; no drain, 24 hours drain and 48 hours drain. The outcomes were studied with respect to various pre-operative and postoperative patient variables till 1 year. We have evaluated the patients pre-operatively with knee range of motion, knee society score, functional knee score & VAS score. The outcomes were studied with respect to various pre-operative patient variables at different follow up till 1 year. Results: Patients with drain did statistically better than patients with no drain in terms of post operative pain, post operative soakage of dressing, superficial wound problems, gaining of range of motion, knee society score and functional knee score in early and late post-operative period. Both 24 and 48 hour groups did equally well in terms of pain relief, gaining range of motion and satisfaction. Conclusion: Thus putting drain in knee arthroplasty decreases postoperative pain, incidence of soakage and dressing with improved functional outcomes and knee range of motion. There was no other variable that was significantly different among the two drain groups except better knee score at one year follow up in 48 hrs drain group, however further randomized control trial would be needed to confirm these findings

**Abstract no.: 34995**

**FLEXIBLE INTRAMEDULLARY NAILING IN PAEDIATRIC FEMORAL FRACTURES: A RETROSPECTIVE OUTCOME ANALYSIS**

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Flexible intramedullary nailing has emerged as an accepted procedure for paediatric femoral fractures. Present indications include all patients with femoral shaft fractures and open physis. Despite its excellent reported results, orthopaedic surgeons remain divided in opinion regarding its usefulness and the best material used for nails. We thus undertook a retrospective study of paediatric femoral fractures treated with titanium or stainless steel flexible nails at our institute with a minimum of 5 years follow up. We included 73 femoral shaft fractures in 69 patients treated with retrograde flexible intramedullary nailing with a minimum follow up of 5 years. Final limb length discrepancy and any angular or rotational deformities were determined. Mean age at final follow up was 15.5 years (10-21 years). Mean follow up was 7.16 years (5.0-8.6 years). Titanium and stainless steel nails were used in 43 and 30 cases respectively. There were 51 midshaft, 17 proximal, and 5 distal fractures. All fractures united at an average of 11 weeks but asymptomatic malalignment and LLD were seen in 19% and 58% fractures respectively. LLD ranged from -3 cm to 1.5 cm. Other complications included superficial infection(2), proximal migration of nail(3), irritation at nail insertion site(5) and penetration of femoral neck with nail tip (1). There were 59 excellent, 10 satisfactory and 4 poor results. Flexible intramedullary nailing is reliable and safe for treating paediatric femoral shaft fractures. It is relatively free of serious complications despite asymptomatic malalignment and LLD in significant percentage of fractures.

**Abstract no.: 35002**

**GUIDED GROWTH MODULATION USING EIGHT-PLATE FOR ANGULAR DEFORMITY CORRECTION OF KNEE IN CHILDREN – SHORT TERM FUNCTIONAL & RADIOLOGICAL OUTCOME**

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Introduction: Angular deformities of the knee from idiopathic, congenital or acquired causes are commonly encountered in pediatric orthopaedics. Guided growth is a useful technique to correct angular deformities in children and function by tethering one side of a growing physis, thereby allowing for differential growth. Material: Period of study - Between October 2009 to October 2012. Total no. 20, Age: 4 to 14 yrs (mean 7 yrs). Pre-operative scores: Evaluation of mechanical axes, measurement of anatomical tibial femoral angle (TFA), Radiograph AP full-length weight-bearing and lateral views. Periodic follow-up at 3-month intervals. When the leg(s) is/are straight, follow-up radiographs are taken to document the correction, including neutralisation of the mechanical axis, and plate removal is scheduled accordingly. Results: With follow-up ranging from 12 to 36 months (from implantation) in this series, 18 of 20 patients (36 deformity levels) have corrected to neutral at a mean of 12 months (8–20 months) and the hardware was been removed after correction and there have been no permanent growth arrests. Four patients with bilateral genu valgum experienced rebound deformity and have since undergone repeat guided growth. Two patients with adolescent Blount disease have experienced insufficient correction. Conclusion: We recommend early intervention, via guided growth, to restore and preserve a neutral axis so that the child can enjoy a normal lifestyle while maximizing the growth potential of his or her physes. We believe that by correcting and maintaining alignment, secondary bony deformities may be ameliorated and osteotomies for angular correction deferred if not avoided altogether



**Abstract no.: 35007**

**INDIVIDUAL SPACERS FOR SEPTIC TOTAL KNEE REVISION**

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**INTRODUCTION:** Industry provides limited options for septic knee revision – spacers or moulds. Problem of treatment: pathogen could be resistant to AB of standard spacers. It can be difficult to adapt spacer on deficient femoral condyles without cementing. Cementing always leads to additional bone loss. Not adapting spacer on distal femur leads to spacer macromotion. **MATERIAL AND METHODS:** We retrospectively evaluated 27 cases of 2-stage revision. (Group I - 16 patients operated from 2005 till 2010 and Group II - 11 patients – 2011 - 2012). In Group I explanted femoral components were sterilized and placed back. Major bone defects were filled with pathogen –specific AB cement. Tibial spacers were made in a mould from bone cement with pathogen –specific AB. In addition to it in Group II we reamed and filled with spacers IM canals, stabilized femoral and tibial spacers without cementing by original technique. **RESULTS:** In Group I infection was eradicated in 62, 5%, in Group II – 90, 1%. In Group I we had 3 cases of tibial spacer dislocation, 75% of patients complained on pain and rough noise during knee motion. We had no spacer dislocations in Group II, one patient complained on pain and rough noise in operated knee during weight bearing. **Conclusion:** during the first stage of septic knee revision we recommend to open and fill IM canals with AB loaded spacers, additionally stabilize articulating femoral and tibial spacers.

**Abstract no.: 35008**

**ISOLATED OSTEOMYELITIS OF FIBULA IN PAEDIATRIC AGE : A CASE SERIES IN NORTHERN HILL REGION OF INDIA**

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Fibula is an uncommon site of osteomyelitis in isolation. We present a case series of thirteen consecutive managed fibula osteomyelitis in children in a tertiary care centre in Kumaon region of Uttarakhand , India. Study entails special references to its demographics , clinic-radiological profile and outcome .Most of the children were male with direct trauma on lateral aspect of leg as key etiology. Many of these children were delayed in presentation because of social stigma of local deity wrath as considered to be the root cause and local rituals taken as remedial measures .

**Abstract no.: 35009**

**REPAIRING CRITICAL-SIZE BONE DEFECTS WITH RAPID SCREEN-ENRICHING BONE MARROW STEM CELLS TECHNIQUE**

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**Objectives:** To explore a rapid screen-enriching bone marrow stem cells technique for bone repair. **Methods:** In the previous study, we found about 38.7% mesenchymal stem cells (MSCs) could adhere on the polyethylene filter screen, even with once filtration in 5 minutes by one layer of filter screen with larger mesh aperture than MSCs diameter. Then an innovation of a disposable rapid stem cells screen-enrich-combined circulating system with biomaterials as filter screen was developed, taking advantage of the adhesive properties of MSCs. The adhesive cells in biomaterials was observed by SEM, and the number changes of MSCs with circulating process were estimated by counting the colony-forming units (CFUs) expressing alkaline phosphatase activity in culture (CFUs/ALP+). An experiment of a critical-size tibia defect (3cm) of goat repaired by screen-enriching MSCs/beta-TCP was performed to test the rapid prepared biomaterials' effects in bone regeneration. **Results:** Bone marrow MSCs were efficiently screen-enriched, and adhered upon and inside the materials. With the optimal parameters of circulating process, 86.5% MSCs (from 60ml bone marrow) were enriched and combined simultaneously with beta-TCP in the reaction box within 10 min without cell viability deterioration. These composite biomaterials were implanted into animals, and 5/6 critical-size (3cm) bone defects of goat tibiae were repaired perfectly, compared with 0/6 goats' tibiae repaired by beta-TCP alone in 6 months. **Conclusions:** The stem cells screen reaction technique can rapidly and efficiently screen-enrich MSCs from bone marrow, and cells combine simultaneously with beta-TCP. It produces rapidly the enriched MSCs/beta-TCP during operation to promote bone regeneration.

**Abstract no.: 35010**

**SYNERGISTIC EFFECT OF A MULTIMODAL APPROACH TO BLOOD MANAGEMENT AFTER TOTAL HIP REPLACEMENT**

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Introduction: There is a substantial risk of transfusion after total hip arthroplasty (THA). Our institution utilizes a preoperative blood conservation program (BCP) to lower this risk. We recently began using IV tranexamic acid (TEA) to further minimize the risk of transfusion. The purpose of this study was to determine if a combination of these approaches could synergistically decrease the risk of transfusion. Methods: We identified 254 consecutive primary THA patients treated during 2012. 123 patients participated in the BCP where they were given erythropoietin, iron or dietary recommendations based on Hgb levels. 215 patients were treated with tranexamic acid. Patients were stratified according to which interventions they received. Group 1 consisted of 73 patients who participated in BCP and received TEA. Group 2 had 50 patients that participated in BCP but did not get TEA. Group 3 was 142 patients that got TEA, but no BCP. Group 4 was 19 patients that had no BCP and no TEA. Transfusion rates were assessed for all groups. Results: There were a total of 25 transfusions (9.8%). There were 3 transfusions (4.11%) in group 1 and 5 (10.0%) in group 2. Group 3 had 13 transfusions (9.2%) and there were 4 (21.0%) in group 4. Discussion: Both BCP and TEA decreased by half the incidence of transfusion compared to no intervention. The combination of BCP and TEA produced a synergistic effect lowering the incidence of transfusion even further. The combination of these tools could make transfusion a rare event for THA patients.

**Abstract no.: 35013**

**REASONS OF FAILURE AFTER AUSTIN MOOR ARTHROPLASTY IN HOSPITAL OF TRAUMATOLOGY AND ORTHOPAEDICS.**

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Introduction: Hip neck fractures are associated with impaired mobility, excess morbidity and mortality, and loss of independence. Considering high prevalence of osteoporosis in Latvian population, hip neck fractures remain a public health concern. The most common treatment method is AMA. Projecting the contributions of long time results to the future global burden of the disease, new selection criteria in the treatment algorithm have to be introduced. Objective: Retrospective analysis of the reasons of failure after AMA. Materials and Methods: 99 patients were analysed after failed AMA between 2005 and 2012. All failures were classified into nine groups. There were 29 men and 70 women in the study group. X-rays were analyzed, special questionnaire was designed. Functional results were evaluated according to HHS. MS Office Excel and SPSS 13.0 (SPSS Inc) were used for statistical analysis. Statistical significance was set at  $p < 0.05$ . Results: 134 RHA surgeries for failed AMA were performed. The mean age was 72 years (range 44-86 years). Mean survivorship was 3 years, mean complaint was 2,6 years. Reasons of failure were acetabular erosion  $n=28(28,3\%)$ , protrusion  $n=8(8,1\%)$ , aseptic loosening  $n=26(26,3\%)$ , infection  $n=9(9,1\%)$ , periprosthetic fracture  $n=14(14,1\%)$ , instability  $n=3(3\%)$ , malposition  $n=6(6,1\%)$ , mechanical damage of prosthesis  $n=3(3\%)$ , others  $n=2(2\%)$ . Proved osteoporosis rate in the study was  $n=34(34\%)$ . Average HHS improved from 30 (range 0–53) to 65 (range 0-89). Conclusion: The main group of reasons of failure was acetabular erosion and protrusion. Based on these retrospective analysis outcomes, bone quality should be considered as a criterion in the treatment algorithm.

**Abstract no.: 35015**

**COMPARISON OF THE EFFICACY OF TWO ANTERIOR CERVICAL DECOMPRESSION AND FUSION PROCEDURES FOR HIRAYAMA DISEASE: A PROSPECTIVE RANDOMIZED CONTROLLED TRIAL**

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Objective: To investigate and compare the surgical effectiveness of two anterior cervical decompression and fusion procedures. Methods: Between September 2007 and September 2010, we performed anterior cervical decompression and fusion procedures on 48 patients with Hirayama disease randomized into 2 groups. One group underwent anterior cervical discectomy decompression with autologous iliac crest bone grafting and internal fixation with plate (discectomy decompression and fusion group, DDF). The other group underwent anterior cervical corpectomy, posterior longitudinal ligament resection, autologous iliac crest bone grafting and internal fixation with plate (corpectomy decompression and fusion group, CDF). Patients were followed up with subjective assessments and electromyography (EMG) examinations. Results: The mean follow-up duration was 25.9 months, and subjective assessments suggested that symptoms were improved in 65% of the patients. EMG examinations revealed that the overall success rate was 60%. All the patients, the symptoms had no aggravation postoperatively. There were no significant correlations between surgery effectiveness and age at symptom onset, affected upper limb preoperative symptom duration or postoperative follow-up time. No significant difference in clinical effectiveness was found between the DDF and CDF groups. Conclusion: In Hirayama disease patients that have a clear clinical diagnosis, recently aggravated symptoms (within 6 months) and can not tolerate to wear cervical collar continuously for a long time, anterior cervical decompression and fusion could effectively prevent further symptoms deterioration with good short-term therapeutic effects. A longer follow-up observation is required to evaluate the long-term therapeutic effects of anterior cervical decompression and fusion in Hirayama disease patients.

**Abstract no.: 35020**

**EARLY RESULTS OF THE PONSETI METHOD FOR THE TREATMENT OF  
NON IDIOPATHIC (SYNDROMIC) CLUBFOOT**

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Background: Clubfoot occurs in approximately one in 1000 live births and is one of the most common congenital birth defects. Although there have been several reports of successful treatment of idiopathic clubfoot with the Ponseti method, the use of this method for the treatment of other forms of clubfoot has not been reported. The purpose of the present study was to evaluate the early results of the Ponseti method when used for the treatment of non idiopathic clubfoot . Methods: Fourteen consecutive infants (twenty-four feet) with syndromic clubfoot deformity were managed with the Ponseti method (nineteen feet belonged to AMC group, three feet had amniotic band syndrome and two feet belonged to spina bifida group) .The severity of the foot deformity was classified according to the grading system of Pirani and Dim'eglio et al. Recurrent clubfoot deformities or complications during treatment were recorded. Results : The mean age at presentation for non idiopathic clubfeet was 6 weeks. The mean follow-up time was eight months.Initial correction was achieved in all clubfeet with a mean of 6 casts (95% confidence interval, 4.1 to 7.9 casts).A percutaneous TAT was required in all cases. Relapse was seen in one foot 5 months post tenotomy which was successfully treated with recasting. Conclusions : Our early-term results support the use of the Ponseti method for the initial treatment of syndromic clubfoot deformity. However longer follow-up will be necessary to assess the risk of recurrence and the potential need for corrective clubfoot surgery in this patient population.

**Abstract no.: 35024**

**MOHS' PASTE FOR PREOPERATIVE LOCAL CONTROL OF SOFT TISSUE SARCOMA: A CASE REPORT**

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Mohs' paste is composed of zinc chloride and is an escharotic agent. It was first introduced for curative chemosurgery in skin cancer, but palliative use for local control in advanced cases of breast, skin, and head and neck cancer has also been reported. We present a case of pleomorphic sarcoma of the right chest in a 44-year-old man, in which preoperative control of bleeding and exudate was successfully done using Mohs' paste, and was able to complete the scheduled neoadjuvant chemotherapy. The patient had undergone unplanned intralesional resection of the tumour at another hospital. Since the postoperative histological diagnosis was high grade pleomorphic sarcoma, he was referred to our hospital. Local recurrence was seen immediately after the primary surgery, and rapid growth of the recurrent tumour forming a bulky hemorrhagic mass was observed. Computed tomography (CT) and magnetic resonance imaging (MRI) showed a 12 by 14cm tumour invading into the chest wall, but with no apparent metastases. Considering the extent of the tumour, we chose to perform neoadjuvant chemotherapy before surgery. Since continuous bleeding and massive exudate was impairing the patient's quality of life, we applied Mohs' paste to the tumour. A remarkable decrease of bleeding and exudate was achieved. Along with chemotherapy, subsequent debulking after the application of paste led to remarkable reduction in tumour size. Chest wall resection and reconstruction was successfully performed after scheduled chemotherapy. Mohs' paste was effective for preoperative local control in our case of soft tissue sarcoma, and broadened the choice of treatment.



**Abstract no.: 35026**

**OPERATIVE SAFETY ANALYSIS OF TRANSFORAMINAL LUMBAR INTERBODY FUSION BASED ON THE ANATOMICAL STUDY BY MAGNETIC RESONANCE NEUROGRAPHY**

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Objective: To measure the related anatomical parameters of lumbosacral nerve root and adjacent structures by magnetic resonance neurography, and further to analyze operative safety of transforaminal lumbar interbody fusion. Methods: Select 12 (6 male, 6 female) normal healthy volunteers and take magnetic resonance neurography for lumbosacral nerve root at 3.0T Siemens MR instrument. Reconstruct the three-dimensional imaging in the Osirix software and measure the following anatomic parameters: 1) the distance between nerve root and superior pedicle; 2) the distance between nerve root and inferior pedicle; 3) the angle of nerve root with sagittal plane; 4) the distance between superior and inferior nerve roots; 5) the distance between superior and inferior pedicles. Results: L1-L5 nerve roots got a good imaging by MRN technology in all 12 volunteers. The distance between nerve root and superior pedicle and the angle of nerve root with sagittal plane gradually became smaller from L1 to L5. The distance between superior and inferior pedicles closely related to the operating space of TLIF in Chinese male and female were  $8.99 \pm 0.88\text{mm}$  to  $10.72 \pm 1.01\text{mm}$ ,  $7.76 \pm 0.46\text{mm}$  and  $8.54 \pm 0.65\text{mm}$ , respectively. Various segments in the majority of subjects were less than 10 mm, and the female data was significantly smaller than the male. Conclusion: Based on the above anatomical study and measurement analysis, we believe that there is some harassment to the upper nerve root in TLIF, and for some patients there is a certain injury risk.

**Abstract no.: 35034**

**DOES OBESITY AFFECT THE RATE OF RECURRENT HERNIATED NUCLEUS PULPOSUS AFTER LUMBAR MICRODISCECTOMY?**

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**Introduction:**The relationship between obesity and recurrent herniation of the nucleus pulposus (HNP) following lumbar microdiscectomy remains unclear.**Objective:**To investigate the relationship between obesity and recurrent HNP following lumbar microdiscectomy.**Methods:**Case notes were reviewed retrospectively, for all patients who underwent one level lumbar microdiscectomy performed by a senior spinal surgeon between 2008 and 2011. All patients were followed up at 2 weeks, 6 weeks and given an open appointment for 6 months. Patient demographics were collected including the BMI. Obese patients were classified as BMI $\geq$ 30. The primary outcome measure was evidence of recurrent HNP on post-operative MRI scan requiring further surgery. Logistic regression analysis was used to analyse the risk of recurrent HNP, BMI & complications. Exact Fisher test and Chi-Square test were used to assess the contingency table. A total of 283 patients were available for analysis, 190 (67%) in non-obese and 93 (32.9%) in the obese group. Average BMI was 28.1. Average length of stay was 1.3 days. Dural leak occurred in 11 patients (3.9%) of which 8 (4.2%) occurred in non-obese group and 3 (3.2%) in obese group {p=0.04}. 4 patients had post-operative infection, 2 (1%) in non-obese and 2 (2.2%) in obese group {no significant difference}. Recurrent symptomatic HNP was seen in 27 (9.5%), confirmed by MRI scan. 19 (10%) occurred in non-obese group and 8 (8.6%) in obese group {p>0.8}. **Conclusion:**Obesity was not a predictor of recurrent HNP after lumbar microdiscectomy and did not have increased rates of complications compared to the non-obese group

**Abstract no.: 35036**

**REVERSE DOME OSTEOTOMY IN CUBITUS VARUS : A NEW TREATMENT MODALITY WITH NEWER POSSIBILITIES**

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Background : Patients with cubitus varus deformity demand for cosmetic correction. Reverse Dome osteotomy is a completely new operative technique to achieve cosmesis, avoid lateral condylar prominence and address the difficulties faced in other treatment modalities. Patients and methods : In a prospective study, 24 patients (17 males and 7 females) of cubitus varus were subjected to reverse dome osteotomy in Medical College Kolkata during February 2009 to April 2011. Average follow up was of 2 years. Clinical outcome was evaluated with Barrett questionnaire and Bellmore criteria. Results : Pre operative carrying angle was 2 to 30° varus (average – 17°) and post operative was 8° to 25° valgus ( average – 12.2°) . No loss of correction was noted and all osteotomies united. Lateral condylar prominence index was negative both pre and post operatively. Two of our patients were lost in follow up. In one the cases under correction was evident by the lazy S deformity in the serial follow up. 58.82% patients came up with excellent results. One patient had ulnar nerve neuropraxia with eventual complete recovery and another patient had early post operative infection that was managed conservatively. Conclusion : Reverse Dome osteotomy is safe, simple, technically sound procedure for cosmetic improvement and better functional outcome. Key words : Cubitus varus, reverse dome osteotomy.

**Abstract no.: 35037**

**HYBRID SPINAL FIXATION – DOUBLE LEVEL IPSILATERAL TLIF AND PEDICLE SCREW WITH CONTRALATERAL TRANSLAMINAR FACETAL SCREW FIXATION - A CASE REPORT**

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Spinal stabilization and fusion has been the gold standard surgical procedure for spinal stenosis with instability. Here we present our patient with double level spinal stenosis with instability managed by double level hybrid spinal stabilization. A 45 years old female patient presented to us with the complaints of lowback pain radiating to her lower limbs associated with numbness. On examination mild tenderness at lumbosacral junction with SLRT positive at 45° on the right side. Spinomotor examination revealed motor weakness of right toe dorsiflexion by one grade with sensory impairment over L5 and S1 dermatome and absent ankle jerk. X ray lumbosacral spine which revealed loss of lumbar lordosis and disc height at L4-5 and L5-S1 levels with angular instability with L5 retrolisthesis. MRI spine revealed large disc prolapse at L4-5 and L5-S1 with nearly 50% canal compromise at L4-5 level and L5 retrolisthesis with large disc prolapse at L5-S1. With this background patient was planned for right transforaminal decompression of L4-5 and L5-S1 with interbody fusion with bean cage and stabilization with right sided pedicle screw fixation from L4 to S1 levels and left sided translaminar facet screw fixation at L4-5 and L5-S1 levels and the same was executed. Postoperatively patient had complete pain relief and is now at 6 months follow up with significant improvement in pre and postop VAS and Oswestry scores. key words: lumbar canal stenosis, instability, TLIF, pedicle screws, translaminar facet screw

**Abstract no.: 35038**

**COMPUTER NAVIGATION MEASURED RANGE OF MOTION PREDICTS NEED FOR MANIPULATION UNDER ANESTHESIA AFTER TOTAL KNEE ARTHROPLASTY**

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Introduction: Computer navigation for total knee arthroplasty (TKA) has proven to be a reliable tool. However, its role in predicting postoperative complications has not been evaluated. The purpose of this study was to investigate the ability of navigation measured ROM to predict postoperative ROM and requirement for manipulation under anesthesia (MUA). Methods: Twenty-eight primary TKA patients who required MUA (cases) were retrospectively matched by age and gender to an equal number of patients who achieved satisfactory (full extension and  $> 110^\circ$  of flexion) ROM (controls). All patients had TKA performed using an image-free navigation system and received the same brand prosthesis. The ROM of all patients was measured and recorded with the navigation system prior to bone cuts (pre-op) and after cementing of implants (intra-op). The case and control groups were compared for complications and ROM values. Results: Pre-op extension and flexion as well as intra-op extension and flexion showed a significant difference between cases and controls ( $p < 0.01$ ). However, a logistic regression model found only pre-op flexion to be an independent predictor that discriminated between the groups ( $p = 0.02$ , OR = 1.09 [1.01-1.19]). Pre-op flexion  $> 112.5^\circ$  was 96% sensitive and 64% specific to exclude the possibility of postoperative stiffness requiring MUA (area under ROC curve: 0.86 [CI: 0.76-0.96]). Discussion: Navigation is a useful tool to measure ROM before and after TKA implantation. Knee flexion measured prior to bone cuts was the single most important factor to exclude the possibility of postoperative stiffness requiring MUA.

**Abstract no.: 35040**

**SOFT TISSUE RECONSTRUCTION IN OPEN AND NEGLECTED SKELETAL INJURY**

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Introduction : Optimal care of open, high-velocity, lower limb injury requires surgical skills in debridement, skeletal stabilization, and in providing appropriate soft tissue cover. Timely coordination between orthopaedic and plastic surgeons, though ideal, is often difficult. In our center, orthopaedic surgeons undertake comprehensive treatment of open fractures including soft tissue cover. We reviewed the results of the local flaps of upper and lower limb, done by orthopaedic surgeons. Methods : We retrospectively reviewed the results of the upper and lower limb flaps done between January 2010 and September 2012. There were 65 flaps during this period. The average age was 39 years. Sixty-three patients had Type IIIB Gustilo and Anderson injuries. Two patients had neglected open joint injuries. The indications for flaps were exposed bone, and joint in 63, and 2 respectively. The flaps done were 5 reverse sural artery, 7 soleus, 21 gastrocnemius, 25 local fasciocutaneous, five abdominal and two groin flaps. The flap dimensions ranged from 2 × 2 to 25 x 10 cm. Results : Sixty flaps healed primarily. Among 5 flaps with necrosis, 3 flaps required secondary split skin graft for healing, while the other two flaps healed without further surgery. Appropriate soft tissue cover provided by orthopedic surgeons can help in providing independent, composite care of lower limb injuries.

**Abstract no.: 35041**

**RESULTS OF A SPECIFIC I&D PROTOCOL FOR ONE-STAGE TREATMENT OF ACUTE PERIPROSTHETIC JOINT INFECTION IN TOTAL KNEE ARTHROPLASTY**

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Introduction: Incision and drainage with liner exchange for acute periprosthetic joint infection (PJI) after total knee arthroplasty (TKA) has variable success in the literature. The purpose of this study is to present results of a specific protocol for I&D with retention of the components. Methods: A single-surgeon series of 36 consecutive patients undergoing I&D with polyethylene exchange was retrospectively evaluated. 25 patients had at least one-year followup (mean 2.2 years). Inclusion criteria for I&D were: 1) Less than 3 weeks of symptoms, 2) No immunologic compromise, 3) Intact soft tissue sleeve, and 4) Well-fixed implants. I&D consisted of extensive synovectomy, irrigation with 3L Betadine solution, 3L Dakin's solution, 3L Bacitracin solution, and 3L normal saline, exchange of the polyethylene component, and IV antibiotics at the discretion of an infectious disease (ID) specialist. Infection was considered eradicated if the wound healed without persistent drainage, there was no residual pain, and no infection recurred. Results: 18 patients (72%) achieved successful eradication. Among the 7 that were considered failures, 4 (16%) underwent reoperation due to persistent infection and three (12%) complained of persistent knee pain. It is important to disclose that 4 of the successful cases continued on oral antibiotics per recommendation of ID even though they had no symptoms of persistent infection. Discussion: Our protocol for one-stage treatment of TKA PJI was successful in the majority of patients who met strict criteria. These results do not achieve the success rate of 2-stage resection, but present a more palatable option for the patient.

**Abstract no.: 35042**

**SIMPLE CURETTAGE AND BONE GRAFTING BY SYNTHETIC CALCIUM HYDROXYAPATITE(CHA) IN VARIOUS BENIGN LYTIC LESIONS OF BONE**

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**INTRODUCTION-** Curettage and bone grafting is the treatment of choice in various benign lytic lesions of bone. The bone graft substitute used may be either autograft or allograft or synthetic bone graft substitutes like synthetic CHA. Autograft is the gold standard but is available in limited quantity and is associated with donor site morbidity. Allograft is a good option but risk of disease transmission, immunogenicity and mismatch between demand and supply are some limitations. The inspiration factor for the study was to find out whether synthetic CHA can serve as an effective bone graft substitute. **AIMS-** To find out (a)functional and radiological outcome (b)recurrence rates and (c)complications in patients of benign lytic lesions after curettage and bone grafting by synthetic CHA. **MATERIALS AND METHODS-** 45 patients with various lytic lesions with or without pathological fractures like simple bone cyst(n=13), aneurysmal bone cyst(n=8), giant cell tumour(n=14), fibrous dysplasia(n=6) and others(n=4) were managed by simple curettage and bone grafting by synthetic CHA and were assessed regularly. Radiological evaluation was done by Irwin's criteria. **RESULTS-** Out of 45 cases,we found recurrence in 4.44%, infection in 6.67% and pathological fracture in 2.22%. The mean follow-up period was 26 months (range 5-84 mo). Irwin's radiological staging was I(20%), II(49%) and III(31%) at the end of follow-up. **CONCLUSION-** Synthetic CHA, though only osteoconductive and lacking osteogenic and osteoinductive property, can be an effective bone graft substitute, particularly in cases where large quantities of graft is required.



**Abstract no.: 35045**

**THE LITIGATION BURDEN OF LEG LENGTH DISCREPANCY FOLLOWING TOTAL HIP REPLACEMENT SURGERY - A NATIONAL STUDY**

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**Introduction:** Despite the high reported satisfaction rates of hip arthroplasty, there are a number of well recognised complications. Patients can suffer from leg length discrepancy that can lead to claims of negligence. **Methods:** We examined the records of two national databases (UK National Joint Registry and National Health Service Litigation Authority) over a 5 year time period (2005-2010) to determine the value of claims related to leg length discrepancy. A comparison with the number of procedures carried out over the same time period determined the rate of litigation for leg length discrepancy. **Results:** There were 362 claims related to hip surgery out of a total of 4614 claims for negligence related to orthopaedic surgery during the time period. In 59 cases there was a reference to leg length discrepancy. Over the same time period, 272,245 hip arthroplasty procedures were undertaken in England. This gave a litigation rate of 0.02% of hip replacement patients. Only 43% of these cases were won and resulted in damages awarded. The mean payment for damages was £59600 (\$89000). **Discussion:** The reported rate of leg length discrepancy in the contemporary literature ranges from -20mm to +35mm with 87%-97% of patients in various case series reported to be within 10mm. A recent study suggested that leg length discrepancy does not seem to be related to functional or patient satisfaction outcomes. **Conclusions:** The results in this study suggest that a very small proportion of patients in the UK pursue a negligence claim for leg length discrepancy, however the cases that are successful are settled for substantial sums.

**Abstract no.: 35047**

**SOFT TISSUE RECONSTRUCTION IN OPEN AND NEGLECTED SKELETAL INJURY**

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Introduction : Optimal care of open, high-velocity, lower limb injury requires surgical skills in debridement, skeletal stabilization, and in providing appropriate soft tissue cover. Timely coordination between orthopedic and plastic surgeons, though ideal, is often difficult. In our center, orthopedic surgeons undertake comprehensive treatment of open fractures including soft tissue cover. We reviewed the results of the local flaps of upper and lower limb, done by orthopedic surgeons. Methods : We retrospectively reviewed the results of the upper and lower limb flaps done between January 2010 and September 2012. There were 65 flaps during this period. The average age was 39 years. Sixty-three patients had Type IIIB Gustilo and Anderson injuries. Two patients had neglected open joint injuries. The indications for flaps were exposed bone, and joint in 63, and 2 respectively. The flaps done were 5 reverse sural artery, 7 soleus, 21 gastrocnemius, 25 local fasciocutaneous, five abdominal and two groin flaps. The flap dimensions ranged from 2 x 2 to 25 x 10 cm. Results : Sixty flaps healed primarily. Among 5 flaps with necrosis, 3 flaps required secondary split skin graft for healing, while the other two flaps healed without further surgery. Appropriate soft tissue cover provided by orthopedic surgeons can help in providing independent, composite care of lower limb injuries.

**Abstract no.: 35049**

**NEGATIVE-PRESSURE WOUND THERAPY (NPWT)**

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Negative-pressure wound therapy (NPWT) is a therapeutic technique using a vacuum dressing to promote healing in acute or chronic wounds. The therapy involves the controlled application of sub-atmospheric pressure to the local wound environment, using a sealed wound dressing connected to a vacuum pump machine. The continued vacuum draws out fluid from the wound and increases blood flow to the area. The vacuum may be applied continuously or intermittently by a switch in the machine, depending on the type of wound being treated and the clinical objectives. The dressing can be changed two to three times per week. The dressings used for the technique include foam (reticulated). The VAC therapy can be combined with saline or antibiotic irrigation. With these techniques, once the dressing is sealed the vacuum pump can be set to deliver continuous or intermittent pressures, with levels of pressure depending on the device used, varying between  $-125$  and  $-75$  mmHg depending on the material used and patient tolerance. A switch in the machine can apply pressure constantly or intermittently. The paper presentation shows the series of clinical picture and healing in various orthopedic situations. NPWT represents an evidence based modality that stimulates wound closure by providing a moist healing environment, reducing peri-wound edema, increasing peri-wound circulation, decreasing bacterial bio-burden & increasing granulation tissue. NPWT is safe and cost effective when used within appropriate guidelines and indications.

**Abstract no.: 35050**

**ANTIBIOTIC IMPREGNATED ROD :- METHOD OF MAKING A SMOOTH ROD FOR EASY INSERTION / RETRIEVAL**

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Introduction : Infected non-union is a difficult condition to manage and elimination of infection requires various modalities of treatment in stages. Antibiotic impregnated rod is one such modality. We describe an easy and reproducible technique of making an antibiotic impregnated rod, which can be easily inserted in the medullary canal with press-fit providing stability & suitable medium for antibiotic elution. This smooth antibiotic impregnated rod helps control of infection and achieves union. Procedure : Removal of implant, if any. Reaming of the medullary canal till at least 2-3 mm more than the previous rod. Thorough debridement of surrounding soft tissue and medullary cavity with removal of biofilm. We prepare the antibiotic impregnated rod on a selected length of "K" nail 7 mm in diameter. The rod is coated with antibiotic impregnated cement by putting in slit rubber pipe whose inner diameter is 1mm less than the reamed canal. Once the rod is put in slit cannula we roll the rod over a flat surface, till it is set, leaving the eye of "K" nail open to help us in future extraction. Results : All the 6 patients we treated by this method healed within 4 - 6 months with good bony healing and clinical control of infection. Conclusion : Antibiotic impregnated cement rod is an easy and effective method with predictable results for treatment of infected non union in selected patients. Rolled smooth surface rods are easy to insert & retrieve without residual cement after retrieval.

**Abstract no.: 35053**

**REAMER IRRIGATOR ASPIRATOR (RIA ) SYSTEM: EARLY EXPERIENCE  
OF ITS USE WITH INDUCED MEMBRANE TO FILL UP BONE DEFECTS**

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The evolution of contemporary intramedullary reaming systems has recently generated the Reamer Irrigator Aspirator system (RIA-Synthes), which has progressively gained in popularity as it yields impressive volumes of the osteoinductive and osteogenic reaming debris for grafting purposes. The RIA device is a single-pass reamer that is connected to an aspirator and irrigator through two separate ports, permitting the surgeon to simultaneously ream, irrigate, and aspirate contents from the femoral canal at the tip of the reamer. The harvested bone graft is then collected into a filtered suction cup that separates cancellous bone from the supernatant fluid. This paper discusses the technique in pictorial details for harvesting of bone grafts for large bone defects and discusses the potential complications Conclusion : RIA graft harvesting is a safe graft source and provides large volume of bone graft having osteoinductive and conductive properties, providing a alternative method to the fragment transport

**Abstract no.: 35055**

**TREATMENT OF DISPLACED FRACTURE OF NECK FEMUR IN OSTEOMALACIA**

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Aim of this study is to assess union in patients of displaced fracture neck of femur in osteomalacia. Which is a generalized disorder of bone in which impairment of mineralization results in the accumulation of unmineralized osteoid. When a patient is proven to have osteomalacia in the context of fractured neck of femur it is mandatory to treat the deficient state with vitamin D replacement. If the deficiency is due to dietary lack and/or low sunlight exposure the usual regimen is an intramuscular loading dose of 300 000 units (7.5 mg) vitamin D followed by an oral supplement of 400–800 units daily, though recommendations vary and large-scale trial evidence is lacking. Treatment of displaced fracture of neck femur in osteomalacia requires gentle reduction, minimal osteosynthesis, rest period for healing, delayed ambulation. Union rate observed is very high, coxavara is common after healing, no case of AVN was observed in our series. We have treated 25 patients of osteomalacia fracture from 1990 upto 2010 the most remarkable feature noted was no evidence of avascular necrosis in any of our cases. 24 cases healed primarily, 1 patient required vulgus osteotomy. Long term results are presented in this series.

**Abstract no.: 35056**

**INFLUENCE OF PRE-OPERATIVE RANGE-OF-MOTION AND DEFORMITY ON PAIN RELIEF AND FUNCTIONAL RANGE OF MOTION FOLLOWING TOTAL KNEE REPLACEMENT “A PRIVATE HOSPITAL-BASED RETROSPECTIVE OBSERVATIONAL STUDY”**

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Abstract: The goals of total knee replacement (TKR) are to relieve pain, increase joint stability, and lastly to increase the range of motion (ROM) of knee joint. These 3 goals achieved together bring about improved function; depicted by the efficiency, endurance, and tolerance to work. We retrospectively reviewed 54 patients (94 knees) with varying degree of ROM and deformity (mean age,  $64.61 \pm 9.16$  years) who underwent TKR. All the patients had a diagnosis of primary osteoarthritis with no previous surgery to the knee, identical prostheses implanted with the same surgical technique by the same surgeon. The minimum follow-up was 1 year (range, 1–7 years). The mean preoperative Knee Society clinical score and functional scores were 71 and 35 points, respectively, and postoperatively they were 119 and 82 points respectively. Preoperative range of motion was found to significantly affect the postoperative functional ROM. There was a significant improvement in flexion and reduction of flexion contracture at each successive review, up to 12 months after operation. Patients with restricted movement due to flexion contracture before operation showed a satisfactory gain at final review but no significant correlation was made between preoperative flexion contracture and final functional ROM. Our study concluded that Total Knee replacement as a procedure is worthwhile to be done in elderly population with stiff knees.

**Abstract no.: 35061**

**RADIOLOGICAL OUTCOMES OF THE OLDER PATIENTS WHOM WERE TREATED WITH INTRAMEDULLARY HIP NAIL FOR UNSTABLE HIP FRACTURES**

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**Objective:** In this study we aimed to evaluate the radiological outcomes of the patients older than 65 years old whom were treated with intramedullary hip nail for unstable hip fractures. **Methods:** 266 patients in geriatric age group were treated with intramedullary hip nail. 184 patients [112 women and 72 men, mean age 79.2 (65-111)] with at least a one year follow up were included in the study. All of the fractures were classified unstable according to AO classification. Reduction and fixation were achieved on fracture table and use of C-arm. Post operative reduction and radiological outcomes were assessed retrospectively according to Baumgaertner criteria's that was modified by Fogagnolo et al. **Results:** %82.4 of patients had good or acceptable reduction. Femoral shaft fracture in 3 patients and additional greater trochanter fracture occurred in 34 patients during surgery. K- wire cerclage was used in 9 patients to achieve reduction. Non-union was occurred in 8 patients. We observed secondary varus in 22 patients. Late complications were; calcification in the tip trochanter majus in 17 cases, the reverse Z-effect in 5 cases, loosening of screws in 13 cases and screw cut out in 8 cases. 17 patients were underwent secondary surgery. **Conclusion:** The radiological outcomes of intramedullary nails to treat unstable trochanteric fractures in elderly patients have satisfactory results. Most of the complications donot effect union and the need of secondary surgery is low. These findings show that a stable fixation was achieved.



**Abstract no.: 35062**

**A PROSPECTIVE STUDY OF POST TREATMENT RESIDUAL DEFORMITIES IN SUPRACONDYLAR FRACTURES OF HUMERUS IN CHILDREN**

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Background- although supracondylar fractures constitute a large chunk of paediatric fractures in orthopedics emergency there has not been any concern on the mode of management with treatment undergoing evolution. Fracture is notorious for difficulties it presents like stiffness, malunion, nerve injuries, VIC. Our study aims to bring consistency to management. Material and method- our study is of 40 children with supracondylar fracture humerus who came in emergency. After examination treatment was done with closed reduction and POP cast application or closed reduction and percutaneous k-wire fixation or open reduction and k-wire fixation. Result was assessed via Mitchell and adams criteria(1961). Result- closed reduction with POP cast gave good results in type 1 fractures whereas closed reduction with k-wires gave an excellent result in type 2 and open reduction and k-wire fixation gave generally excellent result with type 3 along with closed reduction. Conclusion- closed reduction with POP cast be carried out in type 1 unless medial comminution is seen. Closed reduction with percutaneous k-wire should be carried out in all cases of type 2 and 3 fractures. Open reduction with k-wire fixation be done in those cases where closed reduction is not achieved.

**Abstract no.: 35065**

**TITANIUM ELASTIC NAILS (TENS) FOR PEDIATRIC FEMUR FRACTURES: A CLINICAL AND RADIOLOGICAL STUDY**

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Background: Management of femoral diaphyseal fractures in the age group 6-16 years is controversial. There has been a resurgence worldwide for operative fixation. Material and methods: 50 children (35 boys, 15 girls) aged 6-16 years with femoral diaphyseal fractures were stabilized with Titanium Elastic Nail (TEN). Patients underwent surgery within ten days of their injury. The results were evaluated using Flynn's Scoring Criteria. Results: All 50 patients were available for evaluation after a mean of 24 months (15-32 months) of follow-up. Radiological union in all cases were achieved in a mean time of 8 weeks. Full weight bearing was possible in a mean time of 10 weeks (8-12 weeks). The results were excellent in 14 patients (70%) and successful in 6 patients (30%). Conclusion: Intramedullary fixation by TEN is an effective treatment of femoral diaphyseal fracture in properly selected patients of the 6 - 16 years age group. Key words: TENS, children, stability

**Abstract no.: 35066**

**INFLUENCE OF PONSETI CASTING ON FOLLOWING SURGERY FOR RELAPSED CLUBFOOT**

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Introduction. Ponseti method becomes standard procedure for primary management of congenital clubfoot. Relapsed deformities demand different approach including extensive soft-tissue releases, external fixation and bony procedures. Aim. To minimize surgical intervention for residual deformity in relapsed clubfoot using preliminary serial casting with the principles of Ponseti method. Material and method. In consequential series of 54 children with relapsed clubfeet. First group (40 feet) was presented with relapses after initial non-surgical treatment. Second group (42 feet) was presented with relapses after surgical treatment. Serial casting with the principles of Ponseti method aimed to minimize surgical intervention was used in children. Results. In the patients of Group I percutaneous Achilles lengthening and transfer of anterior tibial tendon was sufficient in 14 children (26 feet). Posterior release and limited medial release - in 6 children (10 feet). Extensive posteromedial release was carried out in 4 patients (in 3 of them talo-calcaneal coalition was observed intraoperatively). In the patients of Group II serial casting only was effective in 3 cases (3 feet). In 12 patients (19 feet) Achilles lengthening and transfer of anterior tibial tendon was done to correct residual equines and supination, added by limited medial release in 8 children (13 feet). Extensive posteromedial release with reconstruction of medial column was carried out in 7 patients (7 feet) of the age 5-6 years. Application of Ilizarov devices was avoided in all the cases. Conclusion. Serial casting with the principles of Ponseti method helps to avoid extensive surgery in patients with relapsed clubfoot.

**Abstract no.: 35071**

**KNEE ARTHROPLASTY AFTER TIBIAL OSTEOTOMY**

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TKR after high tibial closed wedge osteotomies: plans and considerations Background: The closing wedge osteotomy is made to realign the knee into valgus . Patients and Methods: 51 knees (35 females and 16 males) all had closed wedge osteotomies of proximal tibiae prior to total knee arthroplasty Results: Medio-lateral shift +2 cm reported in (19 patients) .Antero-posterior translations +2 cm reported in (8 patients) . Loss of height +2 cm reported in 38 patients. Posterior Slope: above 7degrees in two patients)and one reverse slope 3 degrees anterior. Lateral wedge 7degrees 1.4cm base fixed in one patient. Medial wedges 7degrees in (14 patients). Polyethylene inserts 17 mm insert in (5) patients; 14mm insert in (30) patients,12 mm insert in (11) patients ,10 mm insert in(5) patients. Discussion: Patella baja after closing wedge HTO occurs as a result of scarring of the patella tendon around the proximal tibia also adds to the difficulties associated with exposure, a decrease in the sagittal slope and a loss of lateral bone stock . Conclusion: Mapping of tibial position and rotation by Floating manoeuvre. Extra-tibial cutting are preferred. Variable levels of medial releases needed.Avoide creating Patella baja and restore joint line level

**Abstract no.: 35072**

**TOTAL HIP REPLACEMENT POST TRAUMA**

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Introduction: THR post trauma may be indicated in non-union, malunion, avascular necrosis or secondary osteoarthritis. Challenges include removal of implants, distorted proximal femoral geometry and un-united trochanter, broken nail, broken screws of the slide plate in failed inter-trochanteric fractures. Post traumatic arthritis after acetabular fixation is met with the hardware hindering with the reaming, inadequate bone stock or pelvic discontinuity. Fibular graft is difficult to remove from femur and may hinder in placement of prosthesis. Difficulty in performing THR in failed femoral osteotomy are distorted femoral osteotomy, and associated acetabular dysplasia. methods: Failed implants were converted to THR in 52 patients (age 42-88 yrs). 24 failed osteosynthesis of hip (dhs and nail), acetabular fractures(12), failed fibular grafting and screw fixation in femur neck fractures(10) for AVN, failed femoral osteotomy(6). Forty eight were followed up for 2 yrs and av. follow-up was 6 years. Four were lost to follow-up. fully porous coated cementless stem (6 patients), proximal porous coated stem (20 patients), cemented stem fixation was used 26 patients. Cementless acetabular component was used in 32 patients and cemented cup was used in the rest. Results: Harris hip score improved from 40 preoperatively to 90 post operatively. No deep infection, aseptic loosening, dislocations or heterotopic ossification. Two patients had superficial infection and three patients developed dvt. Survivorship analysis using component revision as end point at 5 years follow-up in patients was 100% in our series. Thr post trauma should be planned well and difficulties should be anticipated well.

**Abstract no.: 35074**

**A STUDY OF SURGICAL MANAGEMENT OF FRACTURE NECK OF FEMUR IN PATIENTS OVER FIFTY BY INTERNAL FIXATION**

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Introduction: Femoral neck fractures occur most often in the elderly and lay a huge burden on the health care system and society. Patients presenting with fracture neck of femur over the age of 60 but functionally performing as a younger individual are excellent candidates for reduction with internal fixation. Methods: Thirty cases of fracture neck of femur in patients above the age of 50 years treated by closed reduction and internal fixation with cannulated cancellous screws were selected on the basis of purposive sampling. The cases were followed up for 6 months and the short term functional results were analyzed by using Harris hip scoring. Results: Most of the patients were in the age group of 50-70. Majority (40%) of fractures were Garden type III on radiographs. 96.7% of them had minimal trauma. Of the 30 cases one patient died and one patient was lost for follow up. Thus the functional results were assessed in the remaining 28 patients. 85.7% of the hips were classified as having a satisfactory to excellent result and 14.3% of the patients had poor results. No cases of AVN were observed, one case of non union was seen. Conclusion: Osteosynthesis with cannulated screws fixation provides the patient a healed fracture with a living femoral head that is always better and less invasive than a replacement in elderly patients; The mortality and morbidity rates are less with high rates of union, operative procedure is simple, economical, complications are less disabling and early functional results are satisfactory.

**Abstract no.: 35075**

**EARLY CLINICAL OUTCOMES OF CR-FLEX FIXED AND CR-FLEX MOBILE TOTAL KNEE ARTHROPLASTY**

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Background: Mobile-bearing total knee arthroplasty (TKA) has several theoretical advantages over fixed-bearing TKA. The aim of the present study was to evaluate whether or not that the early clinical and radiographic results demonstrated the differences between CR-flex fixed and CR-flex mobile TKAs. Methods: 25 consecutive patients underwent TKA by the same surgeon using CR fixed bearing TKA (F group) and CR mobile bearing TKA (M group). Participants included 22 women and 3 men with a mean age at the time of surgery of 75.6 years. All patients had osteoarthritis. The mean follow-up was 10 months. We assessed pre-postoperative flexion and extension angles, JOA score and component angles ( $\alpha, \beta, \gamma, \delta$ ). Results: In the F group, postoperative flexion angle was 115, postoperative extension angle -2.66, JOA score 78.3,  $\alpha$ angle 95.0  $\beta$ angle 89.5,  $\gamma$ angle 2.11,  $\delta$ angle 80.9, while in the M group postoperative flexion angle 121, postoperative extension angle -0.66, JOA score 80.0,  $\alpha$ angle 96.3,  $\beta$ angle 88.5,  $\gamma$ angle 3.76,  $\delta$ angle 83.7. There was no significant difference of postoperative ROM, JOA score and component angles between F and M groups. No osteolysis, loosening, dislocation, or revision occurred. Discussion: Satisfactory early results can be achieved in both groups. However, we could not find an early advantage for a mobile bearing TKA.

**Abstract no.: 35078**

**GLENO-HUMERAL DISLOCATION WITH PHYSEAL FRACTURE IN A TODDLER--A CASE REPORT**

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Introduction: Dislocation of the gleno-humeral joint in children is rare. Fractures of the proximal humeral physis form about 3% of all physeal injuries. They may occur in children of any age but are most common in adolescents. Such fractures are almost exclusively Salter-Harris type I or II injuries and are most notable for their tremendous potential to remodel. Traditional thinking has been that non-operative treatment of pediatric proximal humeral fractures has produced good results. The reported indications for operative treatment of pediatric proximal humeral fractures have been limited. Case report: A two year girl presented with right shoulder pain after fall while playing at home. On X-ray we found, gleno-humeral dislocation with physeal separation. There is Salter-Harris type-1 proximal physeal injury with Neer's grade 3 complete separation. We took patient for closed reduction under anesthesia. Closed reduction was unsuccessful. When we opened we found biceps tendon interposition between fracture fragments. After achieving reduction we fixed it with two Kirschners wires. Discussion: In 1965, Neer concluded that, open treatment of proximal humerus fractures in children is rarely justified. There are studies which have mentioned interposition of the periosteum or the long head of the biceps tendon within the fracture site. Our purpose of this case report is to draw attention towards uniqueness of the injury pattern and to create awareness of the interposition of biceps tendon which necessitates open reduction as a treatment of choice. No long term follow up as patient had congenital heart disease and expired after 4 months



**Abstract no.: 35080**

**NO ELECTROCAUTERY IN PRIMARY KNEE ARTHROPLASTY**

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No use of electrocautery: a safe operative setup in primary total knee arthroplasty. Tripoli Medical Center- Libya Background: With no evidence, a concern is made that the absence of diathermy may predispose to hematoma formation and potential wound and deep joint sepsis. Patients and method: : Between 2001 and 2011 , 2152 primary total knee arthroplasty done with no use of electrocautery. Average operation time is 82 minutes. Follow ups 2 weeks, 4 weeks, 2 months and 6 months. If the Hemoglobin (Hb) drop more than 3 g % or below 8 g% then 3 - 4 units of fresh blood transfused. Results: Usually by the preoperative estimations of Hb level and treating anemia three weeks prior to operation with acceptable( Hb) 10g % (female) and 11g % (male); and clinically if felt dizzy on standing off the bed to walk then (Hb) rechecked and blood is given if it is below 8g%. Transfusion of two units was noted in 0.9% and transfusion of more than two units was recorded in 0.6% of the total.. Pitting edema was noticed in 9.6% of the total group. NO return for control of bleed. Drains left open for 48 hours Average amount collected is 720mls. Discussion: we record no significant difference regarding infection. Conclusion: We report no use of the cautery. Only 1.5% of patients postoperatively and zero return to theatre for bleed control. No auto transfusion either.

**Abstract no.: 35088**

**MICROFRACTURE TECHNIQUE FOR TREATMENT OF FULL-THICKNESS  
CHONDRAL LESION OF THE KNEE JOINT**

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Full-thickness chondral lesion in the knee is common and present in a variety of clinical settings and at different age group.<sup>1,2</sup> Articular cartilage defects that extend full thickness to subchondral bone rarely heal without intervention.<sup>1,2</sup> Partial thickness articular defects do not heal but fortunately , are only rarely associated with insignificant clinical problems.<sup>3</sup> chondral lesions that involve the subchondral bone may fill with fibro-cartilage, which has inferior biomechanical and biochemical features compared to hyaline cartilage.<sup>4</sup> Techniques to treat chondral defects include abrasion, drilling, osteochondral auto grafts, osteochondral allograft, and autologous cell transplantation.<sup>2,5</sup> we have used the micro-fracture technique developed by Steadman JR, to enhance resurfacing by providing a suitable environment for new tissue formation and taking advantage of the body's own healing potential.<sup>6</sup> The results after 2.5 years follow-up showed improvement in the Lysholm scale for our 25 patients(100%). Twenty three patients (92%) showed excellent results. Key words: chondral lesion, knee joint, micro-fracture technique

**Abstract no.: 35092**

**CHRONIC KNEE PAIN AFTER INTRAMEDULLARY TIBIA NAILING**

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Chronic Anterior Knee Pain is the most common complication after the Intramedullary Tibia Nailing (10-80%). The etiology of knee pain is still unknown. We reviewed retrospectively a one hundred patient with close displaced tibia shaft fractures, treated with reamed locked intramedullary nails (same design) in period from 2004 to 2010. All procedures were performed through medial parapatellar approach. Thirty seven patients reported the knee pain after surgery. The age of the patients ranged from 18 to 65 years. Twenty five were man and twelve – female. The patients were examined using standard radiographs; proximal tibia third computed axial tomography, knee ultrasound examination (patellar tendon, the retropatellar fat pad, cartilage). In the lateral view radiographs the distance between the nail with anterior cortex of the tibia and the tibial plateau (nail height) was analyzed. According to CT data the proximal oblique locking screw crossing the tibiofibular joint in 22 patients (59.5%). Seven patients (18.9%) have an average nail proximal prominence 3mm, eight (21.6%) 1-2mm. But five patients in both these groups have a screw in proximal tibia fibular joint. Anterior prominence 0, 3-1mm was determined in ten patients (27%). Eight of them have a screw in tibia fibular joint. Knee ultrasound revealed a Hoffa's pad fibrosis in eight patients (21.6%), patellar tendon slight degeneration in six patients (16.2%). According to received data, the more frequent cause of chronic anterior knee pain after tibia nailing seems to be a proximal tibiofibular joint damage and proximal or anterior nail prominence.

**Abstract no.: 35094**

**RESULTS OF TWO STAGE MANAGEMENT OF SEVERELY COMMINUTED  
DISTAL RADIAL FRACTURE**

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Introduction :severely comminuted distal radial fracture are difficult to manage. They invariably displace and malunite in plaster cast and are difficult to fix on account of comminution and osteoporosis and soft tissue oedema. Methods:27 cases (9males 18 females average age 61.3 years) of comminuted displaced distal radial fractures were treated by two stage surgeries. A spanning external fixator with a distractor device was applied across the wrist.Reduction was achieved under x-ray image control and maintained by ligamentotaxis for two weeks.Soft tissue oedema subsided and MCP and IP joint movements were restored. The second surgery was performed 2 weeks later. The fixator was removed and the fracture stabilized with a corner locking plate. Wrist movements and pronation/supination exercises were instituted. Results: all cases had rapid wound healing and return of function with pain relief. Average range of dorsiflexion was 65degrees. Palmar flexion was 45 degrees, supination/pronation was 75 degrees. Grip strength satisfactory.

**Abstract no.: 35097**

**TRANSOSSEOUS OSTEOSYNTHESIS FOR ORGAN-RECONSTRUCTIVE  
TREATMENT OF PATIENTS WITH HAND BONE TUMOURS**

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The material for the analysis were 343 medical records of the patients who underwent treatment between 1992 and 2012 in the center of hand surgery with primary hand bones tumours. Primary reconstruction procedures considerably reduce the treatment period. The fixator for transosseous osteosynthesis was applied after bone resection due to tumour. That aimed preservation of the operated ray anatomical length. In cases of small bone defects the grafts were placed into the defect area followed by mild compression in the fixator to accelerate the reparative process. In extensive defects, graft was mandatory fixed through additional wires to the fixator. Application of the apparatuses enables stable fixation and the possibility to train motion to restore the functioning of tendons and joints.

**Abstract no.: 35101**

**THE COMPARISON OF LEGS' SHAPE CHANGING'S RESULTS BY VARIOUS TYPES OF EXTERNAL FIXATION DEVICES**

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Circular external fixation devices provide high rigidity of fixing and the most ample opportunities for manipulation with bone fragments, but are bulky and uncomfortable. Half-rings devices provide lower rigidity of fixing and opportunities for manipulation, but are smaller and more comfortable. Its application allows bringing together both legs. That is why it's possible to estimate authentically legs' shape by patient and correct by doctor. From 2006 to 2012 for legs' shape changing 42 patients were operated. 23 patients of the first group were operated by original external fixation devices. The distinctive feature of assembles is possibility of transformation of circular support to half-rings. Second group of the 19 patients were operated by circular assembles. At an assessment of the reached shape of legs the subjective and objective rating was considered. We used five-point system. Subjective rating of the result was performed by patient, objective rating - by doctor. In the first group of patients subjective and objective rating was  $3,93 \pm 1,05$  and  $4,52 \pm 0,44$  points, in the second group -  $3,46 \pm 0,90$  and  $4,13 \pm 0,73$  points. In the first group the poor subjective results haven't been. In two cases of the second group non-union of the tibia was observed. The poor subjective results (5 cases) in first group caused by voluntary implementation of the additional correction, choosing the wrong type of operation due to the lack of a precise description of the patient desired shape legs. The poor subjective results (2 cases) in second group caused by the unreliability of assessment of legs' shape.

**Abstract no.: 35102**

**RESULTS OF ARTHROSCOPIC CAPSULAR RELEASE IN FROZEN SHOULDER: TWO YEARS FOLLOW-UP**

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Aim-To study the effect of arthroscopic capsular release in patients of frozen shoulder not responding to conservative management. Method-Twenty patients with idiopathic frozen shoulder and diabetes were taken into study with ten patients in each group and subjected to arthroscopic capsular release by single surgeon followed by physiotherapy. They were assessed using VAS score, range of motion and oxford shoulder score at baseline, one month, three months, six months, one year and two year. Results- Patients did not differ to each other significantly at baseline. There were statistically significant improvements in VAS score, range of motion and oxford shoulder score at two year follow up in both group. Results were less pronounced in diabetic patients but there was no significant difference between two groups. There were no complications. Conclusion- Our study found that arthroscopic capsular release is effective treatment for both idiopathic frozen shoulder and frozen shoulder associated diabetes in term of pain, range of motion and quality of life.

**Abstract no.: 35113**

**ONCOLOGY OF HAND: A COMBINATION OF TRANSOSSEOUS OSTEOSYNTHESIS AND SKIN PLASTY**

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Introduction: The most important stage of reconstructive and restorative surgeries after remove the tumour of the hand is the closure of wound. The work is aimed at demonstration of the possibility to combine skin plasty and transosseous osteosynthesis fo treatment of the hand tumours. Methods: The material for the analysis were 316 medical records of the patients who underwent treatment between 1992 and 2012 in the center of hand surgery with tumours of the hand. All these patients carried dermepentthesis due to the presence of postoperative tissue defects. Primary skin plasty was used in 272 and the secondary one in 44. Depending on the condition of hand soft tissues, we use determin the version of plasty. Results: The analysis of short-term (less than 12 months) and long-term (up to 20 years) outcomes showed that in cases of commonly accepted techniques of skin plasty positive results were obtained in 73,3% and in the cases where transosseous osteosynthesis was used the success rate was 91,7%. The use of the combination of skin plasty and transosseous osteosynthesis provided a 1,5-fold reduction of the number of disability outcomes. Conclusion: The reduction of the treatment period for the patients with hand tumours that is achieved when primary reconstructive surgeries are performed in combination with transosseous osteosynthesis proves the efficiency of this trend in oncology and hand surgery.



**Abstract no.: 35122**

**EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH OSTEONECROSIS OF FEMORAL HEAD**

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**Introduction:** Osteonecrosis (avascular necrosis) is not a specific disease entity but the final common pathway of a number of conditions leading to bone death. The main predisposing factors (trauma, glucocorticosteroids, alcoholism and connective tissue disorders) should be carefully sought, but osteonecrosis can also be idiopathic in origin. The outcome for the patient is influenced by many factors, the size and localization of the bone necrosis being of primary importance. **Background:** There is a paucity of data on epidemiology of osteonecrosis in India, detecting risk factors in patients with osteonecrosis. **Materials:** An epidemiological study of around 330 patients with osteonecrosis of femoral head attending in our institute was undertaken. 17.87% had alcohol as risk factor, 31.51% had steroid as risk factor, 18.48% were post-traumatic, 13.33% causative factor is yet to be determined, 16.36% were idiopathic. Out of the 330 around 115 were operated, around 48 core decompressions were performed, 27 core decompressions with stem cell injection, 30 core decompressions with fibular grafting, 5 core decompressions with vascular fibular grafting, 5 core decompressions with vascular iliac crest graft, 4 core decompressions with muscle pedicle graft, 3 chelectomies, 2 osteotomies, 13 THR were performed. **Results:** The relevance of the study lies in the fact that most of the patients have a proposed risk factor, and around 16.4% cases were deemed idiopathic as opposed to literature where idiopathic causes were the most common, also there is no such a kind of study reported in the northern part of India.

**Abstract no.: 35124**

**WRIST ARTHRODESIS USING AO PLATE - PROCEDURE OF CHOICE IN THE FUTURE**

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Previous studies have shown that wrist arthrodesis is a technically demanding procedure which is associated with an unreliable rate of fusion and a high complication rate. In addition, loss of wrist motion is regarded as a disability making the surgeon offer it to the patient as a last resort. The case notes of 72 extremities in 64 patients operated in Ninewells and Fernbrae Hospitals from January 2000 to February 2009 were reviewed using a structured pro forma. Analysis of the data showed that all the 44 patients operated using AO plate achieved total fusion in an average 3 months period. The post-operative complications were few; overall rate being 15.9%. The 28 patients who underwent wrist fusion with other techniques had a 25% non union rate. The overall post-operative complication rate in this group was 14.9%. We conclude that the AO technique using the AO plate is an option which consistently delivers excellent results, at the same time minimizing the morbidity of the patient by reducing the post-operative immobilization, hospital stay and complication rate.

**Abstract no.: 35125**

**TRABECULAR METAL USED IN HIP ARTHROPLASTY, ACETABULAR COMPONENT**

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**INTRODUCTION:** Porous tantalum is an alternative metal for total joint arthroplasty components that offers several unique properties. Because of its bioactive nature and ingrowth properties, tantalum is used in primary as well as revision total hip arthroplasty components, with good to excellent early clinical results. In revision arthroplasty, standard and custom augments may serve as a structural bone graft substitute. The early results with trabecular metal acetabular components are promising but longer followup is required. We present the early results of 12 cases where we used trabecular metal system for acetabular component. **METHODS:** From 2008, 12 patients in our clinic were operated with trabecular metal acetabular components, 10 of them as a revision hip procedure, 2 of them after severe displaced acetabular fracture. The average of age of the patients was 58 years. 6 patients had trabecular metal shells with cemented liners. In 3 patients we used trabecular metal augments with cemented cups, and another 3 patients were used augments together with trabecular shells. All patients were evaluated preop and postop with standard X-ray and Harris hip score, and in some cases with CT of the acetabulum. Acetabular defects were evaluated according to Paprosky 2B-3 cases 2C-3 cases 3A-5 cases 3B-1 case. **RESULTS:** Average follow up was 18 months, 100% follow up was achieved. There were no complications. There were no revisions, no thrombotic complication. There are no progressive radiolucencies or detectable migration in any of the cups. There were no dislocation. **CONCLUSION:** These early results demonstrated us that trabecular metal acetabular components show very good results in time. The two-pieces acetabular shell and augments permits the reconstruction of every acetabular bone defect.

**Abstract no.: 35126**

**SYSTEMATIC REVIEW OF FUNCTIONAL OUTCOME FOLLOWING  
COMPUTER ASSISTED VERSUS CONVENTIONAL TOTAL KNEE  
REPLACEMENT**

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Introduction: Studies have shown that computer- assisted surgery can improve limb alignment. Symptom relief might be inadequate even with improved alignment. As computer assisted surgery is associated with additional financial input and surgeon training, this review is performed to analyse if the improved alignment translates into better functional result. Methods: Comprehensive database search was performed via the NHS Evidence Health Information Resources using Medical Subject Headings (MeSH). Published and unpublished, international and national articles were considered. Initial search was performed via MEDLINE and EMBASE followed by an adapted search. Randomized Controlled Trials, Systematic Reviews, Meta-analyses and comparative studies were considered. All the studies that compared functional results of computer assisted and conventional jig based knee replacements were included. Publication bias, selection bias and language bias were avoided. Results: Six RCT's, 2 Quasi-experimental studies and 2 case control studies with a total of 1406 patients who underwent 1439 total knee replacements were included. Patients were followed up for a minimum period of 15 months post surgery, ranging from 7 to 36 months. This review noted six good quality studies and four poor quality studies, with short to medium term follow up. Four good studies and three poor studies demonstrated that there was no statistically significant functional difference. Conclusion: Going by the numbers and the quality of available literature, it is evident that computer assistance didn't have significant difference in short term. Based on these studies, it is probably not worth investing in the costly equipment for computer assisted knee replacements now.

**Abstract no.: 35128**

**EARLY RESULTS WITH THE INSPACE® BIODEGRADABLE SUBACROMIAL BALLOON SPACER**

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Introduction: Conventional treatment of subacromial impingement is physiotherapy followed by subacromial injection and finally Arthroscopic Subacromial Decompression (ASAD). When ASAD fails, the results of revision ASAD are often disappointing. Methods: We present early results of 7 consecutive cases treated with the InSpace® biodegradable subacromial balloon spacer. 6 cases had subacromial impingement that failed to respond to conservative management as well as multiple operations. One patient had secondary subacromial impingement following anatomical total shoulder replacement with superior migration of the humeral head, without component loosening. The InSpace® balloon is inserted as an arthroscopic procedure taking only 20 minutes. Results: All patients have been assessed pre-operatively with a Constant Score (CS) and Oxford Shoulder Score (OSS). The results available to date are promising:- Mean Pre-op CS =  $49\pm 2.8$ ; Mean 6 month post-op CS =  $86.5\pm 10.6$ ; Mean pre-op OSS =  $26\pm 4.2$ ; Mean 6 month post-op OSS =  $44\pm 1.4$  Conclusions: The InSpace® balloon spacer was originally designed as a salvage procedure for shoulders with irreparable rotator cuff tears by providing a gliding surface under the acromion; our early results for these alternative indications are promising and we are now providing more effective treatments for one group of patients with failed shoulder surgical outcomes.

**Abstract no.: 35136**

## **HOFFA'S FAT PAD TUMOURS: RESULTS OF THE ARTHROSCOPIC RESECTION**

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**INTRODUCTION:** Many tumous or tumours like can affect the hoffa's fat pad.They usually occurs in young active patients.The objective is to increase awareness in orthopedic community of this rare but interesting disease and to analyze present results of arthroscopic resection in seven patients .**Materials and methods:**In seven patients the diagnosis of Hoffa's syndrome with chronic impingement of the fat pad was established by clinical signs, MR imaging and histological findings. Arthroscopic resection of the fat pad was performed. **Results:** The patients were assessed using the Lyshlom knee score. There was a significant improvement in their symptoms and function after the surgery at an average follow-up of 14 months. The one poor result was because of paresthesia over the distribution of the infrapatellar branch of the saphenous nerve after open resection.**Discussion:** HFP tumours can be defined by their origin intrinsec or extrinsec to HFP fat pad. The intrinsec are characterized by pain, swelling, bruising, and flexion deformity of knee. The extrinsec are characterized by knee discomfort, recurrent hydroarthrosis, and joint weakening.In Hoffa's disease the Movements are usually less affected. Hoffa's test is specific but difficult to elicit. Clinical diagnosis poses difficulty as there are no definitive clinical symptoms and signs, but a palpable mass may suggest the diagnosis. **CONCLUSION:** We insist on the Histopathological evaluation of the resected fat pad. Begnin tumours can be treated by either arthroscopic or open resection depending on its extent. In case of high volume of tumours only open excision can provide complete excision.

**Abstract no.: 35138**

**ADVANTAGES OF COMPUTER-BASED ORTHO-SUV FRAME CLINICAL USE: ANALYSIS OF 230 CASES**

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Introduction: Ortho-SUV Frame is used in six-axis deformity correction since 2006. It is computer-assisted external fixation device of new generation. Aim: To analyze the results of treatment patients with orthopedic pathology of different types. Methods and materials: 229 cases (277 frames) were analyzed: 16(16) fractures; lower limb deformities 158(190); 24(31) foot deformities; 8(8) upper limb deformities and 23 knee contractures. Lower limb deformities were in 103 cases posttraumatic, in 48 – congenital, in 7– postinfectious. In fracture treatment accuracy of reduction, fixation period, complications were estimated. In analysis of deformity correction the accuracy was estimated using reference lines and angles. Also correction period, external fixation index (EFI) and complications were estimated. Results and discussion: All the cases of fractures treatment resulted in precise reduction, the periods of fixation was 124,6 days. In all the cases consolidation was achieved. In lower limb deformities the correction period was  $36.05 \pm 10.7$  days. EFI was  $49.37 \pm 18$  days/cm. Achieved MAD was in varus –  $5.3 \pm 5.33$ ; in valgus –  $4.76 \pm 5.11$ . In treatment of knee joint stiffness achieved ROM was from 80/0/0 till 130/0/0. Complications: Pin-tract infection was observed in 22 cases which had no influence on final result of treatment, joint stiffness was observed in 16 cases, half-pin(wire) breakage in 11 cases, non-union – in 9 cases, acute-on-chronic osteomyelitis – in 4 cases; secondary fractures and deformations – in 4 cases. Conclusions: The proved efficiency of Ortho-SUV frame in treatment of long bone deformities predisposes it's further clinical use in bone pathologies of different types.

**Abstract no.: 35140**

**THE USE OF SMALL DIAMETER CUPS IN TOTAL UNCEMENTED HIP REPLACEMENT**

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The aim of the study: to analyze the early results of total uncemented hip replacement with use of a small diameter acetabular components. Material and methods: Study group included 32 patients (36 hips) with severe dysplastic coxarthrosis, at the mean age at surgery 43.6 years. There were 17 right and 21 left hips operated. In all cases the small press-fit cup 38-40 mm in diameter was implanted in dysplastic acetabulum. We decided to implant small diameter cup for better primary cup fixation and better stabilization of implant. In 50% of all cases 2-3 screws were additional used to improve the primary stabilization of the cup. For clinical assessment we used Merle d'Aubigne and Postel classification modified by Charnley. Radiographs were evaluated according to Engh and Massini, De Lee and Charnley as well as Gruen classification systems. The mean follow up was 47 months (12 to 68 months). Results: There were only 5 very good results, 24 were graded as a good and 4 as satisfactory results. In 3 cases the poor results were noted. The poor results were connected with cup migration because of initial bony acetabular fracture during the cup implantation. Subjective assessment of patients was much better than with use of Merle d'Aubigne and Postel classification. Conclusions: The use of small diameter uncemented press-fit cups is a valuable method which allows good positioning of acetabular component. Implantation of this type of cups gives satisfactory fixation without use of bone grafts but limits possibility of limb length inequality correction.



**Abstract no.: 35141**

**UNUSUAL COMBINATION OF MONTEGGIA, DISTAL RADIUS RADIUS, AND SCAPHOID FRACTURES**

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introduction: The case of a young adult who sustained a posterior Monteggia lesion with fracture of radius shaft and an ipsilateral navicular fracture is presented. This is an extremely unusual injury. The mechanism of injury is discussed. Case report: A 26 years old man fell backwards off a tree onto his outstretched left arm. He presented an obvious deformity of the distal forearm and tenderness over the ipsilateral elbow. Radiographs showed a Monteggia type IV concomitant to navicular and distal radius fracture. The ulnar fracture was openly reduced and fixed with a plate. The dislocation was reduced by manipulation after open reduction of the radial shaft fracture, which was then fixed with a plate. Open reduction and internal fixation with the Herbert-Whipple screw was used for navicular fracture. Eighteen months after injury, he had excellent wrist and elbow movement, with full range of pronation and supination. Discussion: by falling backwards on the outstretched hand, radially deviated wrist, which results in extreme dorsiflexion at the wrist and compression to the radial side of the hand the patient's forearm locked in supination, and the weight of the body pronated the limb against a hand fixed on the ground. This produced the Monteggia lesion after a scaphoid fracture. When this twisting force combines with a heavy compressional force, fractures of the wrist may also theoretically occur. Conclusion: this case is rare. The mechanism of injury giving rise to this rare combination of fractures is discussed, as well as a review of the literature.

**Abstract no.: 35146**

**ISOLATED CARPAL SCAPHOID DISLOCATION**

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introduction: Palmar dislocation of the scaphoid is a rare injury, with fewer than 30 cases having been completely detailed in the literature. We report a case of this rare injury which was treated with open reduction, pinning and ligament repair. Case report: A 25-year-old male damaged his right wrist as a passenger in a road accident. There was an abnormal tender bony prominence distal to the radial styloid process and a slight general swelling. Radiographs showed a volarly dislocated scaphoid, but there was no evidence of displacement or fracture of the other carpal bones. Closed reduction was not successful and a volar incision was made. Exploration revealed rupture of the scapholunate ligament. The scaphoid was reduced and fixed with two Kirschner. Twenty-four months postoperatively, the patient was asymptomatic with no pain or carpal instability. Motion was measured using a standard goniometer. Discussion: Scaphoid dislocations are rare. These injuries are divided into two types; isolated dislocations (Type 1) and scaphoid dislocations associated with axial disruption of the capito-hamate joint (Type 2). Options for the treatment of dislocation of the scaphoid include closed reduction and casting or closed reduction and percutaneous pinning. conclusion, isolated dislocation of the scaphoid carries a good prognosis provided early treatment is started. We suggest open reduction and ligament repair using a volar approach.

**Abstract no.: 35147**

**ARE 'SMART-PHONE' CAMERAS EFFICIENT AND SAFE FOR INTRAOPERATIVE PHOTOGRAPHY IN ORTHOPEDIC SURGERY?**

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Background: The newer 'smart-phones' with in-built cameras offer compact, portable and user-friendly option for intraoperative photography. We hypothesized that smart-phone-camera is efficient and safe in the operating room. Material and methods: Two groups of consecutive procedures performed by two different surgeons from March-2011 to Dec-2012 were compared prospectively. The perioperative setting was similar for both, except that intraoperative photography using a same 'smart-phone-camera' was done in all cases in only group-I. Postoperative infection was defined as per the Centers for Disease Control guidelines. Questionnaire regarding photographs was surveyed by the residents and patients. Results: There were 338 procedures (313 patients) in group-I and 431 procedures (410 patients) in group-II. Both groups were similar demographically, except for younger patient in group-I (median 54 vs 64) and diagnosis (more orthopedic oncology in group-I and more joint arthroplasty in group-II). A mean of 3.1 (range 1-12) photographs were taken per procedure. There was no significant difference ( $p=0.2$ ) in the post-operative infection (1 deep in each group, 3 superficial in group-I and 4 superficial in group-II). There was no interference of the 'smart-phone' with the operating-room machinery and there was no technical difficulty in obtaining/transferring photographs in any case. Both the patients and residents reported an improved understanding of the disease process and the topic respectively. Conclusions: Our preliminary results suggest that 'smart-phone-camera' can be safely used for intraoperative photography without any added risk of infection. In addition, it offers convenience in accessibility and portability, and helps in educating of the residents and patients.

**Abstract no.: 35148**

**AN ALTERNATIVE SURGERY FOR CLAVICULA MIDSHAFT FRACTURES**

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Introduction: Traditionally, midshaft clavicle fractures have been treated nonoperatively. Most clavicle fractures are situated in the middle part (81%). Recently, there has been increasing interest in the operative treatment and plate fixation is often the treatment modality of choice. But we think that intramedullary retrograde nailing method is easier and create less morbidity to patient than plate fixation. Material and Method: Between July 2012 and February 2013 ( 7 male, 4 female ) patient treated with flexible intramedullary nail. Mean age is 27.2 (16-52). 8 of 11 is acute midshaft fracture of clavicle and the 3 of 11 is pseudoarthrosis due to conservative treatment. All procedure (drilling, reaming and sizing) performed with a mini incision parallel to clavicle on the fracture site. At the end nailing performed retrogradely and locked with a mini screw. Results: We obtained fracture and pseudoarthrosis healing in all patients. No patients had a perceived deformity or deficit in strength or range of motion and infection. More recent studies, however, suggest higher complication and non-union rates of up to 15% following nonoperative treatment. In addition, these patients are at high risk of residual pain, disappointing cosmesis and shoulder dysfunction. Intramedullary fixation has emerged as a promising alternative to traditional open reduction and internal plate fixation. An advantage of intramedullary nailing is the immediate stability it provides which enables early postoperative mobilization. Also keeping the periosteum as possible as intact, which positively influences bone formation and improves cosmetics owing to the small incisions used and hardware removal is very simple.

**Abstract no.: 35149**

**CANNULATED SCREWS GUIDED PHYSEAL GROWTH FOR THE TREATMENT OF BLOUNT'S DISEASE**

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Introduction: The knee bowing is a fairly common disorder that needs surgical treatment if the deformity risks the development of an early osteoarthritis. Very often the valgisation osteotomy is the choice and the correction is then held with external fixator, K-wires or plates. The guided growth arrest with minimally invasive implants, peripherally placed, like the staples, the hinge plates or any other similar devices have dubious advantages, including the residual growth potential of the arrested physis. Material and methods: A 12 yo gipsy boy with BMI>30 and severe right knee bowing was operated with a percutaneously placed short thread 4.5 mm, cannulated screws. An image intensifier was needed so that the femoral and the tibial screws went parallel, but in opposite directions - from proximal and lateral to medial and distal for the femoral screw and reverse for the tibial one. Regular X-ray follow-ups were performed every 6 months and 2 years after the original surgery the screws were removed as the knee joint alignment was restored and the growth potential was still intact. The clinical and the radiological improvement were consistent with the BMI reduction to just below 26 as well. Results and discussion: The percutaneously placed short threaded screw provide a safe, cheap and reproducible results when Blounts disease needs surgical addressing. As it is the guided physeal growth is where the secret lies, a thorough clinical assessment is necessary and precise determination on the growth potential so that good results can be expected.

**Abstract no.: 35151**

**DO FIBRIN SEALANTS REDUCE PERIOPERATIVE BLOOD LOSS IN PRIMARY TOTAL KNEE ARTHROPLASTY?**

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**Introduction:** Peri-operative blood loss remains a substantial concern in total knee arthroplasty (TKA). Advances in the field have tried to minimize this risk with various techniques; however, conflicting reports have been published regarding the efficacy of these methods. The purpose of this study was to determine the effects of fibrin sealants on perioperative blood loss, postoperative Hemoglobin (Hb) and Hematocrit (Hct) change, and transfusion rates in primary TKA. **Methods:** We retrospectively compared 183 consecutive primary TKA performed in 162 patients. Of these a fibrin sealant was used in 113 procedures and was not used in 70 procedures. Patient demographics, pre- and post-operative laboratory values (Hb/ Hct), peri-operative blood loss (intraoperative and post-operative drain output) and blood transfusion rates were retrieved for each patient. Decision to transfuse any patient was based on presence of symptomatic anemia and not based on a specific Hb/Hct cut-off value. **Results:** There was no significant difference between pre-operative Hb/ Hct, age, gender, side, body mass index, diagnosis, medical comorbidities, operating time, Knee Society scores or American Society of Anesthesiologists (ASA) grade between the two groups. Additionally, there was no significant difference between intraoperative blood loss, post-operative blood loss, Hb/Hct levels over 3 post-operative days, or blood transfusion rates between the two groups. **Conclusion:** The use of a fibrin sealant was found to have no significant effect on peri-operative blood loss, post-operative Hb/Hct change, or blood transfusion rates. Due to numerous conflicting reports on the effects of fibrin sealants, further larger and prospectively randomized studies are recommended.

**Abstract no.: 35152**

**USE OF KNOTLESS BARBED SUTURES FOR WOUND CLOSURE IN PRIMARY TOTAL KNEE ARTHROPLASTIES: ARE THESE SAFE, EFFICACIOUS, AND COST EFFECTIVE?**

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Introduction: With the recent focus on cost-containment in health-care along with the increased demand in total knee arthroplasties (TKA), an important aspect to consider is cost savings and efficiency. One such potential area of cost reduction in TKA is the closure of the wound. The use of barbed knotless sutures is becoming increasingly more prevalent in several surgical fields. Theoretical advantages of the use of these sutures increase greater ease of closure and decreased closing time. The purpose of our study is to evaluate the safety, efficacy and cost effectiveness of using knotless, barbed sutures for wound closure in TKA. Materials and Methods: We retrospectively compared 333 primary TKA procedures (306 patients) with 193 wounds closed with conventional sutures and 140 closed with barbed sutures. Patient demographics (age, gender, body mass index, side, diagnosis, medical comorbidities, Knee Society scores and American Society of Anesthesiologists [ASA] grade) and operative data (total operative time, wound closure time, post-operative wound complications, and cost of materials needed for closure) were retrieved for each patient. Results: The two groups were statistically similar in terms of demographics. There was no statistically significant difference in wound complication rates, total operative time, wound closing time or wound closure cost (\$69.78 for barbed suture and \$67.57 for conventional sutures per case) between the groups. Conclusion: Barbed knotless sutures used for wound closure in TKA are comparable to conventional methods in efficacy, wound closing time, total operative time, safety and cost. We continue to use them for primary TKA.

**Abstract no.: 35154**

**IMPROVING BUCKLE FRACTURE MANAGEMENT FOR BOTH PATIENTS AND THE HOSPITAL**

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**Aim:** The aim was to assess and improve the management of buckle fractures to benefit both patients and the hospital. **Method:** All paediatric wrist x-rays between March and August 2012 were reviewed identifying patients with buckle fractures. The fracture clinic notes for these patients were then reviewed. The cost of a fracture clinic appointment was calculated, the costs of soft cast and a back slab obtained. **Results:** 72 buckle fractures were identified resulting in 93 fracture clinic appointments. From a cost perspective, using a soft cast with removal at home for all these patients would have generated savings of £3621.44. **Conclusion:** Evidence shows that children who have a plaster cast for the management of buckle fractures have poorer long-term outcomes. Other benefits of soft-cast home management include reduced fracture clinic workload, children not missing school and parents not missing work to attend clinic. Considering the combination of better patient outcome and reduced costs for the hospital we changed the hospital practice for buckle fracture management to the use of a soft-cast. Parents and carers receive an information leaflet detailing the type of fracture, instructions for removing the soft cast and answers to other commonly asked questions.



**Abstract no.: 35158**

**COMPARATIVE STUDY OF PARALLEL PLATING WITH PERPENDICULAR PLATING IN THE MANAGEMENT OF DISTAL HUMERAL FRACTURES. PROSPECTIVE RANDOMISED TRIAL**

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**INTRODUCTION:** Dual plating techniques (parallel plating or orthogonal plating) have become the standard treatment protocol for the management of distal humeral fractures. This trial was undertaken to assess whether one method was superior to other in terms of fracture union, elbow function and post operative complications. **METHODS:** Thirty eight consecutive patients, with distal humeral fractures, who consented were randomised at the time of admission to undergo ORIF with either perpendicular plating (n= 20) or parallel plating (n= 18). All Surgeries were performed under tourniquet control using posterior approach with olecranon osteotomy. Elbow mobilisation was started in the immediate post operative period with protection by removable splint for two weeks. MEPS score was used to document the functional outcome. **RESULTS:** Union of distal humeral fractures, was achieved in 5.2 months in group 1 and 4.8 months in group2 ( $p>.05$ ). Mean range of flexion in group1 is 120 degree, and in group2 is 121 degree, mean extension loss was, 15 and 10 degree in group1 and 2 respectively( $p>.05$ ). None of the patients in our study group had non-union at either fracture site or osteotomy site. MEPS score, was 91 in group1, and 94 in group2( $p>.05$ ).The result was graded as excellent for thirteen elbows, good for seventeen, fair for three, and poor for three.**CONCLUSION:** There was no statistically significant difference between the two groups in terms of time for fracture union, functional outcome and post operative complications. Both the methods are equally effective in the management of distal humerus fractures.

**Abstract no.: 35159**

**FAILURE MODES IN CONSERVATIVE AND SURGICAL MANAGEMENT OF INFECTIOUS SPONDYLODISCITIS**

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Spondylodiscitis (Sp.) is a rare destructive spinal infection with uncharacteristic symptoms. Management commonly involves conservative methods, but presence of complications or failure of medical treatment indicates surgery. There is a controversy regarding approach, instrumentation and staging. We reviewed patients treated for infectious Sp. between 2000 and 2010. Exclusions: infectious Sp. at the site of previous spinal instrumentation, spinal metastases, tuberculous (13) and fungal (2) Sp. We identified 196 patients. Mean age was 59 (range 1-89). Staph. aureus was mostly (57%) isolated microorganism. Lumbosacral (63%) and thoracic (21%) spine were mostly affected. Epidural abscess occurred in 38%, destruction of vertebral body in 13% of patients. 24% had neurologic compromise, 4 of them presented with Cauda equina syndrome, 10 were paraplegic. 91 patients were managed conservatively. Treatment failed in 12 cases. More 7 patients were readmitted, 5 died during follow up. Posterior debridement with pedicle screw instrumentation was performed in 75, without instrumentation in 19 cases. 7 underwent anterior debridement alone, while in 16 patients anterior debridement was combined with pedicle screw instrumentation, 1 was two stage procedures. 12 patients were revised during primary hospitalization, more 12 during follow up. 2 deaths were in-hospital, 5 patients died during follow-up. Conclusion: Conservative measures are safe and effective for carefully selected patients without Sp. complications. Failure of conservative measures requires surgery which can guarantee thorough debridement, decompression, restoration of spinal alignment and correction of instability. Surgeons should master various techniques to achieve adequate debridement and pedicle screw instrumentation may safely be used if needed.

**Abstract no.: 35160**

**ARTHROSCOPIC ASSISTED REMOVAL OF SCREWS FROM PROXIMAL HUMERAL LOCKING PLATES**

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In patients over the age of 65 years, proximal humerus fractures account for 10% of all fractures. The incidence is expected to increase in the future especially in elderly patients with osteoporotic bone. Non operative treatment of displaced fractures is associated with poor results. Osteosynthesis using proximal humeral locking plates has shown promising results in the management of displaced and unstable proximal humeral fractures. However, screw cut out and penetration of the articular surface remains a significant complication with this technique and accounts for nearly one third of all patients requiring a re-operation to remove or exchange the prominent screw. An open procedure to remove the prominent screw(s) may be associated with potential complications such as pain related to an open surgical approach, infection, soft tissue disruption and neurovascular injury. We describe a minimally invasive technique that allows the removal of the perforating screw without requiring an open procedure. Arthroscopic-assisted screw removal after osteosynthesis of proximal humerus fractures provides all of the benefits of hardware removal without the risks associated with open surgery. Additionally, it allows for assessment of any glenoid erosion that may have been caused by the penetrating screw(s).

**Abstract no.: 35161**

**ACCELERATION OF COXARTHROSIS BY AN EXOSTOSIS CAUSING FEMOROACETABULAR IMPINGEMENT**

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Here we describe a 28-year-old man with a history of right hip pain for the past 11 years and ankylosing spondylitis for the past 6 months. Imaging studies showed an exostosis in the femoral neck causing femoroacetabular impingement. The patient was diagnosed with coxarthrosis. This case report suggests that femoroacetabular impingement may accelerate the degenerative process in the hip joint.

**Abstract no.: 35163**

**AUTOLOGOUS PLATELET INJECTION OF TENDINOPATHY AROUND SHOULDER AND ELBOW**

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The cause of tendinosis is most likely a combination of mechanical overloading and abnormal microvascular responses. Numerous methods of treatment have been advocated including rest, nonsteroidal anti-inflammatory medication, bracing, physical therapy, iontophoresis, and extracorporeal shock wave therapy. Injections of corticosteroids has been used failing which surgical intervention remains an option. In this study, we evaluated the use of platelet-rich plasma (PRP) an autologous biological blood-derived product with high concentrations of platelet-derived growth factors, transforming growth factor beta, and epidermal growth factor that enhance tendon healing. A total of 68 patients were recruited to have a 79 PRP injections. They include 31 shoulders and 48 elbows. The pre-injection pain is noted on VAS and functional assessment using Quick DASH score which is then compared to post injection scores at 6 months and 12 months. The activity levels of the patients were noted along with their occupation. The mean age of the patients is 44years and most of them are manual workers. Elbow tendinopathy demonstrated a significant improvement of both VAS and DASH scores at 6 months, but the efficacy reduced at 12 months. The shoulder tendinosis although showed improvement, 8 patients required further surgery within 12 months due to unresolved symptoms. PRP injection can be used as an alternative for surgical release around the elbow and to a limited extent in the shoulder.

**Abstract no.: 35164**

**THIRTY DAY MORTALITY FOLLOWING HIP FRACTURE SURGERY-  
INFLUENCE OF DURATION OF ANAESTHESIA AND DURATION OF  
SURGERY**

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Hip fracture is associated with highest mortality following trauma in the elderly. The objective of this study is to evaluate the association between duration of anaesthesia and duration of surgery with 30 day mortality following hip fracture surgery. 254 patients were included in the study. Chi Square tests and Logistic regression analyses were performed to check the relationship between 30 day mortality and all independent variables including duration of anaesthesia and duration of surgery. The mean age was 83 yrs (range 65 to 101 yrs). The incidence of 30 day mortality following hip fracture surgery was 9.4%. Patients who had GA had more complications and mortality in comparison with those who had regional anaesthesia. GA increases the odds of 30 day mortality to 2.5 times. Patients under ASA II had decreased odds of 30 day mortality than ASA III & IV (Odds Ratio 0.16). However duration of anaesthesia up to 120 minutes and duration of surgery up to 90 minutes were not associated with 30 day mortality ( $P>0.05$ ). The 30 days mortality following Dynamic Hip Screw fixation was 14.6%, Intra medullary hip screw was 12.5%, Cemented hemi-arthroplasty was 6.9% and uncemented hemi-arthroplasty was 6%. In elderly people with hip fracture and following their surgery, 30 day mortality was not affected by duration of anaesthesia and duration of surgery. However 30 day mortality was related with GA, ASA III & IV and post-operative complications mainly cardiac failure and chest infection. These groups offer a clear target for specialist medical assessment.

**Abstract no.: 35167**

**CAPACITY OF EMERGENCY AND ESSENTIAL SURGICAL CARE IN HAITI**

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Introduction: Musculoskeletal conditions are the second greatest cause of disability globally; LMICs bear most of this burden despite having lowest capacity. Injuries are already rapidly increasing in incidence as Haiti's economy grows and physical infrastructure improves. No evidence base for surgical capacity in Haiti exists; this study provides a comprehensive, nation-wide representation of emergency and essential surgical care (EESC) capacity for Government-led policy-making. Methods: From April to October 2012, 44 Medical Directors of the largest health facilities responded to a WHO-developed survey, which assessed each facility's capacity for EESC provision: 1) infrastructure, 2) human resources, 3) interventions provided, 4) material resources available. Bivariate analysis was used to compare individual elements between stratifications. Results: Deficiencies exist in all four areas. Worst in infrastructure are blood banks (operational in 28% of facilities) and oxygen concentrators (54%). Only 69% of facilities employ one fulltime surgeon, 6% employ surgical technicians, and 33% employ one fulltime anesthesiologist. Of all facilities, 45% provide clubfoot repair, 50% open treatment of fractures, 59% drainage of osteomyelitis, 70% closed treatment of fractures, 75% joint dislocation treatment, and 79% amputation. Stratifying by sectors, there was significant difference ( $p < 0.05$ ) between private/NGO facilities ( $n=26$ ) and public facilities ( $n=18$ ). Public facilities had lower capacity to provide interventions beyond closed treatment of fractures and joint dislocation. Sixty of 67 (90%) essential materials were less available at public facilities. Conclusion: Investment in human resources is key, specifically by revamping the two Orthopedic and Traumatology residency programs and establishing formal training+certification of allied health professionals.

**Abstract no.: 35168**

**SHOCK WAVE THERAPY OF FRACTURE NON-UNION**

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We have used the principles of ESWT in the treatment of non-union of fractures in 44 patients(49bones). There was 35 Males and 9 Females .Age ranging from 14-70. Most sites involved were femur and tibia.Average non-union time before treatment was 11.9 months. We have achieved bone healing in 75.5% of cases.Union took an average of 10.2 months.We had no complications.



**Abstract no.: 35169**

**ILIZAROV EXTERNAL FIXATION PAIRED WITH HYPERBARIC TREATMENT AFTER TIBIAL FRACTURE INITIAL TREATMENT COMPLICATIONS – A CASE REPORT**

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Introduction: Tibial shaft fractures are among the most common musculoskeletal injuries, and the tibia is the most common diaphyseal long bone fractured. Open tibia shaft fractures are usually treated with external fixation as temporary fixation method and with intramedullary nailing afterwards. Case: patient aged 40, injured as a motorcycle driver. The patient had open tibia shaft fracture of the right leg (Gustillo II). Primarily treated with external fixator. After 3 weeks an infection occurred in proximal pins area. The external fixator was removed and immobilisation along with parenteral antibiotic was administered. After 3 weeks Ilizarov fixator was placed. One month after the Ilizarov was placed the patient was sent to hyperbaric chamber due to the infection of two fixator wires in proximal segment. After hyperbaric treatment the infection subsided. Two months after the Ilizarov fixator was placed the patient was allowed to ambulate with full weight. After six months the Ilizarov fixator was removed. Ambulation, knee and ankle movements are full. Conclusion: the Ilizarov fixator paired with hyperbaric chamber treatment gave very good results in treatment of open tibial shaft fracture complicated by infection

**Abstract no.: 35172**

**ANATOMIC LOCALIZATION OF THE LISTER'S TUBERCLE AND ITS CLINICAL AND SURGICAL IMPORTANCE**

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The dorsal tubercle of the radius, once called Lister's tubercle, is used as a landmark in wrist arthroscopy, wrist joint injections, and similar surgical and clinical procedures. However, there is no useful information in the reference anatomy books and literature. The aim of this study was to identify the anatomical localization of Lister's tubercle on the dorsum of radius in relation to the radial styloid process and the ulnar notch of radius and to demonstrate the clinical and surgical importance of these relationships. We studied 20 dried cadaver radius specimens. The distances from Lister's tubercle to the radial styloid process and to the ulnar notch were measured by using a digital micrometer caliper and the ratio of the two measures was calculated. The dorsal tubercle of the radius is variable in position and can be either closer to the radial styloid process or to the ulnar notch. The present study showed that in 11 of the radii the dorsal tubercle of the radius was nearer to the radial styloid process than the ulnar notch, while in 9 subjects it was nearer to the ulnar notch. This anatomical variation may be relevant for wrist injections, wrist arthroscopy or wrist surgery.

**Abstract no.: 35173**

**REVIEW OF ORTHOPAEDIC IMPLANT RELATED SURGICAL SITE INFECTION**

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Introduction: Diagnosis and classification of surgical site infection (SSI) in Orthopaedics can be difficult and inaccurate. Aim of our study was to assess the rate of orthopaedic implant related surgical site infection in our district general hospital (DGH) and to assess the outcome. Materials and method: This was a prospective study. We identified and collected data on all SSI in Orthopaedics. We classified the infections based on the CDC criteria used by UK Health Protection Agency. Results: Out of the 3334 Orthopaedic implant surgeries performed we identified 37 SSI over a period of 16 months ( Infection rate- 1.1%). Mean Age was 60yrs (range 18- 99). Male female ratio was 19: 18. We had 21 elective and 16 trauma cases. Out of the 21 elective cases 16 were primary arthroplasty . The most common organism identified was staphylococcus aureus (17). In 9 cases all cultures were negative. The rest of the cases included Enterobacter, E Coli , MRSA, Coagulase Negative Staphylococcus ,Pseudomona, Streptococcus anginosus, Serratia, anaerobes and Group C Streptococcus. 4 cases were polymicrobial. 28 cases had return to theatre ( rate- 0.83%). We had 11 elective joint infections over a period of 16 months and 4 of them required revision surgery. Mean duration of follow up was 7 months. 75 % of cases required further surgical interventions to treat the infection. Conclusions: Our study has illustrated that low infection rate is achievable at a DGH set up. Orthopaedic implant related SSI causes prolonged morbidity requiring multiple surgical interventions.

**Abstract no.: 35174**

**SURGICAL OUTCOME OF GASTROCNEMIUS RECESSIOIN IN PAINFUL FOOT AND ANKLE CONDITIONS**

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Introduction: The procedure of gastrocnemius recession is performed for various painful conditions like non insertional Achilles tendinitis, plantar fasciitis, metatarsalgia, tight TA. Objective: The aim of this retrospective case series was to review the outcome of gastrocnemius recession procedure providing pain relief for patients who were suffering from various painful foot conditions and failed conservative management. Methods: In this study, we reviewed 14 patients ( 8 M and 6F, two patients had bilateral procedure) retrospectively who had gastrocnemius recession procedure done between Feb 2011 – Dec 2012. Inclusion criteria: All patients with painful foot and ankle conditions Mean follow up was 10 months with mean age of 47.35 years. Patients had clinical evaluation with Visual analogue score (VAS) and patient satisfaction score. Results: The preoperative pain score was 8/10 improved post operatively to 2.2/10. Thirteen patients (91%) said they were satisfied with the results of the procedure. Eleven patients (84%) who had a unilateral procedure done stated they would have the procedure done for the contralateral leg if required. Conclusion: Our study showed that Gastrocnemius recession is an effective procedure with an improvement of average preoperative pain score from 8 to 2.2. Kiewiet et al and Maskill et al results showed Gastrocnemius Recession produced good clinical outcomes. References: Kiewiet N.J., Holthusen S.M., Bohay D.R., Anderson J.G. Gastrocnemius Recession for Chronic Noninsertional Achilles Tendinopathy. Foot and Ankle International Journal, 2013. Maskill J.D., Bohay D.R., Anderson J.G. Gastrocnemius recession to treat Isolated Foot Pain. Foot and Ankle International Journal, 2010

**Abstract no.: 35175**

**THERMAL NECROSIS OF ACETABULUM USING BLUNT REAMERS -  
EXPERIMENTAL RESEARCH ON BOVINE ACETABULAE**

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Acetabular reaming during total hip arthroplasty increases the stability of the cup fixation. However there is increased temperature noted and many surgeons note smoke, blackening of tissues and burning smell whilst reaming, especially with older reamers. We aim to quantify the amount of heat generated as many studies of intramedullary reaming noted a possibility of thermal necrosis of bone at 56 degrees celcius. The initial experiments were carried out on polyurothane blocks using different reamers. THR simulation experiment reveals that the reamer design had greater influence than the bluntness if just focusing on the temperature raise alone. However the thermal camera used was of very low sensitivity. The second set of experiments were done on bovine acetabulae using an infra-red video temperature recording system, FLIR E45. Sequential reaming was performed starting from 44 mm to 62 mm size reamers. The wear of reamers was measured by loss of material using Kern ABT 220-5DM analytical balance with a sensitivity of 10micrograms to weigh the reamers. Thermal pictures obtained showed that the temperature was raised significantly after reaming out the cartilage and bone reaming started. The highest temperature recorded was 101 degrees celcius much above the threshold of bone necrosis. The higher temperatures were observed in latter part of reaming when there is increased contact surface between the reamer and bone. There was no loss of material observed from the reamer. However the limitation of lack of irrigation and blood supply in bovine bones need to be noted.

**Abstract no.: 35177**

**ARTHROSCOPIC RESECTION OF THE LOWER PATELLAR POLE IN ADOLESCENTS SPORTSWOMEN/MEN WITH CHRONIC PATELLAR TENDINOPATHY**

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**Purpose:** The aim was to compare clinical results of resection of the lower patellar pole in adolescent athletes with chronic Jumper's knee between two groups, with arthroscopic and open approach. **Material and Methods:** From 2006 to 2010, we did 20 resection of lower patella pole in 18 patients (14F, 4M), 8 patella were done with open approach, and 12 with arthroscopic approach. The average age of the patients in arthroscopic treatment was 15,3, and open 15,6. All patients were initially treated non-operatively and we used Martens' treatment program. If non-operative measures failed in Blazina stage 3 we used surgical treatment. The mean time of the conservative therapy before arthroscopic treatment was 14 months, and in open 20 months. Postoperative average follow-up in arthroscopic/open approach was 48/56 month. **Results:** Preoperatively and postoperatively, for clinical evaluation of the results we used the Kujala score, the Lysholm score, and VISA questionnaire. In both groups we found significant improvement of the score in all three questionnaires. We were getting better results in longer follow-up time with open surgery. Postoperative treatment was shorter with arthroscopic approach, with considerable smaller scars and faster recovery. **Conclusion:** In our experience it is proved that the arthroscopic resection of the lower patellar pole as a minimal invasive method provides better clinical results to treat the jumper's knee in adolescents. The return to the sports activity was faster than in the surgical approach. Atypically, we found that in this age group that girls were three times more surgically treated than boys.

**Abstract no.: 35178**

**EXTERNAL FIXATOR AS A DEFINITIVE TREATMENT OF HEMIPELVIC AND IPSILATERAL SUBTROCHANTERIC FRACTURES. CASE REPORT**

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Case report: Male, 56 years old, with a fracture of the right hemipelvis, with intrapelvic hip protrusion. Right homolateral subtrochanteric fracture above two long plates (one lateral and one anterior) on the femoral diaphysis. Plates in situ for 25 years, due to a previous femoral fracture. The authors describe the surgical treatment, with two external fixators, one pelvi-femoral (pelvic contralateral and femur homolateral) and one femoral-femoral. Bone healing was achieved with a normal walking.

**Abstract no.: 35180**

**REDUCTION IN RADIATION EXPOSURE WITH THE MINI C-ARM IN UPPER LIMB SURGERY**

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**INTRODUCTION:** There have been concerns over the radiation exposure from standard fluoroscopes. Furthermore, such fluoroscopes are radiographer operated. More recently, a surgeon-operated mini C-arm has become available to minimise such concerns.**OBJECTIVES:** The first objective was to determine a difference in radiation exposure levels between a standard fluoroscope and a mini C-arm. The second objective was to assess for potential cost saving and improvements in theatre efficiency.**METHODS:** Prospective data collection was performed on 75 cases using a mini C-arm fluoroscopy machine. All cases were performed by a single surgeon. These cases were matched to 75 similar cases performed with a standard fluoroscope over the same period. Comparison was made on radiation dosing, screening time and duration of surgery. Significance testing was performed on the data. Cost-benefit analysis was also carried out to assess for possible cost savings. **RESULTS:** In total 75 matched cases were analysed over a 6 month period. The average dose area product (DAP; cGycm<sup>2</sup>) for the standard fluoroscope was 13.48 vs 5.22 for the mini C-arm. This represented a significant reduction in radiation exposure ( $p=0.001$ ). There was no significant difference in duration of surgery (45 vs 51minutes;  $p= 0.4$ ). A calculated annual saving estimation of £6200 can be achieved with use of the mini C-arm. **CONCLUSION:** The mini C-arm was shown to significantly reduce radiation exposure. Extending the use of the mini C-arm to all extremity surgery including foot and ankle procedures could provide a cost saving measure to hospitals in the long run.



**Abstract no.: 35181**

**AUDIT ON PATIENT SATISFACTION IN FAST-TRACK JOINT REPLACEMENT**

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Introduction: Fast-track Joint Replacement is expected to provide better post operative analgesia leading to accelerated physiotherapy and rehabilitation leading to reduced morbidity and length of stay. Does the reduced length of stay and accelerated rehab translate to better patient satisfaction? Aim of the audit was to assess patient satisfaction and obtain patient feedback after fast-track hip and knee arthroplasty. Method: We Identified the first 50 patients who underwent fast-track hip/ knee arthroplasty from the database. We send validated patient satisfaction questionnaire [1] for joint replacement through the audit department and analysed the data. The questionnaire consists of 4 questions to assess patient satisfaction with respect to overall results of surgery, pain relief, improvement in activities of daily living and improvement in recreational activities. Results: 36 (72%) patients ( 19 TKR and 17 THR) replied. 95% of patients were satisfied with in- patient experience, immediate post operative pain relief , overall pain relief and overall results. 92% of patients were satisfied with their improvement in activities of daily living. 84% of patients were satisfied with their improvement in recreational activities. Comparing the results of TKR with THR there was no statistically significant difference in patient satisfaction between the two groups. Reference: 1. Mahomed N etal, The Self-Administered Patient Satisfaction Scale for Primary Hip and Knee Arthroplasty , Arthritis 2011.

**Abstract no.: 35184**

**A CASE REPORT ON MISSED FEMORAL NECK STRESS FRACTURE**

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**Introduction:** Femoral neck stress fractures are a fairly uncommon orthopaedic problem, usually described in young athletes and soldiers. Hence they could be missed in other group of patients. Patients are often being treated for muscle and tendon strains or early-onset coxarthrosis as illustrated by this case report. **Case report:** 62-year old previously active, fit and well female presented to us with a displaced sub-capital neck of left femur fracture without any history of trauma. She has been treated by her General Practitioner for osteoarthritis of the same hip for the past 6 months without obvious radiological findings. The clinical presentation and radiological features were suggestive of an old fracture. Patient underwent total hip replacement. Intra-operative findings and histopathology report were confirmative of an old fracture. 6 weeks prior to the incident, patient had an intra-articular steroid injection for presumed early-onset osteoarthritis for the same hip. We believe that this injection gave the patient enough pain relief to sustain usual activity level, which eventually led to secondary displacement of the stress fracture. **Discussion:** This case shows that rare causes of anterior hip pain should be taken into consideration in patients that present with symptoms disproportionate to clinical and radiological findings. Further investigations with MRI scan or bone scan should be performed. Delay in diagnosis may lead to potentially significant complications associated with secondary displacement of the femoral neck stress fracture.

**Abstract no.: 35187**

**CORRELATION OF OVERACTIVE BLADDER SYMPTOMS AND FALLS WITH INJURIES IN THE ELDERLY**

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**INTRODUCTION:** Overactive bladder is characterized by urinary frequency, urgency, nocturia and urges incontinence. Overactive bladder symptoms and falls in the elderly is a growing concern and presents as a modifiable risk factor. **OBJECTIVES:** The objective of this study was to assess the proportion of patients presenting with a fall related injury and suffering from overactive bladder symptoms. **METHODS:** A prospective assessment was carried out on all patients over the age of 65 years. A combined falls risk assessment and overactive bladder screening questionnaire was designed for data collection. **Inclusion criteria:** Urinary urgency, accompanied by frequency and nocturia with or without urgency incontinence. Patients with cognitive impairment were excluded. **RESULTS:** 100 patients were eligible for assessment over a three-month period. The male to female ratio was 1:3.8 and the average age was 82 years. All patients sustained a fracture, 66% of which was a hip fracture required surgical treatment. Overactive bladder symptoms were present in 16 patients (27%), 12 patients (20%) had nocturia. 14 patients had not received any investigation. Other falls risk factors were present in 45% of patients. **CONCLUSION:** An overactive bladder appears to be an important contributing factor for falls associated with injuries. It appears that patients are not being investigated adequately and remain untreated. Multiple risk factors are a common finding in many patients. **REFERENCES:** Milsom I, Abrams P, Cardozo L, Roberts RG, Thüroff J, Wein AJ. How widespread are the symptoms of an overactive bladder and how are they managed? A population-based prevalence study BJU International 2001

**Abstract no.: 35188**

**CHALLENGES IN THE MANAGEMENT OF OSTEOPOROSIS IN A DEVELOPING COUNTRY**

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**Introduction:** Osteoporosis is taking public health significance worldwide. Yet, it is still largely undetected in Nigeria until the patient presents with a fracture which management often had unpredictable outcome. **Methods:** A retrospective analysis of the records of patients who presented at the National Orthopaedic Hospital Enugu, South East Nigeria, with osteoporotic fractures over a 10-year period, January 2003 till December 2012. The demographic data, type of fractures, investigations, treatment and functional outcome were determined. The retrieved data was analyzed with SPSS 19. **Results:** The ages ranged from 23-103 years, mean age  $70.9 \pm 15.7$  years. 54 patients (65.9%) were females while 28(34.1%) were males. All presented with fractures including vertebral, femur (proximal, shaft and distal) and distal radius fractures. The duration of symptoms before presentation was 1-3285 days with a mean of  $171.0 \pm 450.9$  days. 71.8% of the late presenters did so because of ignorance. None of the patients was screened for osteoporosis; only 2 had biopsies done in the course of their treatment. 5 (6.1%) patients had their investigations delayed because of funds while 3(3.7%) did not have the proposed surgery for same reason. None received any special treatment for osteoporosis. **Conclusion and Recommendations:** Osteoporotic fractures are a common presentation in patients with osteoporosis. Ignorance among the populace is a major reason for delayed presentation in patients with osteoporotic fractures. Funds still hinder investigations and treatment for osteoporotic fractures in developing countries. Health education should be employed to enlighten the populace about osteoporosis and emphasis laid on the prevention of osteoporotic fractures.

**Abstract no.: 35190**

**OUTCOME OF ANATOMIC RECONSTRUCTION OF MEDIAL PATELLOFEMORAL LIGAMENT IN RECURRENT PATELLA: A PROSPECTIVE CASE SERIES**

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Introduction: Recurrent patella dislocation is a challenging problem to manage resulting due to imbalance between bony and soft tissue restraints. Medial patellofemoral ligament (MPFL) has been consistently shown to be damaged in patellar dislocation. Reconstruction of MPFL restores the recurrent instability. However, debate continues between isometric and anatomic reconstruction of MPFL. We present a prospective series of 18 patients with anatomic reconstruction of MPFL and its clinical outcome. Material & methods: 18 patients with recurrent dislocation of patella were included. Plain radiograph of knee and MRI were performed for all the patients. After diagnostic arthroscopy, meniscal and cartilage lesions were managed appropriately. MPFL reconstruction was done using semitendinosus tendon, passing it through dual patellar tunnels. Two loops of tendon were passed between 2nd and 3rd layer of knee. A tunnel was drilled at an anatomic point lying over femur between medial femoral epicondyle and adductor tubercle aiming superolaterally. Two ends of semi-T tendon were fixed inside the tunnel using a bioabsorbable interference screw with knee flexion between 30-60°. Postoperative, non weight bearing mobilization of knee was started from very next day in a hinged brace with 30° increase every week. Weight bearing was allowed after 6 weeks. Results: Total 18 cases (11M, 7F) were included. All cases had patella alta. Seven cases had ligament laxity. Mean post operative Kujala score was 95.66. No patient had extensor lag or flexion deficit. There were no redislocations or patella fracture. Conclusion: MPFL reconstruction gives excellent results after anatomic reconstruction of MPFL.

**Abstract no.: 35193**

**TALAR BODY FRACTURES - PANTALAR INVOLVEMENT /  
SUBLUXATION / DISLOCATION: MODIFICATION OF MÜLLER AO / OTA  
CLASSIFICATION**

Kodali Siva Rama Krishna PRASAD, Bharani Kumar DAYANANDAM, Glenn  
CLEWER, Rakesh KUMAR, Lisa WILLIAMS, Kyriakos KARRAS  
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Introduction: Fractures of the talar body represent uncommon high energy injuries with considerable soft tissue injury with potential for grave prognosis. Current literature of definition, classification, timing of surgery and outcomes remains controversial. Introduction: Our primary purpose is to present a case series of an unusual combination of fractures of talar body in association with pantalar involvement / dislocation / extension as a basis for modification of Müller AO / OTA Classification. Methods: We include four consecutive patients, who sustained talar body fractures with pantalar subluxation /dislocation /extension. These unusual injury patterns lead us to reconsider Müller AO / OTA Classification in the light of another widely used talar fracture classification, Hawkins Classification of fractures of neck of talus and subsequent modification by Canale and Kelly. Results: Our patients have association of fractures of talar body with pantalar involvement/ subluxation / dislocation. Muller AO / OTA Classification comprise C1 - Ankle joint involvement, C2 - Subtalar joint involvement, C3 - Ankle and subtalar joint involvement. We propose Modification of Müller AO / OTA Classification: C1 – Absolutely undisplaced fracture; C2 – Ankle and Subtalar joint involvement: subluxation; C3 – Ankle and subtalar joint involvement: subluxation with comminution; C4 – Ankle, subtalar and talonavicular joint involvement. Conclusion: Our modification redefines Müller AO / OTA Classification, extends and fills the void in the classification by inclusion of C4, draws attention to stability of talonavicular joint and reflects increasing severity of injury in fractures of talar body.

**Abstract no.: 35194**

**KNEE TRIANGLE, A DEVICE TO ASSIST IN REDUCTION AND STABILISATION FOR FIXATION OF FRACTURES AROUND KNEE**

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Background: Fractures around knee, distal femur and proximal tibia, Intra Articular or Juxta Articular are fairly common (2% of all fractures). Reduction & fixation of these fractures poses challenge to an orthopaedic surgeon, especially in multi-fragmentary and comminuted fractures. Review of Literature: Traditionally a draped bolster or a radiolucent Fracture Table attachment is used for supporting injured limb intra-operatively. Material & Methods: A device named "Knee Triangle" is used for positioning of the injured limb, assisting in Reduction & thus, stabilisation for fixation of fractures around knee. It is made of radiolucent material having 3 limbs- Base, Femoral Limb and Tibial Limb, the Apex being opposite the base & supports the knee. The width is more than the width of the femur at epicondyles. The length of the femoral and tibial limbs is more than the respective lengths of femur & tibia. The device is wrapped in sterile drapes and placed beneath the injured limb on table. Results: The device allows easy visualisation of operative part under C-arm in AP/Lat views. The traction due to weight of the pelvis aids in easy reduction of fractures of distal femur, while the pull on the draped leg allows easy reduction of fractures of proximal tibia, the apex of device acting as counter traction. The flexion of the knee at apex of the device allows relaxation of the iliotibial tract and gastrocnemius aiding in reduction. The device is found to be helpful in cases of fractures around the knee undergoing plating through ORIF/MIPPO.

**Abstract no.: 35197**

**SOLITARY NEUROFIBROMA IN POPLITEAL FOSSA**

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**SUMMARY:** Neurofibroma is a benign slowly growing tumour of peripheral nerve composed mainly of Schwann cells, fibroblasts, and perineurial-like cells. It occurs as a solitary or multiple masses and may arise on any nerve. Neurofibroma most commonly affects patients 20–30 years of age and has no sex predilection. **CASE REPORT:** 21 year male working in a departmental store presents with a mass in the right popliteal fossa for the 5 years. The mass is progressively growing and initially it was painless but for the last 6 months. Physical examinations were normal the local examination reveals a firm mass situated in the posterior aspect of right knee down to popliteal fossa. All laboratory readings were in the normal limits. Radiological examinations reveal sarcomas of soft tissue. Excision biopsy was done for the suspicion of malignant transformation and histopathological examinations reveal it is neurofibroma. This case report is presented for the rare site presentation of neurofibroma. **Conclusions:** Neurofibroma is a common benign peripheral nerve tumour. The management of neurofibroma is based upon the symptoms. Excision of the mass is warranted where there is pain, progressive neurological symptoms,, compression of adjacent tissues and loss of function, as well as suspicion of malignant degeneration **Key words:** Neurofibroma, popliteal fossa, Schwann cells .



**Abstract no.: 35198**

**PERIPROSTHETIC FRACTURE AFTER MIPO FOR A FEMORAL STRESS FRACTURE AT TRACKER OF COMPUTER NAVIGATED TOTAL KNEE REPLACEMENT**

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Introduction: Periprosthetic fracture after Minimally Invasive Plate Osteosynthesis (MIPO) of stress fracture involving femoral pin site tract in computer assisted total knee arthroplasty is unique in orthopaedic literature. We are reporting this unique presentation of periprosthetic fracture after MIPO for stress fracture involving femoral pin site tract in computer assisted total knee arthroplasty, treated by reconstruction nail (PFNA). Methods: A 75-year old female, who had computer navigated right total knee replacement 6 weeks back, was admitted with increasing pain over distal thigh for 3 weeks without trauma. Prior to onset of pain, she achieved a range of movements of 0-105 degrees. Perioperative radiographs did not suggest osteoporosis, pre-existent benign or malignant lesion, or fracture. Radiographs demonstrated transverse fracture of distal third of femur through pin site track. We fixed the fracture with an 11-hole combihole locking plate by MIPO technique. Eight weeks later, she was readmitted with periprosthetic fracture through the screw hole at the tip of the MIPO Plate. She was treated by Reconstruction Nail (PFNA), removal of locking screws and refixation of intermediate segment with unicortical locking screws. Then she was protected with plaster cylinder for 4 weeks and hinged brace for 2 months. Results: She made uneventful recovery and was started on osteoporosis treatment, pending DEXA scan. Conclusion: Reconstruction Nail (PFNA), refixation of intermediate segment with unicortical locking screws constitutes a logical management option for the unique periprosthetic fracture after MIPO of stress fracture involving femoral pin site tract in computer assisted total knee replacement.

**Abstract no.: 35201**

**A NOVEL NAVIGATION PROTOCOL FOR REVISION OF UNICOMPARTMENTAL KNEE REPLACEMENT TO TOTAL KNEE REPLACEMENT**

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**Introduction:** As limited literature is available about the use of computer Navigation to revise unicompartmental knee arthroplasty to total knee arthroplasty, we would like to present our modification of the Standard Primary Navigation System to revise unicompartmental knee replacement to total knee replacement, avoiding the complex Revision Navigation System, revision instrumentation and hence larger exposure and potential subsequent blood loss. We present our modification of Standard Primary Navigation System to revise unicompartmental knee replacement to total knee replacement, avoiding complex Revision Navigation System and revision instrumentation. **Methods:** We applied our modified protocol for conversion of medial unicompartmental knee replacement to total knee replacement in a 55-year old man. We used Primary Navigation protocol (E-Motion Active with Tibia First and Gap Management) for initial referencing with the implants in situ and then recalibrating the reference points after sequential removal of implants. We then added the thickness of implants to the values before making the necessary Tibial and Femoral cuts. We added 8mm for Uni-thickness for calculation of femoral cut and 5mm for Uni-thickness for calculation of tibial cut. **Results:** We found that our modified protocol ensured that joint line was preserved, flexion/extension gap was easily balanced and patellar tracking was normal. **Conclusion:** This application of our modified protocol showed that we can make use of simpler Standard Navigation Protocol with modification in Revision of Unicompartmental Knee Replacement to Total Knee Replacement. A larger cohort of patients will be required to establish our Protocol as standard technique for such revisions.

**Abstract no.: 35203**

**AN ASSESSMENT OF KNOWLEDGE OF MEDICAL ETHICS IN INDIAN ORTHOPAEDIC SURGEONS**

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We developed a questionnaire to evaluate knowledge of ethical issues among orthopaedic surgeons of India and to assess their ability to handle ethical dilemmas. The twenty item survey evaluates seven areas of medical practice: confidentiality, informed consent, truth-telling, the physician-patient relationship, economic aspects of care, end-of-life decision-making, and the approach to an incompetent colleague. It was administered to 30 orthopaedic surgeons of central India and residents in two orthopaedic surgery training programs. Overall, they correctly answered a mean of 42.5 per cent of the twenty questions. The respondents could not appropriately handle questions involving economic aspects, truth-telling, confidentiality, and an incompetent colleague. There was poorer understanding of proper ethical conduct with regard to informed consent, the physician-patient relationship, and end-of-life decision-making. No significant differences were found, with the numbers available, in overall performance according to site, attending compared with resident status, age, gender, or whether the physician had had training in ethics. Economic, social, and professional forces have increased the medical ethical issues facing orthopaedic surgeons. Medical ethics now must be taught in training programs in orthopaedic surgery. Our survey of two orthopaedic surgery training programs demonstrated that orthopaedic surgeons approach most medical ethical problems inappropriately.

**Abstract no.: 35204**

**SLABILIZATION OF ACUTE & COMPOUND HAND INJURY BY 18 GAUZE SPINAL NEEDLE INSTEAD OF K-WIRE**

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Till now stabilization of tip of fingers injury was known by K wires but not by hypodramic or spinal needles in literature. Proximal phalangeal and distal metacarpal injury treated by K wires needs expert hands to avoid soft tissue handling in compromise situation. In our study spinal-needles is used extraskेतally , anterior th phalanges, and six Hourly xylocaine is pushed like we do in spinal anasthisia for another 72 hours to facilitate distal vaso dilation & pain block , after 72 Hours theese needles are cut from the entry point so as to act lite K-Wire, secondry procedure is done as and when viablity is confirmed. We Are reporting results of 16 cases saved by this procedure.

**Abstract no.: 35205**

**TROCHANTERIC FLIP OSTEOTOMY  
INDICATIONS,TECHNIQUE,RESULTS IN 23 PATIENTS**

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Visualising high posterior wall fractures and removing any intra articular fragments has always been a challenge to the surgeon because of vascularity of femoral head is at great risk due to close relation of medial circumflex artery(MCFA) , the main vessel supplying the femoral head,with the external rotators of the hip.Posterior approach with Kocher-Langenbeck incision and surgical dislocation of the hip after trochanteric flip osteotomy and anterior capsulotomy preserves the vascularity as external rotators are not divided,which in turn protect the MCFA.We are reviewing the technique of digastric trochanteric flip osetotomy.We will try to clear its known indications,mentioned in the literature along with the complications of this procedure.

**Abstract no.: 35210**

**TREATMENT OF MALIGNANT BONE TUMOURS OF PROXIMAL HUMERUS BY PROSTHETIC REPLACEMENT OF SHOULDER JOINT**

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**Abstract:** Objective: To discuss the treatment of malignant bone tumours of proximal humerus by the replacement of artificial shoulder joint. Methods: From August 1985 to August 2012, 53 patients with malignant bone tumours of proximal humerus were treated with segmental resection and prosthetic replacement of shoulder joint. The tumours involved in these patients were osteosarcoma (14 cases), giant cell tumour (14 cases), chondrosarcoma (7 cases) , Ewing sarcoma ( 3 cases), malignant fibrohistiocyoma (5 cases), non-Hodgkin lymphoma (3 cases), fibrosarcoma (3 case) and metastatic malignant tumour (4 cases). Results: Of the 53 patients, 6 was lost from follow- up and 10 cases died after operation, of which 3 died from primary tumour of lung and 7 died from metastasis of primary malignant tumours. 3 cases because of local recurrence undergoing forequarter amputations in 1 case endoprosthesis was removed and revised because of deep infection and the other 34 patients were survived for 6 months to 18 years (mean 6 years). There was no loosening or fracture of the endoprotheses. Function was evaluated with Enneking's system for the functional evaluation of reconstructive procedures after surgical treatment of tumours of the musculoskeletal system. The mean score was 24.6, 23 patients (67.6%) attained the scores more than 24. Conclusion: It can be evident that prosthetic replacement of shoulder joint for the treatment of malignant tumours of proximal humerus would not only keep the integrated appearance, but also preserve the function of the upper extremity to a greater extent.

**Abstract no.: 35211**

**INNOVATIVE, COST-EFFECTIVE BIPOLAR RADIAL HEAD PROSTHESIS-  
A SHORT TERM ANALYSIS**

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Background: Radial head arthroplasty using innovative, cost-effective, surgeon-friendly modified bipolar radial head prosthesis was performed in 24 patients from November 2009 till January 2012. Methods: There were twenty male and four female patients who underwent this surgery. The cohort was reviewed at a mean follow up of 90 weeks (range 48 to 158 weeks). The results were assessed using the Mayo elbow score and Broberg, Morrey elbow score. Results: Functional results as per Mayo elbow score showed eighteen patients had excellent results, four patients had good results, one patient had fair result and one patient had poor result. Mean flexion of 121 degrees, supination of 72 degrees and pronation of 63 degrees could be achieved. Mean Mayo elbow score was 93(range 50 to 100). We had two cases of infection, one case of elbow pain due to high radio-capitellar distance, two cases of aseptic loosening and one case of recurrent elbow dislocation. Conclusion: We conclude that radial head replacement by the modified prosthesis is a cost-effective and surgeon-friendly method in reconstruction of the unstable elbow joint after comminuted radial head fractures.

**Abstract no.: 35214**

**KENT HIP ENDOPROSTHESIS: FOLLOW-UP STUDY OF 41 CASES FOR 5-10 YEARS**

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Kent Hip endoprosthesis has been used for almost 20 years for reconstruction of the proximal femur after major resection or poor bone stock. The longest mean follow-up reported in the literature is a 5-year follow-up of 145 patients. The aim of our study was to examine the clinical results of proximal femoral reconstruction with Hip-Kent after 5-10 years of follow up. Our study included all patients who had Kent Hip implanted in the Republic of Slovenia in the time period of 2001-2006. Results show 41 Kent Hip endoprostheses (18 males, 23 females) were implanted in 4 orthopaedic centers. The mean age at Kent Hip implantation was 69.4 years, on average each patient had undergone 2 prior surgical procedures. Additional perioperative periprosthetic fracture occurred in three cases and bone fissure (splitting) in seven cases. In the course of 5-to10-year follow-up after the operation, surgical revision was necessary in eight cases (2x bolt migration, 2x screw breakage, 3x luxation, 1x deep infection). Half of the patients died in the last 10 years, 11 were not reachable and the remaining 10 surviving patients reported satisfactory clinical outcome with full weight bearing gait or the use of a single crutch. The mean follow-up was 6 years in the group of 41 patients and 9.33 years in the group of surviving patients. Our patient series has the longest mean follow-up of Kent Hip revision endoprosthesis reported so far.



**Abstract no.: 35218**

**EFFICACY OF MULTIMODAL PAIN CONTROL PROTOCOL IN TOTAL HIP ARTHROPLASTY**

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Background: This study evaluated the benefits of a multimodal pain control protocol in patients undergoing total hip arthroplasty (THA). Method: 30 patients undergoing unilateral primary THA were divided to undergo either a multimodal cocktail injection or a taken celecoxib (400mg) on the day of the operation at the morning. 14 patients (A group) were received multimodal cocktail injection, and 16 patients (B group) were taken celecoxib on the day of the operation at the morning. The evaluation items included assessment of pain Using a 100-point visual analog scale (VAS) after the patients awoke on the day of the operation and on postoperative day 1, the dose of diclofenac sodium suppository, and side effects. Results: The average VAS score on the day of the operation was 29.6 in A group and 36.1 in B group, and those of on postoperative day 1 was 24.5 in A group and 24.0 in B group, respectively. Significant difference was found on the day of the operation. The amount of diclofenac sodium suppository average used of the day of the operation was 17.3mg in A group and 21.9mg in B group, and those of postoperative day 1 was 21.1mg in A group and 34.4mg in B group. The dose of diclofenac sodium suppository was significantly low in A group. No cardiac or central nervous system toxicity was observed. Discussion: Intraoperative locally multimodal drug cocktail injection can significantly reduce pain on the day of the operation.

**Abstract no.: 35223**

**SUCCESSFUL MANAGEMENT OF A RARE CASE OF FUNGAL INFECTION FOLLOWING PRIMARY TOTAL KNEE ARTHROPLASTY BY ANTIFUNGAL THERAPY AND DELAYED REIMPLANTATION**

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**BACKGROUND:**Infection following Total Knee Arthroplasty is still the most dreaded complication for the patient and the surgeon. A variety of organisms are known to cause infection. However, fungal infection post knee arthroplasty is very rare, the most commonly reported organism being candida species. Aspergillus Fumigatus, etc. have also been reported.**MATERIALS/METHODS:**We present a case report of a 62 year old lady with fungal infection after 2 years of total knee replacement. She presented with pain and difficulty in walking for the past 6 months. Investigation revealed loosening of prosthesis with bone destruction. Inflammatory markers were elevated. The cultures were positive for candida. She underwent debridement, resection arthroplasty and antifungal plus antibiotic loaded cement spacer insertion, antifungal therapy with fluconazole followed by delayed reimplantation and further fluconazole therapy. Total duration of fluconazole treatment was 30 weeks. After reviewing the literature, as few as 20 cases of fungal infection post TKR were reported all over the world. However, similar cases were not reported so far in India. Therefore we bring forward to you this rare and interesting case report. **RESULTS:** At 4 years follow-up, the patient is doing well and radiological examination of the affected knee showed a firm attachment of the prosthesis. She has good functional range of motion and there is no evidence of recurrence of infection. **CONCLUSION:**Fungal infections can be treated successfully by removal of all infected material, appropriate antifungal treatment and delayed reimplantation.

**Abstract no.: 35230**

**DEFINING THE "ACETABULAR FRACTURE COMPLEX" AND ITS MANAGEMENT**

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Introduction: Associated fractures can affect management, treatment approach or outcome of acetabular fractures. These are not new but relatively uncommon. We call these combination injuries-“acetabular fracture complex(AFC)”. The purpose of study was to analyze such injuries and discuss relevant treatment strategies through case examples. This is important as initial treatment of associated injuries may affect treatment of acetabular fracture. Materials and Methods: Fifteen such cases presenting in emergency department were included. Patients were resuscitated according to ATLS guidelines. Relevant imaging was obtained including Judet views and CT scan. Cases were discussed in radio-ortho conference and planned for surgical intervention. Results: Posterior dislocation of hip(5/15) was the most common association. Fracture shaft femur was associated in 4/15 cases. Fracture neck femur, femoral head and proximal femur were associated in two cases each. Patients were operated twice for association with neck femur fractures and where closed reduction of hip dislocation was not achieved in emergency. Neck femur fractures treated with cannulated cancellous screws and shaft femur fractures fixed with retrograde nailing needed separate incisions. Remaining cases were managed in single operative sitting with single incision. Conclusions: Identifying associated injuries in close proximity of acetabular fractures is important for appropriate management as they have an impact on timing of surgery, surgical approaches and final outcome. A structured plan must be prepared that best possible treats both injuries, either in a chronological or concurrent manner.

**Abstract no.: 35232**

**ARTICULAR RECONSTRUCTION AND FIXATION OF AO C2/ C3  
COMMUNUTED PATELLAR FRACTURE BY MINI FRAGMENT SCREWS,  
CERCLAGE WIRE AND TENSION BAND WIRE**

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Introduction: Comminuted patellar fracture reduction and articular reconstruction is a difficult challenge to deal with as patellar articular surface consist of medial facet, lateral facet and median ridge. Restoration of extensor mechanism and three dimensional articular surface, reconstruction is our primary goal in treating the comminuted AO C2/ C3 patellar fractures. Material and Methods: With meticulous surgical technique reduction of fragments by everting the major fragments, direct observation of articular reduction and fixation with mini fragment screws then final reduction of all fragments and fixation by cerclage wire and tension band wire, it is possible to reconstruct patellar articular surface. Our study is retrospective analysis of 30 patients treated by this method. All fractures are classified as 45- C2 /C3 (based on AO/OTA classification) were reduced and fixed with a 2.4mm screws, cerclage wire and tension band in a figure-of-eight configuration. The average follow-up period was 18 months. The Activity of Daily Living Scale (ADLS) of the Knee was used to assess symptoms and functional outcome of the knee. Results: In all our cases, fracture union was achieved at an average of 10 weeks. The average ADLS score was good (92.5 %). Knee was splinted in extension for about 2weeks then Knee Range of moment exercise was started; full range of knee range of motion was achieved by end of 12weeks. Axial radiograph did not show any articular degeneration at the time follow up. None of the patients had any infection and implant failure.

**Abstract no.: 35233**

**ARE ESR AND CRP RELIABLE INDICATORS OF INFECTION? – AN EVALUATION OF 48 CONSECUTIVE CASES OF TWO STAGE REVISION ARTHROPLASTY**

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INTRODUCTION: ESR and CRP are important to assess infected total joint arthroplasty. But the validity of such tests is unknown. The purpose is to evaluate the clinical outcomes and correlate it with the ESR and CRP values in two stage revisions. METHODOLOGY: We evaluated serial ESR and CRP values of 48 consecutive cases of two stage revisions between September 2006 to August 2011. Correlation with clinical parameters was done to determine significance. We hypothesized that decreasing values of ESR and CRP before 2nd stage would correlate directly with successful outcome. RESULTS: The average age was 48.5 years and average follow up 3.5 years (1.5–6.0years). Harris Hip Score improved from 35.5 to 82.8. The mean pre operative CRP was 88 and ESR 50. The CRP values before 2nd stage ranged from 7.5 to 110 and ESR 20 to 70. Post operatively mean CRP was 8 and ESR 20. Out of the 15 successful cases, 5 (33%) had significantly high values before the second stage ( $p < 0.05$ ). In this group CRP ranged from 60 to 110 (mean 85) and ESR from 40 to 70 (mean 55). However, the high values did not correlate with either clinical signs of persistent infection or culture, thereby disproving our initial hypothesis. CONCLUSION: Significant high levels of ESR/CRP may not indicate presence of active infection in some patients of second stage treatment for infected arthroplasty. Correlation with respect to clinical examination and presence of other comorbidities like Rheumatoid arthritis, Tuberculosis etc. should be evaluated before 2nd stage revision.

**Abstract no.: 35236**

**HOW EFFECTIVE IS AUTOGENOUS QUADRICEPS GRAFT FOR MEDIAL PATELLO FEMORAL LIGAMENT (MPFL) RECONSTRUCTION IN PATELLAR INSTABILITY?**

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Introduction: Injury to Medial Patello Femoral Ligament (MPFL) is currently considered as a primary patho-anatomy in patellar dislocations. MPFL accounts for nearly 53% of the medial soft restraint for patella and many studies have shown improved patellar tracking and reduced re-dislocation rates after MPFL reconstruction. Many reconstruction techniques have been described and we report the outcome of MPFL reconstruction using autogenous quadriceps graft. Patients and Methods: A prospective study was done to assess the outcome of MPFL reconstruction using quadriceps graft. All patients with MPFL reconstruction with or without distal realignment procedure were considered to be included. MPFL reconstruction was done using superficial strip of quadriceps by an anteromedial incision and attached close to medial epicondyle of femur. Tibial tuberosity transfer using Fulkerson's technique was performed only in patients with increased 'Q' angle. Patients were assessed using Lysholm and Kujala scores. Results: There were 15 knees in thirteen patients with a mean age of 23.4 years. All patients had MPFL reconstruction and 5 had tibial tuberosity transfers. With a mean follow-up of 39.4 (12-57) months, the mean pre-op Kujala scores improved from 47.8 to 87.2. The mean Lysholm scores improved from 54.2 to 86.8. According to Lysholm scores 7 patients had excellent, 5 good and 1 fair and 2 poor results. None of the patients had patella re-dislocations. Conclusion: MPFL reconstruction with quadriceps graft appears to be effective producing good results in patients with patellar instability.

**Abstract no.: 35237**

**DOES INTRA-OPERATIVE CELL SALVAGE (ICS) REDUCE THE NEED FOR ALLOGENIC BLOOD TRANSFUSION IN PATIENTS UNDERGOING COMPLEX PRIMARY AND REVISION HIP SURGERY?**

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Introduction: Complex primary and revision hip surgery is usually associated with increased intra-operative blood loss and consequently many patients need blood transfusion. Allogenic blood transfusion is a limited resource and has many risks including risks of disease transmission and transfusion errors. Intra-operative cell salvage (ICS) is a suitable alternative and recommended when anticipated blood loss is 20% of the patient's estimated blood volume. Patients and Methods: Between 2009 and December 2011, nearly 54 patients underwent complex primary or revision hip surgery by the senior surgeon. Data was available for 43 patients with an average age of 71.18 (21-92) years. Six patients were on warfarin or clopidogrel which was stopped prior to surgery as per the hospital protocol. One patient belonged to ASA grade 1, 18 patients ASA grade II and 24 patients ASA grade III. Results: Thirty two patients had single stage revision surgery, two patients 2-staged revision and the rest complex primary total hip replacements. Extended trochanteric osteotomy (ETO) was done in 13 patients. The mean surgical time was 218 minutes. The mean ICS collection was 856 (0-1850) mls. The mean ICS re-infusion was 426 (0-1234) mls. Twenty five patients subsequently needed allogenic blood transfusion. Nearly one third (36%) of the total need for blood transfusion was met by ICS. Conclusion: Intra-operative cell salvage is a useful way of reducing the need for allogenic blood transfusion in patients undergoing complex primary and revision hip surgery.

**Abstract no.: 35239**

**OK MORREY ARTHROPLASTY: IS IT AN EFFECTIVE OPTION FOR OSTEOARTHRITIS OF THE ELBOW?**

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Introduction: Degenerative osteoarthritis of the elbow is an uncommon condition, usually affecting middle-aged men. It can cause disabling symptoms like pain, stiffness and locking. Surgery is indicated when conservative methods fail. The various methods described are OK Morrey procedure, arthroscopic debridement and total elbow replacement. OK procedure was described in 1978 and has been used to treat mild to moderate osteoarthritis. Only few series have been reported until now. Patients and Methods: Ten patients with osteoarthritis underwent OK Morrey procedure between 2006 and 2011 by the senior author. The mean age was 63.1 years and males predominated in the study. The mean duration of symptoms was 33.3 months (SD:  $\pm 20.4$ ). The procedure was done under general anaesthetic with regional block, in the lateral position. All patients had post-op physiotherapy. Outcome was assessed by improvement in range of motion, Mayo Elbow Performance Score (MEPS) and DASH score. Results: With a mean follow-up of 20.2 ( $\pm 17.2$ ) months, the mean arc of movement in the elbow improved from 67° pre-op to 91° post-op. The mean Mayo elbow scores improved from 51.5 to 83.5. The mean post-operative DASH score was 26.9 (SD  $\pm 22.3$ ) with 7 out of 10 patients having good to excellent outcome. Our results compare to the previously published papers by Morrey et al 1992, Autuna et al 2002 and Phillips et al 2003. Conclusion: OK Morrey procedure appears to be a viable option for patients with osteoarthritis of the elbow, providing good mid-term results.



**Abstract no.: 35240**

**FUNCTIONAL OUTCOME OF FRACTURE FOREARM BONES TREATED WITH INTERLOCK INTRAMEDULLARY FIXATION**

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Aim of the study: To study the functional outcome of patients with fracture of forearm bones treated with interlock (I/L) intramedullary nailing. Materials and method: Our study design was prospective interventional study between Sept 2009 to Aug 2010. In 22 patients with 32 forearm bone fractures treated with I/L intramedullary nailing, 10 were open fractures & 5 segmental fractures. The average age of patients was 38.9 years (19-71).regular clinical and radiological follow up was done; the average follow up was 10.5months (6-15.5). Functional outcome measured using Grace &Eversmann score and DASH scoring. Results: The average length of time to demonstrate bone healing was 14.2 weeks(10-22). Complications include, non union-1, superficial infection-4, pain at k wire site-3, pain at olecranon(ulnar nail insertion site)-2, Proximal screw back out-2, tourniquet palsy-1(who recovered in 3 weeks). Average DASH score in our series was 9.95 (range 3-25). Results according to Grace&Eversmann score, excellent and good in 18, acceptable-3, unacceptable-1 patient. Conclusions : Our results of fixation of fracture forearm bones with interlock nailing is comparable or better than the results attained after plate fixation in available literature. So we consider it as advantageous particularly while treating open, segmental & comminuted fractures of the forearm bones. Radiation exposure has to be taken into account.

**Abstract no.: 35248**

**COMPARATIVE STUDY BETWEEN TKA USING PATIENT SPECIFIC INSTRUMENT AND TKA USING MANUAL INSTRUMENTATION**

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Introduction: Variety of techniques has been introduced to improve the outcomes of total knee arthroplasty (TKA). Choosing the best technique has always been a challenge for orthopedic surgeons, as each technique has its own advantages and disadvantages. The aim of this study is to compare the efficacy of patient specific guides with manual instrumentations regard with, retaining the neutral alignments. Material and Methods: Patients have been allocated into two groups. Each group has been operated with different technique, one using the patient-specific guides (PSG) and the other group with the manual instrumentations (MI). Coronal and sagittal alignments have been evaluated in all the patients. A comparison in duration of the surgery and tourniquet time were also been performed. Results: 289 knees were evaluated, 250 operated with MIs and 29 knees with PSGs. The duration of the surgery and tourniquet time were significantly longer using manual instrumentations. The results regarding retaining the neutral alignments in coronal and sagittal planes had no difference. Conclusion: The efficacy of TKA in retaining the neutral alignment in sagittal and coronal plane has no significant different causing either technique in hands of an experienced surgeon. But the surgery and tourniquet times have significantly decreased using PSGs.

**Abstract no.: 35256**

**10Y RESULTS OF THE ADVANCE MEDIAL PIVOT TKA SYSTEM: AN EXCELLENT SOLUTION IN YOUNG AND OLDER PATIENTS**

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AZ Maria Middelaers, Gent (BELGIUM)

The Advance Medial Pivot TKA system has been introduced in our department since 1998. It has since then been our preferred TKA system for all our patients. Since its introduction more than 2000 of these knees have been implanted with excellent survival and clinical results. All our data are prospectively recorded and we present here the results of the first 1000 implantations in 873 patients. 75% are female and 15% are bilateral with a mean age of 70y (range 37-89y) and BMI on average of 28.7. It is the perfect indication for all type of gonarthroses even for the difficult fixed varus and fixed valgus knee and is also routinely used in revision setting. The only contraindication is the deficient medial collateral ligament. In all our cases a standard medial parapatellar approach is used with all components being cemented. The general failure rate with removal of prosthetic components, including 5 two-stage revisions, was 9 out of 1000. This series includes our learning curve! All our patients are routinely followed-up clinically (KSS/KOOS) and radiographically at 2m/5m/1y/2y/5y/10y. The average KSS is 92 at 10Y and the mean ROM is 120°. After 14y of use of this system no revision had to be performed for aseptic loosening or wear. Moreover we haven't seen any case of wear of the insert at radiographic follow-up at 14y! These excellent results make it therefore our preferred solution of knee arthroplasty for all our patients.

**Abstract no.: 35261**

**NON-UNION OF CALCANEUM- A RARE COMPLICATION OF CALCANEAL FRACTURE**

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Intra-articular fractures of calcaneum are known to be difficult to manage and lead to multiple complications including subtalar arthritis and malunion. However, non-union of calcaneum is rarely encountered. Our team could find only a total of 12 patients reported in six studies on reviewing the available literature (English language only). We report a case of calcaneal non-union in a 29 year old obese female who sustained a closed calcaneal fracture following a fall from height. She was managed conservatively with cast immobilization for 08 weeks followed by protected weight bearing for another 8 weeks at another centre. She was referred to our centre with persistent pain and swelling of her heel. Clinical and radiological assessment, including CT scan of the foot, revealed evidence of calcaneal non-union with subtalar arthritis. She was also detected to have Diabetes mellitus during pre-operative assessment. The patient was managed by subtalar arthrodesis and open reduction internal fixation of calcaneal non-union using two 6.5 mm cancellous screws and autogenous bone grafting. In the immediate post-operative phase, patient developed wound dehiscence with superficial surgical site infection which was managed successfully by wound dressings and antibiotics. The patient has been followed up for six months. At last follow up, the subtalar joint is completely arthrodesed and there is complete calcaneal union at non-union site. She is ambulant without support and is completely pain free.

**Abstract no.: 35272**

**COMPLEX HEAD SPLITTING FRACTURES OF THE PROXIMAL HUMERUS IN YOUNG PATIENTS**

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Head splitting fractures of the humeral head are rare. Surgical attempts at osteosynthesis may be associated with less satisfactory outcomes due to inherently complex fracture personality and demands in surgical technique. Records of 16 patients who underwent locked plating for complex head splitting humeral head fractures were reviewed. Clinical, radiological and functional outcome were analysed. 14 evaluable patients were included at a mean follow up of 31 months. Union was achieved in 13 patients at a mean time of 16 weeks. Non-union was seen in 1 patient. Avascular necrosis of the humeral head was seen in 3 patients. Other complications include impingement in 1 patient and reduced range of motion in 2 patients. The mean Constant score was  $71 \pm 8$  and the mean DASH score was  $19 \pm 6$ . Locked plating achieves acceptable results in complex head splitting fractures of the proximal humerus with a slightly higher complication rates.

**Abstract no.: 35285**

**INCIDENCE AND RESULTS OF TOTAL HIP REPLACEMENT FOR COXARTHROSIS SECONDARY TO DEVELOPMENTAL DYSPLASIA OF THE HIP.SHORT-TERM RESULTS**

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During 2007-10 years,451 primary total hip prostheses were implanted by senior of us.From that number,210 hips (47%) have osteoarthritis secondary to developmental dysplasia of the hip (DDH).187 patients (89%) were female and 23 (11%) male.The mean age at the time of surgery was 58 years(range 21-85).The severity od dysplasia was classified according to Crowe et al-128 hips (61%) were classified as Crowe type I,50 hips (27%) Crowe type II, 13 hips (6%) Crowe type III and 13 hips (6%) Crowe type IV. We have implanted: 126 (60%) LIMA cementless prostheses ; 58 (28%) cemented LIMA prostheses, 13 (6%) hybrid type LIMA prostheses and 13 (6%) Johnson-Johnson ceramic-ceramic hip prostheses. .Abbreviation femoral osteotomy was done in 13 (6%) hips.The acetabular roof was reconstructed by bone graft in 3 hips.The mean duration of follow-up was 20,5 months (range-9-32).The average HHS recorded in all cases was improved significantly, from the previous 32,3 to a postoperative 89,5. Complications: transient postoperative sciatic-nerve palsy developed in 3 patients.There were five postoperative dislocations; six fractures of the femoral shaft and four trochanteric fractures- total complications-19 (9%).We didn't see any sign of the loosening or the other reasons for revision. Conclusion : We'd like to underline very high incidence of developmental dysplasia of the hip in our everyday practice and good results with this type of surgery after short period of follow-up.

**Abstract no.: 35286**

**LIMITED LAMINECTOMY AND RESTORATIVE SPINOPLASTY IN SPINAL CANAL STENOSIS: OUTCOME ANALYSIS IN 40 PATIENTS**

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Background: Decompressive laminectomy is widely used as an operative treatment for lumbar canal stenosis. Limited laminectomy helps to achieve adequate decompression and restorative spinoplasty preserves the posterior ligament complex integrity to prevent iatrogenic instability. The present study was piloted to evaluate the clinico-radiological outcome and complications of limited laminectomy and restorative spinoplasty in spinal canal stenosis. Patient and Methods: 44 patients with degenerative lumbar canal stenosis underwent limited laminectomy and restorative spinoplasty at our centre from July 2008 to December 2010. 40 patients were followed up for 32 months (range 24-41 months). There were 26 females and 14 males with an average age of  $64.7 \pm 7.6$  years (range 55-88 years). All patients underwent thorough clinical evaluation and radiological assessment which included plain radiographs, MRI and CT scans. Final outcome was assessed using JOA (Japanese Orthopaedic Association) score. Results: At the time of final follow up, all patients recorded marked improvement in symptoms. The average preoperative claudication distance was  $95.2 \pm 62.56$  m which improved to  $582 \pm 147.70$  m. The mean pre-operative canal diameter improved from 8.3mm to 13.2mm. The JOA score improved from a mean of  $13.3 \pm 4.1$  to  $22.9 \pm 4.1$  at the time of final follow up. Dural tears occurred in 2 patients which were repaired and needed no additional treatment. Conclusion: Limited laminectomy and restorative spinoplasty is an efficient surgical procedure which relieves neurogenic claudication by achieving sufficient decompression of the cord with maintenance of spinal stability.

**Abstract no.: 35296**

**TEN YEAR PROBABILITY OF FRAGILITY FRACTURES IN INDIAN WOMEN ACCORDING TO WHO FRACTURE RISK ASSESSMENT TOOL (FRAX)**

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**Introduction:** Osteoporosis is a major global public health problem, associated with significant morbidity, mortality and socioeconomic burden. It is defined as a skeletal disorder characterized by low bone strength, leading to an increased risk of fragility fractures. The greatest bone loss occurs in women during peri-menopause and is associated with estrogen insufficiency, a condition of menopause. The FRAX® tool has been developed by WHO to evaluate fracture risk of patients. **Materials & Methods:** A prospective cross sectional study, conducted within a period of one year recruiting 675 cases after meticulous screening. Cases were asked to fill FRAX questionnaire. The fracture risk assessment was done and compared with other haematological investigations of calcium metabolism. DEXA was done to obtain T score. The patients were explained about fracture risk in next ten years and preventive measures were advised. Follow up is planned after every one year. **Results:** Approximately 55 percent women (371/675) of peri and post-menopausal age group were found either osteopenic or osteoporotic with higher risk of fragility fractures in next ten years. The ten year probability of fragility fractures according to FRAX is lower in Indian women as compared to that of western population. **Conclusion:** Fragility fractures in postmenopausal Indian women are one of the leading causes of disability and socioeconomic loss yet the extent of problem is lower in Indian population than in Western Countries. With the help of FRAX we can estimate the probability of such fractures and can take preventive measures to avoid them.



**Abstract no.: 35297**

**MINIMAL INVASIVE USE OF DISTRACTION HISTOGENESIS IN RELAPSED CLUB FOOT**

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Introduction and aim of the work: Conventional surgical treatment of relapsed club foot deformities is not always successful or easy to apply. In this study we evaluate the use of the distraction histogenesis technique for management of relapsed club foot deformities. Methods: From Jan 2001 -2006, 53 cases 2- 6 years old with relapsed club foot deformities with history of average 3 previous operations (range, 1-8 operations). This thesis based on 50 consecutive cases (61 feet), of average age 4 years and 3 months (range, 2- 6 years). We used preoperative assembly of the leg construct of the apparatus but ankle and foot construct was designed according to the condition of deformity. Twenty patients were discharged from the hospital the same day of the operation. Results: The range of operative time was 1 – 2.5 hours (average of 1.5 hours). Average time in the fixator was 18 weeks (range, 10 weeks - 30 weeks). After fixator removal cast was applied for one month, followed by night splint and special shoes for their daily activities. The average follow-up period was 42 months (range, 36 - 84 months) after fixator removal. The results were: good in 50 feet, fair in 7, bad in 4. Conclusion: Ilizarov Treatment is lengthy, difficult, fraught with complications, and a technically demanding procedure. However, we believe that Minimal invasive use of distraction histogenesis in relapsed club foot using Ilizarov external fixator in a closed management method in treating relapsed club foot deformities in the gray old age zone is an effective.

**Abstract no.: 35300**

**NOVEL USE OF CRYOTHERAPY IN KNEE ARTHROPLASTY**

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**INTRODUCTION:** The use of cryotherapy for the treatment of injuries is well-established. More recently, several studies have looked at cryotherapy in elective arthroplasty, and also at the different modalities through which the cryotherapy can be delivered. **METHOD:** A literature search was performed but revealed no consensus in delivery / application method, or in duration of usage. Moreover, there are conflicting results about success of these procedures and the outcomes associated with their use. We present a single-surgeon case series of patients treated with application of a cryotherapy pad immediately post-operatively (in theatre) after elective total knee replacement. **RESULTS:** The success of this was borne out in the reduced use of analgesia, early discharge rates, reduced blood loss & swelling and outcomes of success such as improved range of movement. The effect is thought to be due to the reduced inflammatory response and hyperaemia seen in the normal post-operative phase, with reduced Leukocytosis. There were no adverse reactions in this group, infections, or side-effects. **CONCLUSION:** Cryotherapy pads applied in theatre can provide a safe, reliable and reproducible benefit in the post-operative management of knee arthroplasty, with improvements both in patient outcomes and satisfaction.

**Abstract no.: 35302**

**STREAMLINING TOTAL KNEE REPLACEMENT THEATRE SETS :  
FUNCTIONAL AND COST-EFFECTIVE?**

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QEQM, Kent (UNITED KINGDOM)

**INTRODUCTION:** Current economic climate coupled with NHS reforms highlight the importance of careful expenditure. After total hip replacement, total knee replacements (TKR) are the most common elective orthopaedic procedure; indeed nationally 70,000 are performed annually, and given the aging population and socioeconomic demographics these numbers are likely to increase dramatically in the future. Sterilisation of surgical equipment, although imperative, is a costly process. Instruments may be sterilised in batches on trays cheaply; or as individual instruments at a higher cost. Potentially, sterilisation costs may be reduced by streamlining sets. **AIMS:** To identify the functionality of streamlined TKR sets, and obtain evidence of the sterilisation costs saved with their use. **METHODS:** In our hospital, prior to July 2011, 2 instrument trays and 4 individually packaged instruments were opened for each TKR. After this time the sets were streamlined so only 2 trays were required to be opened per procedure. **RESULTS:** The cost of sterilising instruments per TKR prior to July 2011 was £51.87. The streamlined trays cost £33.52; a saving of £18.35 per procedure. 736 TKRs were performed since the change providing a saving of £13,500 over 4 months. No separate instruments were required as extras for any procedure. Thus an annual saving can be determined as £40,500 **DISCUSSION/CONCLUSION:** This project shows that the streamlined sets are functional and provide an excellent money saving opportunity, without compromising the quality of patient care.

**Abstract no.: 35303**

**DRUG RESISTANCE PATTERNS IN 119 CASES OF DRUG-RESISTANT TUBERCULOSIS SPINE**

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**PURPOSE:** We report the largest study conducted till date of drug resistant tuberculosis in spine analyzing the drug susceptibility patterns in 119 cases of proven drug resistance. **METHODS:** An observed cross-sectional study was conducted. Seven hundred patients with positive cultures underwent sensitivity testing to 13 commonly used anti-tubercular drugs using BACTEC MGIT-960 system. **RESULTS:** Females (64.7%) outnumbered males (35.2%). Only three patients (2.5%) were found HIV positive, and none of these had AIDS. Fifty three (44.5%) patients had taken AKT in the past for some form of tuberculosis. Nine (7.5%) patients had history of treatment default. The drug sensitivity testing revealed 92 (77.3%) cases of multi drug resistance (resistance to both isoniazid and rifampicin) and 4 (3.3%) cases of XDR-TB spine. Of the individual drugs, widespread resistance was present to both isoniazid (92.4%) and rifampicin (80.6%), followed by streptomycin (70.5%). Least resistance was found to kanamycin, amikacin and capreomycin. **CONCLUSION:** It is recommended to do routine biopsy, culture and drug sensitivity testing in all patients of tuberculosis spine to guide selection of appropriate second-line drugs when required. In cases of non availability of drug susceptibility testing despite repeated attempts, it is suggested to use data from large series such as this to plan best empirical chemotherapy protocol.

**Abstract no.: 35304**

**ORIF UNSTABLE FRACTURE PROXIMAL HUMERUS:A TECHNIQUE  
DEPENDANT SURGERY**

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72 cases of displaced proximal humerus fractures were treated by open reduction and internal fixation by Deltopectoral approach. Tuberosities were routinely reconstructed with No 2 ethibond through rotator insertions, both to each other and through the plates. Both Synthes and Zimmer proximal humeral plates were used. Varus collapse, implant cutout and implant impingement were the major complications, all largely due to faulty technique. Most patient regained functional arc of motion, but we are yet to see any 3 part or 4 part fracture to regain full range of motion

**Abstract no.: 35305**

**STREAMLING TOTAL HIP & KNEE REPLACEMENT INSTRUMENT SETS:  
FUNCTIONAL & COST-EFFECTIVE?**

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Introduction: Current economic climate coupled with NHS reforms highlight the importance of careful expenditure. Nationally, some 70,000 Total Hip Replacements (THR) and 80,000 Total Knee replacements (TKR) were performed in 2011 according to the latest NJR data. Given the ageing population and socioeconomic demographics these numbers are likely to increase dramatically in the future. Sterilisation of surgical equipment, although necessary, is a costly process. Instruments may be sterilised in batches on trays cheaply; or as individual instruments at a higher cost. Potentially, sterilisation costs may be reduced by streamlining sets. Methods: In our hospital, prior to July 2011, 2 instrument trays and 4 individually packaged instruments were opened for each TKR. After this time the sets were streamlined so only 2 trays were required to be opened per procedure. Due to the success of this, the same principle is now being applied to THR sets. Results: The cost of sterilising instruments per TKR prior to July 2011 was £32.31, whereas the streamlined TKR tray was £14.23, offering a saving of £18.08 per procedure. In our trust, amongst the surgeons who use the new streamlines sets, around 2200 procedures are performed annually (equivalent to ~£40,000 per annum). No separate instruments were required as extras for any procedure. Similarly, THR sets are now streamlined from £42.07 to £14.23, saving £28.84 per hip replacement, offering a further >£60,000 saving per annum in sterilisation costs. DISCUSSION/Conclusion: Streamlined sets are functional and provide an excellent money saving opportunity, without compromising the quality of patient care.

**Abstract no.: 35306**

**SYMPTOMATIC VENOUS THROMBOEMBOLISM AFTER TOTAL HIP AND KNEE REPLACEMENT: A POPULATION-BASED ASIAN STUDY**

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Introduction: In Western countries, symptomatic venous thromboembolism (VTE) is a major postoperative complication after total hip replacement (THR) or total knee replacement (TKR) surgery . Limited data exists for the same for asian countries . Methods: A retrospective, population-based cohort study was performed. A randomized, systemic sampling of one million beneficiaries in a National Health Insurance Database from 2000 to 2010 was performed. There were a total of 7,346 patients in the sample who underwent THR or TKR. The patients who presented with symptomatic pulmonary embolism and deep vein thrombosis after THR or TKR within 3 months were identified. The duration of time in hospital was analyzed. Results: The incidence rate of symptomatic PE and DVT was 0.97 per 1000 THR and 6.96 per 1000 TKR patients. The incidence of symptomatic DVT in THR patients was 2.60 per 1000 and 8.90 per 1000 in TKR patients. The incidence of symptomatic PE in THR patients was 0.45 per 1000 and 1.2 per 1000 in TKR patients. The rate of using anticoagulation treatment was 20.01 per 1,000 patients undergoing TKR and THR. Patients with VTE had a longer duration of hospital stay (11.39 vs 8.9 days). Conclusions: In our study, the incidence rates of symptomatic VTE after TKR or THR was lower than historically reported rates in western populations but higher than previously reported rates for asian populations. Based on our data, VTE prophylaxis is recommended in these high risk patients in order to prevent thromboembolic complications and extended hospital stays.

**Abstract no.: 35307**

**'CAGEPLASTY' FOR UNSTABLE VERTEBRAL CENTRAL BODY LESIONS**

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Background: The treatment of unstable central body lesion with intact end plates and having neurodefecit or severe deformity like in osteoporosis, infective pathology is always difficult, especially in old age patients. Material and Methods: Five cases of pathological compression fractures with instability and intact end plates underwent this procedure. The involved vertebra is approached by Transpedicular route and TLIF (bean) Cages with autograft is inserted and supported by Pedicle screw fixation. The follow-up ranges from 6 months to 4.5 yrs. Frankel grading was used to assess pre op and post op neurology. We present a novel method to treat these unstable fractures with intrabody cage fixation through all posterior approach with a promising outcome. Results: All patients were mobilised from 1st Post Op day. Fusion has been seen in 4 cases at 1 year follow up and deformity correction was maintained at last follow up. In last case, at 6 months follow up, patient was having uneventful recovery. Discussion: Correction of deformity, fracture healing and structural support is desired goal of treatment in any type of spinal fractures. Kyphoplasty and vertebroplasty provides structural support and correct deformity but it is associated with post-procedure instability in some cases. In situ fixations are associated with increased failure rates while corpectomy and long reconstructions are associated with increased surgical duration, complications and morbidity. The retention of both end plates also makes the fusion ends closer and this novel technique more viable to attain the long term goal, i.e. fusion, earlier.



**Abstract no.: 35308**

**VERTEBRAL PAIN SYNDROME, QUALITY OF LIFE IN PATIENTS WITH SYSTEMIC OSTEOPOROSIS AND VITAMIN D DEFICIENCY**

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The aim of the study was to evaluate the vertebral pain syndrome, quality of life in patients with systemic osteoporosis and vitamin D deficiency. It was examined 283 patients with systemic osteoporosis. The mean age of women was (65.26±9.97) yrs., men - (65.25±11.20) yrs. old. 25(OH) level was evaluated by electrochemiluminescence method (Elecys 2010, Roche). The intensity of low back pain due to visual analog scale was 14.0±1.4 points in patients with 25(OH)D over 75 nmol/L, and significantly higher in examined with severe vitamin D deficiency - (43.1±3.5) points ( $p<0.05$ ). The level of low back pain in patients with vitamin D insufficiency was 34.4±3.1 points. The quality of life in patients due to EuroQoL-5D index was significantly lower in patients with optimal level of vitamin D compared with examined with severe vitamin D deficiency (2.0±1.53 compared 5.0±0.34) ( $p<0.05$ ). Summer. The higher level of the pain syndrome and a reduced quality of life in patients with systemic osteoporosis is due to the development of osteomalacia in case of vitamin D deficiency. The studies emphasis the importance of 25(OH)D evaluation in patients with systemic osteoporosis and indicate the necessity of correction of vitamin D deficiency.

**Abstract no.: 35311**

**VITAMIN D DEFICIENCY AND STRUCTURAL AND FUNCTIONAL STATE OF BONE TISSUE IN SCHOOLCHILDREN OF UKRAINE**

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The aim of the work was to determine the frequency of vitamin D deficiency among Ukrainian schoolchildren and its influence on bone mineral density. Methods. There were examined 304 children aged 10-18 years. The boys consisted 55.0 %. The average age of boys was  $12.9 \pm 0.2$  and girls- $12.4 \pm 0.2$  yr.old. The study was performed within two months - October and November 2011, to exclude the influence of seasonal factors on the level of 25(OH)D. Researches included ultrasound densitometry of calcaneus by SAHARA (Hologic), blood chemistry, 25(OH)D and intact parathyroid hormone (iPTH) in plasma were determined by Elecsys2010. Also, it was evaluated the average content of calcium and vitamin D in the diet from the products consumption frequency questionnaire. Results. Vitamin D deficiency was founded in 92.2% of schoolchildren, and vitamin D insufficiency was diagnosed in 6.1% of cases. Secondary hyperparathyroidism was verified in 0.9% of children. The average level of consumption of calcium and vitamin D in children was below recommended data, and consisted (Me649[488.7;691.86])mg/day for calcium and (Me68.69[58.45;117.3])IU/day for vitamin D. Children with vitamin D insufficiency had significantly higher data of structural and functional state of bone tissue in comparison with the data of pupils with severe deficiency of vitamin D: stiffness index  $105.03 \pm 6.12$  vs  $93.7 \pm 2.51$  % ( $p < 0.02$ ); BMD  $0.574 \pm 0.024$  vs  $0.528 \pm 0.019$  ( $p < 0.02$ ) and speed of sound  $1573.61 \pm 6.70$  vs  $1557.2 \pm 5.41$  ( $p < 0.01$ ). Conclusion. High level of vitamin D deficiency (92.2%), secondary hyperparathyroidism (0.9%), low data of ultrasound densitometry in severe vitamin D deficient children make doctors to research the effective methods of treatment and prophylactics of revealed disorders.

**Abstract no.: 35312**

**EXPERIENCE OF THE TREATMENT OF CONGENITAL PSEUDARTHROSIS OF TIBIA OF CHILDREN ON THE BASIS OF MODERN CELL TECHNOLOGIES APPLICATION**

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Introduction: The treatment of congenital pseudarthrosis is a complex problem due to high rate of relapses and even culminated in amputation. We have combined the use of cell technologies an adjunct to the surgical intervention. Materials and methods: We observed 4 patients from 1.4 till 9.0 years old. They were: one with type II according to the Crawford classification and three other with type IV (one with neurofibromatosis type I). The surgical correction consisted of classic compression-distraction osteosynthesis by the Ilizarov method with resection of pseudarthrosis zone. Intraoperatively trepanobiopsy of the ilium with sampling of small tissue column was performed. Autologous stromal osteoblasts precursor cells were isolated from bone marrow bioptate. Cultivation was carried out for 3 weeks and cells injected into pseudarthrosis resection zone. Results: The consolidation zone of resection were noted in all cases. The roentgenologic signs of consolidation were noted in 3 months after the operation. The apparatus was dismantled within the period from 5 to 7.5 months in three cases and after 12 months in one case. No pseudarthrosis relapse was noted during 6-years follow up. In three cases lengthening of the tibia were performed later. Our research demonstrates that this combination of cell technologies and classic compression-distraction osteosynthesis are reliable and required to achieve the best results.

**Abstract no.: 35314**

**TRABECULAR BONE SCORE IN TRAUMATOLOGY AND ORTHOPEDICS**

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The aim of this study was to assess the TBS role in the traumatology and orthopedics. Materials and methods. We've examined 176 healthy women aged 40-79 years (mean age – 53.4±0.6 yrs) and 117 men aged 40-79 years (mean age – 59.8±0.9 yrs). Bone mineral density (BMD) of whole body, PA lumbar spine and proximal femur were measured by DXA method (Prodigy, GEHC Lunar, Madison, WI, USA) and PA spine TBS were assessed by TBS iNsight® software package installed on the available DXA machine (Med-Imaps, Pessac, France). Results. We have observed a significant decrease of TBS as a function of age (F=6.56; p=0.0003) whereas PA spine BMD was significantly increasing with age (F=4.04; p=0.008) in the examined women. This contradiction can be traced to the spinal osteoarthritis and degenerative diseases progressing with age in the elderly patients. TBS was significantly lower in women with duration of PMP over 4 yrs (p=0.003) in comparison with women without menopause; BMD of spine significantly decreased in women with duration of PMP over 7-9 yrs (p=0.02). So, the TBS can detect changes in the state of bone tissue at the earlier stage than BMD. We have observed a significant decrease of TBS in men with ageing (F=2.44; p=0.05). Overall TBS values in men are lower than the age matched TBS values in women. Conclusion. TBS is an independent parameter which has a potential diagnostic value of its own, without taking into account the BMD results. The study concerning patients with osteoporosis and fractures is underway.

**Abstract no.: 35315**

**CLOSED INTRAMEDULLARY NAILING VS. PLATING IN THE TREATMENT OF EXTRA ARTICULAR DISTAL TIBIA FRACTURE**

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**Introduction:**The ideal form of fixation for displaced, extra-articular fractures of the distal tibia remains controversial. Operative fixation with intramedullary nail and plate osteosynthesis are mainstay of treatment. The purpose of the study is to assess the treatment outcome of distal tibia fracture treated by intramedullary nail and plate osteosynthesis.**Methods:** The results of the management for 44 patients with closed extra-articular distal tibia fracture by intramedullary nailing and plating were reviewed retrospectively. The variables include, the mean duration of union, malunion, and non-union.**Results:** eighteen patients were treated with intramedullary nail and twenty six patients were treated with plating. The mean duration of radiological union duration in nailing group was 10 weeks and 13 weeks in plating group. Four patients (22%) out of eighteen nailing group and five patients (19%) of twenty six in plating group had non-union. Seven patients (39%) of nailing group and three patients (12%) of plating group had malunion. Four patients from plating group and one patient from nailing group had infection.**Conclusion:** the plating technique in comparison to nailing has satisfactory outcome. This technique has lower incidence of non-union and malunion and it should be recommended for closed distal tibia fractures.

**Abstract no.: 35316**

**CRESCENT FRACTURE-DISLOCATION OF THE SACROILIAC JOINT:  
OUR EXPERIENCE**

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Crescent fracture dislocations are a subset of pelvic ring injuries which are caused by a lateral compression force. This entity is scarcely described in the literature. We report our experience in six cases of crescent fracture dislocation. There were 5 females and 1 male (age 25-60 years). Only one patient present with hemodynamic instability that necessitated urgent pelvic stabilization using anterior external pelvic fixator in the first stage followed three weeks later by definitive plate fixation using posterior transgluteal approach. One patient had to be managed conservatively as she had multiple co-morbidities that precluded surgical stabilization. Rest all the patients were managed using Ilioinguinal approach for definitive double anterior plate fixation with one plate across the posterior iliac wing fracture and the second across the sacroiliac joint. Excellent reduction ( $\leq 3$ mm sacroiliac step) was seen in 3 cases. One case had a 1 cm step across the inferior SI joint whereas the other had a 5 mm step. Operative stabilization afforded immediate nursing and perineal care and rapid return to function with 6-8 weeks with extremely satisfactory SF 36 scores at minimum one year follow up. Crescent sacroiliac fracture dislocations can be treated by Ilioinguinal approach using dual plating as was done in 4 cases and contrary to other authors we believe that posterior transgluteal approach should only be considered when ilioinguinal approach is not recommended. In itself the indications of posterior approach are limited and carries a risk of postoperative contamination from the adjoining perineal area.

**Abstract no.: 35320**

**RECONSTRUCTION OF THE PATELLAR TENDON WITH SEMITENDINOSUS AUTOGRAFT**

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Introduction; Successful outcome following patellar tendon rupture requires robust restoration of the extensor mechanism continuity. In cases of an acute, closed disruption, an end-to-end primary repair is the standard of care. The repair must be adequate to resist tensile forces during tendon healing. Some authors have recommended augmentation of all acute primary end-to-end repairs. Rupture of the patellar tendon occurs most commonly in patients younger than 40 years of age and is the result of an indirect large force generated by contraction of the quadriceps, which is estimated to be at least 17.5 times body weight. Patients and Methods; Seventeen patients suffered from chronic rupture of the patellar tendon, underwent reconstruction with hamstring tendon autograft and were enrolled in this prospective study. Average age at time of surgery was 30 years (range, 22 to 36 years). Average follow-up period was 21 months (range, 12 to 30 months). Patients underwent regular follow-up after clinical and radiographic preoperative and postoperative evaluation. Results; Analytical results showed satisfactory function after patellar tendon reconstruction with the use of hamstring tendon autografts. Conclusion; We suggest that the hamstring tendon autograft is a safe, effective, and acceptable choice for patellar tendon reconstruction, and that it affords good ligament reconstruction.

**Abstract no.: 35322**

**ASSESSMENT OF PRECISION AND ACCURACY OF COMPUTER NAVIGATION IN TOTAL HIP ARTHROPLASTY**

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**Introduction:** Accurate placement of implants and restoration of limb length and offset is vital for success of total hip arthroplasty (THA). The purpose of this study was to assess the precision and accuracy of computer navigation system in predicting cup placement and restoring limb length and offset. **Methods:** An analysis of 259 consecutive patients who had THA performed with computer navigation system was carried out. Acetabular cup abduction and anteversion, medialisation or lateralisation of offset and limb length change were compared between navigation measurements and follow-up radiographs. Precision, accuracy, sensitivity and specificity were calculated to assess navigation for cup orientation and student t-test used for evaluation of offset and limb length change. **Results:** Mean cup abduction and anteversion was 40.35°(SD,5.81) and 18.46°(SD,6.79) in postop radiographs compared to 41°(SD,5.03) and 14.76°(SD,6.11) for navigation measurements. Intraoperative navigation measurements had high precision and specificity for determining cup abduction and anteversion (precision >95%, specificity >90%). Change in limb length and offset was mean 6.46mm(SD,5.68) and -1.07mm(SD,5.75) on radiograph evaluation and 5.41mm(SD,5.11) and -2.24mm(SD,5.87) from navigation measurements, the difference being not significant in both (p value>0.2). Radiograph and navigation had a mean difference of 1.01mm(SD,2.83) for offset measurements and 1.05mm(SD,4.37) for postop limb length assessment. **Discussion:** We found that computer navigation assessment of acetabular cup abduction and anteversion and limb length and offset restoration has high probability of predicting correct placement of implants. To conclude, computer navigation can serve as an excellent tool for appropriate placement of implants and restoring limb length and offset in THA.



**Abstract no.: 35324**

**WEAR PATTERN OF FEMOROTIBIAL COMPARTMENTS IN OSTEOARTHRITIC KNEES WITH VARUS, NEUTRAL AND VALGUS ALIGNMENT**

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**Introduction:**We investigated the pattern of wear and tear in varus, neutral and valgus knees in OA patients depending on the femoral and tibial cuts required during TKA.**Methods:**We did a retrospective analysis of 136 consecutive patients, with a diagnosis of OA, who underwent TKA using computer navigation system. The thickness of medial and lateral cuts of distal femur and tibia were recorded using intraoperative computer navigation data. Patients were evaluated in three subgroups based on preop varus, neutral or valgus lower limb alignment. Student t test and Pearson's correlation were used to assess any significant relation.**Results:**In valgus group there was a significant difference between the femoral medial and lateral cuts ( $p < 0.0001$ ) while no significant difference between tibial medial and lateral cuts. In varus group tibial medial and lateral cuts were significantly different ( $p < 0.05$ ) while there was no significant difference in femoral medial and lateral cuts. Intergroup comparison showed that there was a significant difference between the varus and valgus group with regards to femoral medial cut, femoral lateral cut and tibial medial cut (all  $p < 0.01$ ), while no significant difference in the tibial lateral cut. We found a significant negative correlation between tibial lateral cut and preop deformity in valgus group ( $r = 0.68$ ).**Discussion:**This study shows that varus deformity is mainly a tibial phenomenon while valgus deformity mainly occurs in femur. In varus deformity, tibia is mainly affected, but femoral side is also worn off. This is most likely the natural mechanism to bring the joint axis perpendicular to the mechanical axis of lower limb.

**Abstract no.: 35325**

**A RANDOMIZED COMPARATIVE STUDY ON FUNCTIONAL OUTCOME OF PERTROCHANTERIC FRACTURES TREATED WITH DHS AND PFN.**

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Introduction:We compared 50 patients with pertrochanteric femoral fractures treated with either DHS or PFN in this prospective randomized study.Method:we compared pre op ambulation status, intraop variables,and postop functional results in terms of harris hip score.Results:Evaluation of Harris hip score at one year in patients treated with DHS (stable or unstable fracture)was found similar ( $p=0.814$ ) and similar results were noticed in PFN group(stable or unstable fractures) with  $p=1.000$ .While comparing results of all the stable fractures treated with DHS or PFN Harris hip score was found similar ( $p=0.493$ ) and similar observation was found for all the unstable fractures treated with DHS or PFN ( $p=0.814$ ) Overall in our study the Harris hip scores of all the patients treated with either of the modality did not show any statistically significant difference at the end of one year ( $p=0.434$ ).Conclusion:Hence We conclude in our study that in stable as well as in unstable peritrochanteric femoral fractures final result in terms of functional outcome are similar after one year and the choice of implant in these kind of fractures should be according to the surgeons experience and preference.

**Abstract no.: 35327**

**ASSESSMENT OF TIBIAL PLATEAU ANATOMY ON MAGNETIC RESONANCE IMAGING AS A RISK FACTOR FOR ANTERIOR CRUCIATE LIGAMENT INJURY**

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**Introduction:** The purpose of this study was to assess, in anterior cruciate ligament (ACL)-injured and uninjured population, tibial plateau anatomic variables [medial and lateral tibial plateau slopes (MTPS and LTPS) and medial tibial plateau depth (MTPD)] on conventional magnetic resonance imaging (MRI) using a new combined method and to determine whether these variables are risk factors for ACL injury. **Methods:** Seventy-three isolated ACL-injury patients (20 women and 53 men) were compared with 51 control group patients (19 women and 32 men). **Results:** The combined method had very high interrater and intrarater reliability compared with previously described methods. LTPS was significantly steeper in the overall injured group and injured men compared with the control group, with odds ratio (OR) of 3.031 and 5.89, respectively. Women with ACL injury had significantly shallower MTPD than uninjured women, with OR of 4.13. **Conclusions:** We conclude that the new combined method is accurate and reproducible for assessing the tibial plateau anatomy. Women with shallower MTPD and men with steeper LTPS are at higher risk of sustaining ACL injury. Overall, steeper LTPS is a significant risk factor for sustaining ACL injury.

**Abstract no.: 35328**

**WORK RELATED LOW BACK PAIN AMONG INDIAN IT PROFESSIONALS AND TREATMENT USING A SEQUENCED PROTOCOL**

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The aim of this study was to estimate the prevalence and to describe the clinical features and outcome of treatment of work related low back pain (LBP) among Indian IT professionals. This study covered 7385 clients diagnosed with Work Related Musculoskeletal Disorders (WRMSD), with a mean age  $30 \pm 5.92$  years. A single Orthopaedic Surgeon performed the clinical assessment and diagnosis. All the clients received a sequenced, multidisciplinary treatment protocol incorporating manual therapy techniques including trigger point therapy, myofascial release, muscle energy technique, Yoga and exercises. Low back was the second commonest region affected with 46% (Male: 72.3%, Female: 27.7%) of the total population. Among the subjects with LBP, the commonest diagnosis made were Myofascial Pain Syndrome (61%) and Fibromyalgia (17%). 41% of the participants were working for 8-12 hours. The commonest job categories of the participants were Managerial (28%), Software engineers (27%) and Application Engineers (22%). Prolonged sitting with static loading of the lower back was found to be the commonest risk factor. Commonest co morbidities were neck pain, upper back pain, leg and foot pain. Significant reduction in pain or discomfort ( $P < 0.05$ ) was noted among the subjects following a sequenced rehabilitation protocol. Good palpation skills and an accurate diagnosis of the cause of LBP could help in effective management of pain with non invasive methods. The study also revealed the importance of sequenced protocol based therapy in the treatment of LBP.

**Abstract no.: 35338**

**PROXIMAL FEMORAL NAIL ANTI-ROTATION (PFNA) - QUALITY OF REDUCTION & FIXATION : A DISTRICT GENERAL HOSPITAL EXPERIENCE**

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Introduction: Proximal Femoral Nail Anti-rotation (PFNA) is commonly used as an intramedullary fixation method for sub-trochanteric and complex per-trochanteric fractures to achieve anatomical fixation, and achieve early mobilisation. The tip-apex distance is well recorded as a reliable predictor of metalwork cut-out in other methods of fixation such as CHS/DHS, but rates in intramedullary devices are less well documented. The importance of anatomical reduction in fracture union has also been shown but not well documented in intramedullary proximal femoral fixation. Our aim was to analyse union rates, failure of fixation and correlation to the above parameters. Methods: Cases were identified from January 2008 to present, using our online theatre manager. Tip-apex distance was measured using AP radiographs on PACS (electronic radiograph viewing system). Adequacy of reduction was assessed radiologically using alignment of proximal fragment, and apposition of fragments graded from excellent to very poor. Results: 55 patients identified with a Male:Female ratio 1:3.5, a mean age 81 and ASA score 3. 26 standard and 35 long PFNA used. 80% of fractures were subtrochanteric. Only 36 followed up locally. Outcomes: 12/36 united fully, 17/36 various stages of union without metal work failure, 7/36 failed. Average tip-apex distance for failed PFNA 36mm. Other reasons for failure: Not well-reduced, Peri-prosthetic fracture, Distal locking failure. Conclusions: Quality of reduction was not necessarily related to blade cut out from the femoral head, but was related to failure of metalwork and distal locking. The tip-apex distance related cut out seems similar to that previously reported for DHS.

**Abstract no.: 35339**

**RAISED WHITE CELL COUNT IN PATIENTS ADMITTED WITH FRACTURED NECK OF FEMUR : SHOULD THERE BE A DELAY IN SURGERY?**

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Introduction: Patients admitted with fractured neck of femur often have a concurrently raised white cell count. This may be due to various factors including concomitant infection. The aim of this study was to examine the association of a raised white cell count (WCC) at admission with clinically proven concurrent infection & delay in surgery, and wound infection & mortality, to decide if surgery should be delayed. Methods: 100 consecutive patients with fractured neck of femur admitted to our hospital were included in the study. Patients less than 65 years old were excluded from the study. Data was collected prospectively. Results: Our finding showed 51% of patients had raised WCC on admission ranging from 11.7-30.6 (normal 4-11) out of which only 23 % of patients had clinical evidence of infection. None of the patients had clinically proven wound or hip infection post surgery during this study period. 36 % of patients died within 1 year of fracture, out of which 55% had normal WCC and 45 % had raised WCC on admission. Conclusion: Our findings suggest there is no correlation between clinically proven infection and raised white cell count in elderly patients admitted with fractured neck of femur. We also found no association between raised white cell count on admission and post operative wound infection or one year mortality. We recommend that raised white cell count alone not be a criterion for delaying surgery for neck of femur fracture.

**Abstract no.: 35340**

**LOCKING PLATE FOR DISTAL FEMORAL FRACTURES**

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Introduction: Locking plates are an option in distal femoral fractures, particularly in very distal fractures and with osteopenia. We present our case series from a district general hospital reflecting our experience from the last seven years. Method: Retrospective data was collected for Locking Distal Femoral (LISS) plates 2005-2012. Using a standardised proforma, we collected data from the notes and also analysed the serial radiographs for union. Results: There were 56 patients in total (42 female and 14 male), of which 10 were lost to follow -up (2 deaths amongst these). The mean age was 76, with an average ASA grade of nearly 3. The average length of stay was 26 days. Mechanical fall was responsible for a majority of the injuries (48). Two cases were for open fracture and 14 of the patients were treated for peri-prosthetic fracture. Half of the patients had poor pre-morbid mobility, limiting them to a zimmer frame or mobility indoors only. In almost all cases, the operation was performed by consultant or associate specialist. Successful union was achieved in forty-two out of the available forty-six follow -ups (91%), leaving a non-union rate of 9% (four patients). Of the united cases, time to union was within three months for 22 (52%) and the remaining 20 (48%) within six months. Complications included infection in one case, with hardware failure in four. Conclusion: We feel that distal locking femoral plates provide a good option for these difficult fractures.

**Abstract no.: 35342**

**TATTOOING AND ATHROPLASTY: LITERATURE REVIEW & WORDS OF ADVICE**

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The infection of a prosthetic joint is a devastating complication in Orthopaedic surgery with a prevalence of 1-2.5%. Although it is associated with low mortality, it is accompanied by significant morbidity with an equally significant economic burden with multiple further surgeries and long term antibiotics. One of our patients chose to have a tattoo following his Total Knee Replacement. In the process of tattooing, the exogenous pigments penetrate the dermis and come in contact with the blood and lymphatic systems. Tattoos are associated with bacterial and viral infections, both local and systemic. Should there be tattoo-associated soft tissue infection around the prosthetic joint, the prosthesis is compromised with risk of infection. For successful tattooing, the pigments must penetrate the dermis, as any pigments in the five epidermis sub-layers will simply wash/"bleed" out as the tattoo heals and skin shed/renews. The knee capsule is deficient anteriorly, and this further predisposes to risk of infection. Post-operatively, the subdermal layers will have unpredictable healing, and further increase infection risk, particularly where they have healed incompletely. Given the above, the authors would discourage the practice of tattooing when a prosthetic joint is in situ, particularly so close to the operative field. This case discusses tattoo after total knee replacement but the same would be true after any arthroplasty, in particular those where the implant is more superficial.



**Abstract no.: 35344**

**USE OF ILIZAROV FIXATOR FOR GRADE III B OPEN OLECRANON FRACTURE: A CASE REPORT AND SURGICAL TECHNIQUE**

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Introduction: External fixator application can be difficult for olecranon fractures in presence of large degloving injuries. We describe use of simple Ilizarov ring fixator construct for grade IIIB open olecranon fracture management. Case & Surgical Technique: A 45-year-old female with Grade III B open comminuted olecranon fracture(30\*15cm degloving area) and ulnar nerve palsy was treated with a novel ring fixator construct. Two cut-end olive wires were passed from the proximal olecranon across the fracture site in intramedullary fashion exiting dorsally at mid-ulnar level through healthy skin and were attached to an Ilizarov half ring secured by perpendicular wires. The olive wires were tensioned, achieving compression and stability. ROM exercises could be started quickly as the elbow was not spanned. Wound healed after skin grafting and at one-year follow-up the patient has good functional results (PREE 7, DASH 9.48), elbow ROM 100-130°, 75° pronation and 85° supination. CT scan showed union of coronoid fragment and a firm fibrous non-union of olecranon fragment with well-maintained congruency. The patient returned to pre-injury occupational activities and had no pain. Discussion: Internal fixation in most cases may be precluded by the soft tissue trauma and risk of infection. Secondly, small proximal fragment precludes a stable external fixation. In this technique, the hardware is kept away from the open wound allowing better wound inspection and care. The intramedullary olive wires provide compression and stability, and thus allow early ROM. This method is as a useful tool in the armamentarium for high grade open olecranon fracture management.

**Abstract no.: 35347**

**RECENT PATELLA TENDON RUPTURE : SURGICAL REPAIR PROTECTED BY WIRE. REVIEW OF 20 CASES**

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Publications on patella tendon rupture included fracture of the inferior pole of the patella. In this serie, only rupture inside the tendon were evaluated and treated by cerclage wire technique. Material and methods. 21 knees were evaluated at 11.1 years (2-14) follow-up. The patella tendon ruptured at the inferior pole of the patella in twenty cases without any osseous fragment. The tendon was repaired using 3 sutures passed through 3 horizontal drill holes in the tip of the patella. The paratendon and the retinacular tears were sutured with resorbable suture. The repair was protected with a 1,2 mm cerclage wire extending from the mid point of the patella to 1 cm posterior to the tibial tuberosity. After surgery a splint was applied for 3 weeks. Mobility and full weight bearing started postoperatively. Results. The results were good or very good in 17 cases. Residual pain was noted in 2 cases, 4 manipulations under general anesthesia were necessary and led to 3 good results. The average flexion was 139.75 without flossum and the Lysholm score was 98. One iterative rupture occurred 3,5 years later in one of our patients who played recreative soccer. There were no septic complications. The cerclage wire was removed in 19 cases and was broken in 18 cases. Discussion, conclusion. Protection with a cerclage wire is necessary in order to avoid elongation of the tendon Early physiotherapy allows good flexion. Care should be taken to avoid patella baja by tensioning the wire with a flexion between 60-90.

**Abstract no.: 35355**

**ACHILLES TENDON RUPTURE – DO WE NEED LONG INCISION FOR TRADITIONAL SUTURE?**

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The length of incision for traditional Achilles tendon (AT) suture is about 10-12 cm long for open suturing. We performed our own biomechanical study investigating polycyclic stability of sutures. The results of the study was reported at the SICOT 2011 XXV Triennial World Congress, Prague. The results of that study showed that probably the best suture for AT rupture is Krackow-4 loops with two filaments. Theoretically suture with 4 loops in each stump could be performed through incision 5-7 cm long. 25 patients with acute AT rupture were sutured through incision 5-7 cm long, also we performed suturing through mini-incision in two cases with chronic AT rupture. In all 27 cases we had no difficulties during suturing. After skin incision medial to AT we opened fascia, paratenon end endotenon. Then suturing of each stumps were done moving foot from flexion to extension to facilitate exposure of the stump. After approximating stumps and knotting the place of rupture was covered by endotenon in all cases. After surgery we used weight-bearing as tolerated in brace in equinus for 4 weeks followed by gradually decreasing of equinus to plantigrade position. Then progressive rehab program was performed.

**Abstract no.: 35363**

**PREVALENCE OF IN HOSPITAL MORTALITY FOLLOWING ACUTE ORTHOPAEDIC TRAUMA ADMISSIONS IN A REGIONAL TERTIARY REFERRAL CENTRE**

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**Purpose:** To analyse the incidence and causes of mortality following acute orthopaedic trauma admissions at a regional tertiary referral centre. **Patients and methods:** Over a 4 year period (2006-2010) all acute trauma orthopaedic admissions were documented and entered in a computerised database. Mortality was extracted from the hospital records, death certificates and post-mortem examination. Associated co-morbidities were also recorded and correlated to non-survivors. **Results:** There were 16,962 patients (mean age 82.6years (18-102)). There were 419 non-survivors (2.47% mortality rate) out of which 64.2% were females (M: F-150:269). Timing of death: 69% within 30days, 19% in 60 days and 12% more than 60days. The most common primary diagnosis of the non-survivors was hip fracture (65.3%) followed by femoral shaft fracture (10.9%). The average number of co-morbidities was 5.9 per patient (0-12). The mean hospital-stay was 26.3 days (0-125). In total 320 patients (76.4%) underwent an operative intervention prior to their death with 5 patients dying on the same day. The most common cause of recorded death in the medical certificate was the respiratory system (44.1%, predominantly pneumonia), followed by the cardiovascular system (23.8%, predominantly myocardial infarction). In patients below 65 years of age the most common primary cause of mortality was cancer and multi organ failure. **Conclusion:** The overall mortality rate following acute orthopaedic trauma admissions was 2.47%. A high number of co morbidities and female gender predominance was observed in the non-survivors. Respiratory insufficiency and myocardial infarction were noted to be the most common causes of in hospital mortality

**Abstract no.: 35370**

**RADIAL HEAD AND NECK FRACTURES – INCIDENCE AND OUTCOME ANALYSIS AT A LEVEL I TRAUMA CENTER**

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Introduction: We evaluated the results of conservative and surgical treatment of radial head fractures in children and adults in a series of 1047 patients. Methods: This study reviewed the clinical records and trauma database of this level I Trauma Center and identified all patients with fractures of the radial head and neck who were admitted between 2000 and 2010. An analysis of clinical records revealed 1047 patients suffering from fractures of the radial head or neck classified according to Mason. For clinical examination, range of motion, local pain and overall outcome were assessed. Results: The incidence of one-sided fractures was 99.2% and for simultaneous bilateral fractures 0.8%. Non-operative treatment was performed in 90.4% (n=947) of the cases, surgery in 9.6% (n=100). Bony union was achieved in 99.8% (n=1045) patients. Full satisfaction was achieved in 59% (n=615) of the patients. Conclusion: Closed reduction is the primary goal of treatment. A gender related significant difference (p=0.035) in Mason type distribution was observed in our study population. Type III fractures were more prominent in male patients (n=20, 71.4%) versus Type IV fractures in female patients (n=8, 72.7%). Different forms of conservative treatment did not influence the pain at the end of follow-up. 75% of patients treated with surgery reported no pain at the end of follow-up compared to 57% of patients, treated conservatively (p=0.03).

**Abstract no.: 35372**

**MONTEGGIA INJURIES – RESULTS AT A LEVEL I HOSPITAL**

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Introduction: Monteggia lesion is a rare injury of forearm fractures, defined as a fracture of the ulna associated with radio-capitellar dislocation and often associated with persistent radial head dislocation, forearm deformity, elbow stiffness and nerve palsies. The purpose of the present study was to examine the results of conservative and surgical treatment. Methods: In a 10-year period, 47 non-selected trauma patients were included in our retrospective study. Data were obtained from our computerized patient records data base. We collected data on all victims admitted to the hospital with diagnosed Monteggia injuries, but only patients with complete data and follow up have been included into the present study. Results: The mean age was 47.1 years (range 2.6 to 86.6), 19 (45.2%) were males and 23 (54.8%) were females, 33 (78.6%) patients were adults, 9 (21.46%) were children. In our study population a total of 7 (16.6%) Monteggia fractures type I, 9 (21.4%) type II, 1 (2.4%) type III and 4 (9.3%) type IV have been observed according to the Bado classification. Ten (23.8%) Monteggia Type I equivalents and 11 (26.2%) Type II equivalents have been observed in the adult group. A total of four fractures (9.5%) were open according to Gustilo classification: 2 (4.76%) GI, 1 (2.38%) GII, and 1 (2.38%) GIII. Conclusions: Closed reduction is the primary goal of treatment in paediatric patients. Surgical treatment becomes necessary if conservative treatment fails or in adult patients. Further clinical trials need to be conducted to prove our findings.

**Abstract no.: 35380**

**PATIENT FACTORS INFLUENCING THICKNESS OF HAMSTRING GRAFT HARVESTED FOR ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION**

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Introduction: There is a paucity of literature regarding the influence of patient factors on hamstring graft obtained in ACL reconstruction. This study was undertaken to assess the influence of height, weight, body mass index and regular sports activity on the graft diameter obtained at ACL reconstruction surgery within the Indian population. We hypothesize that such factors do influence graft thickness. Methods: Data from 84 patients who had undergone ACL reconstruction by the same team of surgeon using quadruple hamstring grafts were analyzed. The grafts used were Semitendinosus and Gracilis. The height, weight, BMI and regular sports activities prior to surgery were pitted against graft diameter and the need for Semitendinosus tendon alone v/s Semitendinosus and Gracilis tendon obtained during surgery. Results: There were 84 patients with majority falling between 20 to 30 years old. A statistically significant positive correlation, between the height of the patient and graft diameter ( $p < 0.05$ ), history of regular sports activities and graft diameter ( $p < 0.05$ ) and height of the patient combined with history of regular sports activity and graft diameter ( $p < 0.01$ ) was noted. Weight of the patient and body mass index did not yield any statistically significant correlation ( $p > 0.05$ ). Conclusion: Although body mass index and weight did not significantly correlate, patients' height and history of regular sports activities may be a good predictive variable in predicting the graft diameter, also the need for Semitendinosus and Gracilis graft v/s Semitendinosus graft alone in ACL reconstruction could also be established, thereby providing very practical and useful pre-operative information.

**Abstract no.: 35384**

**GIANT CELL TUMOUR OF C2 : MANAGEMENT OF A RARE CASE WITH 6 YRS FOLLOW UP.**

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Giant cell tumour (GCT) or Osteoclastoma is a benign, locally aggressive tumour with a tendency to recur. Giant cell tumours typically occur in the epiphysis of long bones. Involvement of the axial skeleton is very rare and majority of these, if they occur, are seen in the sacrum. The authors present a case of a 19 yr old female who presented with a pathological fracture of the C2 odontoid process and atlanto-axial dislocation without any significant neurological deficit. An MRI confirmed a fracture through a large expansile lesion of C2 and offered the differentials of GCT and chordoma. The patient was operated in a two stage manner with posterior instrumentation and stabilization followed by tumour resection by anterior trans-oral approach. An intra-operative frozen section was performed and was conclusive of GCT. DSA aided tumour embolization was also performed prior to second surgery. The residual tumour cavity was packed with autologous cortico-cancellous bone grafts. Post-operatively a SOMI brace was applied for 2 months. The patient was followed up regularly at 3, 6 & 12 months duration followed by annual follow ups. Four yrs post surgery a CT scan was performed which showed uptake of the bone graft and formation of a C1-C2 fusion mass. At the latest follow up at 6 years, there was no radiological or clinical evidence of tumour recurrence with the patient having good functional outcome without any neurological deficit throughout the course of the treatment and follow up.



**Abstract no.: 35386**

**PATELLAR NONDISPLACED TRANSVERSE FRACTURE IN A CHILD**

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Background: Fractures of the patella are rare in children, as the patella is largely cartilaginous and has great mobility. Our case is a transverse fracture of patella is rarer than other patellar fractures. Diagnosis is the main problem for patellar fracture. Although diagnosis can be suggested by clinical and radiographic evaluation, this fracture may not be diagnosed, particularly if there is a large hemarthrosis on knee joint or if x-ray studies cannot clearly show the bone fragment distally withdrawn. Besides because of later ossification, child patella is mostly cartilaginous so x-ray may not show fragments. Case Presentation: The case was 7 years old boy. Patient fall onto his knees two weeks before to refer us. He said that he had minimal effusion and pain on knee after fall down and he was continuing to walking and other exercises. On physical examination there was minimal effusion and pain on patella. The passive and active range of motion was full and painful. We seen a suspicious fracture line on X-ray. We took MRI and there was a transverse fracture. We limit the range of motion of knee with a immobiliser during two weeks. Conclusion: After a knee trauma in children a x-ray should be taken. In clinical suspicion even so there is no finding on x-ray, we should take advanced investigation like MRI.

**Abstract no.: 35387**

**AN UNUSUAL PRESENTATION OF EUMYCETOMA OF FOOT: A RARE CASE REPORT**

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Eumycetoma is a chronic fungal infection of skin and subcutaneous tissue characterised by tumefaction, sinus tracts and grain extrusion. In 40% of cases infection caused by true fungi where it is known as eumycetoma and in 60% of cases by bacteria is where it is known as actinomycetoma. Foot is involved in 70% of all eumycetoma cases. The patient presented here had a single subcutaneous lesion on left foot with normal overlying skin. We performed excision and histopathological examination. Presence of fungal hyphae on histopathological examination confirmed the diagnosis of eumycetoma. We started antifungal therapy with "Ketoconazole" for six weeks. Patient was asymptomatic and there was no recurrence at two year follow up. The case reported here presented with only with cystic swelling under skin and overlying skin was normal. As literature reports manifestations like tumefaction, bluish skin and sinus tracts were absent and hence patient planned for excision biopsy for diagnosis. Ganglion cyst and benign tumour was considered for differential diagnosis because of similar clinical presentation. Our case is rare report particularly for unusual clinical presentation. Only after histological examination correct diagnosis was made. To our knowledge such atypical presentation has not been reported earlier in literature. We stress on necessity of a clinical suspicion of fungal infection as differential diagnosis when patient is from tropical region and presents with cystic lesion and recommend excision biopsy and histopathological diagnosis.

**Abstract no.: 35388**

**IL-12 AND TGF- $\beta$  RESPONSE TO ANTI-TUBERCULAR CHEMOTHERAPY  
IN OSTEOARTICULAR TUBERCULOSIS**

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Introduction : Osteoarticular tuberculosis continues to be a major health problem despite availability of effective chemotherapy. The end point of treatment remains controversial. Patient and methods : Thirty five patients of 6 - 48 years age (mean 20.6years) diagnosed as osteoarticular tuberculosis in knee (13),elbow (7),ankle (4),foot (2),hand (4),ilium (2) and one each in humerus, distal ulna, femur were enrolled for DOTS anti tubercular chemotherapy for 6 months. Clinico-radiological features, erythrocytic sedimentation rate (ESR) and IL-12 and TGF- $\beta$  serum levels were evaluated before the start and after completion of treatment at 6 months. Results : Pain, fever, lymphadenopathy, muscle spasm and cold abscess resolved in all patients at the end of treatment. Radiologically the lesions had shown marked improvement by focal sclerosis and mineralisation. The mean ESR levels had settled down to normal. The mean levels of IL-12 at initiation of treatment were 249.88 +/- 121.89 pg/ml while at 6 month were 154.05 +/- 59.35 pg/ml which were significantly low ( $P < 0.001$ ). The mean levels of TGF- $\beta$  at initiation of treatment were 172.75 +/- 157.25 pg/ml while at 6 month were 425.86 +/- 243.23 pg/ml which were significantly raised ( $P < 0.001$ ). Conclusion : This study demonstrated clinico-radiological and biochemical response to DOTS anti tubercular chemotherapy. IL-12 and TGF- $\beta$  may serve as an indicator of clinical recovery and a cue for cessation of therapy.

**Abstract no.: 35391**

**UNICOMPARTMENT KNEE ARTHROPLASTY FOR TRICOMPARTMENT KNEE OSTEOARTHRITIS IN OCTOGENARIANS AND NONAGENERIANS. MID-TERM RESULTS IN 37 CASES**

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**Introduction:** Unicompartmental knee arthroplasty (UKA) has specific indications, producing excellent results if performed within them. It is considered a temporizing procedure in select active young patients with advanced unicompartmental osteoarthritis (UCOA). A possible alternative indication is the very elderly patient with tricompartmental osteoarthritis (TCOA). We performed UKA in a series of 45 octogenarians with TCOA (predominant medial UCOA) and analyzed the results. **Methods:** 45 octogenarian patients with TCOA (predominant medial UCOA) underwent UKA (19 bilateral) from January 2002 to January 2013, with standard pre-operative work-up, surgical approach, procedure, implants and post-operative protocols. Clinico-radiological assessment was done at 3 monthly intervals for the first year, then yearly till last follow-up (average, 84 months, range 20 – 140 months). Results were evaluated clinically using the Knee Society scores (KSS), satisfaction index (using the visual analogue scale) and radiologically (for loosening, subsidence, lysis or implant wear). Re-surgery for any reason was deemed failure. **Results:** Six patients were excluded from the final analysis due to death following unrelated medical illnesses and loss to follow up. Barring two failures, all remaining patients were pain-free and performing well at final follow-up. Indications for re-surgery were: medial femoral condyle fracture in one, and recurrent pain following progression of arthritis in other compartments in one patient. We achieved 96.4% implant survival rates and 94.9% good or excellent outcomes in our series. **Discussion:** Due to lower demands, early rehabilitation, less morbidity and relative short life-expectancy, UKA can successfully manage TCOA in the octogenarian.

**Abstract no.: 35398**

**EARLY ORIF IN BICONDYLAR TIBIAL FRACTURES (SCHATZKER TYPE V AND VI) IS SAFE: PERI- AND POST-OPERATIVE RESULTS IN 23 FRACTURES**

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Introduction: Bicondylar tibial fractures (Schatzker types V & VI) are associated with high local morbidity, more so if surgical fixation is delayed. Open reduction and internal fixation (ORIF) is generally delayed till the swelling has subsided to circumvent compartment syndrome and prevent wound healing complications. We retrospectively analyzed the results of early ORIF (within 48 hours) of 23 such fractures in 22 patients. Methods: Patients (mean age, 38 years) with type V and VI Schatzker tibial condyle fractures, presenting an average 20 hours after injury, underwent early ORIF (bicondylar plating with/without bone grafting). Patients' clinico-radiological parameters at 3 months, 6 months, and yearly were analyzed. Results: All 23 fractures (in 22 patients) united at a mean of 4.5mths (range, 3 – 6mths). There was no instance of compartment syndrome or wound dehiscence, though 2 patients had superficial infection, which settled with antibiotics. At final (average 24 months) follow-up, all fractures had united, with average range of motion of 100° of flexion, & average residual deformity of 3° valgus (range, 8° varus to 7° valgus). Discussion: Wound dehiscence, high risk of infection and compartment syndrome, and delayed/non-union are all known complications in Schatzker type V and VI bicondylar tibial fractures, leading to delayed ORIF. Our results indicate that early ORIF (within 48 hours of the injury) may actually decompress the compartment, permit judicious use of bone graft (needed in many cases), and permit early rehabilitation, without increasing morbidity.

**Abstract no.: 35399**

**A RARE CASE OF VERTICALLY DISLOCATED PATELLA INCARCERATED INTO FEMORAL CONDYLE FRACTURE**

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Intra-articular dislocations of patella are rare which involve rotation of patella around horizontal and vertical axis. These rotational dislocations of patella are difficult to reduce by closed method. These dislocations can have associated osteochondral injury and retinacular injury. We report a 20 year old man presented with swelling and pain in right knee following motor cycle accident. Radiological evaluation using computed tomography revealed a patellar dislocation with lateral condyle fracture of femur. Patella was rotated around the vertical axis and incarcerated into femoral condyle fracture site. A lateral parapatellar arthrotomy was performed to facilitate atraumatic repositioning of the patella and to better visualize the fracture of the lateral femoral condyle. The tear in the MPFL and medial retinaculum were repaired with heavy non-absorbable sutures (5 Ethibond) followed by repair of the quadriceps tendon. Postoperatively the knee was immobilised for three weeks followed by supervised active range of motion exercises. At eight weeks Patient was allowed partial weight bearing walking and allowed to bear full weight after radiological union. At two year follow up, the patient is pain free, clinically normal knee function. The screws were removed at patient's request and his KOOS score was 93.5 and IKDC score was 93.1. This is very rare injury and first of its kind to be reported. The difficulty in diagnosis, mechanism of injury and management has been discussed. We feel closed reduction of such injury is contraindicated and recommend open reduction. Reporting such a rare case will definitely add valuable information to literature.

**Abstract no.: 35402**

**BILATERAL CLAVICULAR FRACTURE IN A NEWBORN**

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**Background:** The fracture of clavicle is the most frequently observed bone fracture as birth trauma and it is usually unilateral. It is seen following shoulder dystocia deliveries or breech presentation of macrosomic newborns. However the majority of clavicular fractures occur in normal newborns following normal labor and delivery. Later report show that clavicular fracture is generally considered an unpredictable and unavoidable complication of normal birth.**Case Presentation:** We report a term newborn with bilateral clavicle fracture without brachial plexus palsy due to birth trauma. Bilateral moro reflex was absent whereas grasping reflex was normal. There was crepitation on both clavacula with palpation. Patient was cried with passive motion of both arm and active motion was limited. Chest X-rays confirmed bilateral fracture of clavicles. Patient recovered without any sequel approximately after 4 weeks.**Conclusion:** Bilateral clavicular fracture should be considered in any neonate with bilateral absent Moro reflexes.

**Abstract no.: 35403**

**ARTHROSCOPICALLY ASSISTED FIXATION OF AVULSION FRACTURES OF ANTERIOR CRUCIATE LIGAMENT (ACL) IN ADOLESCENCE**

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**PURPOSE:** The purpose of this study was to evaluate functional outcome of displaced ACL avulsion fractures in adolescence patients treated with arthroscopic reduction and internal fixation with stainless steel (SS) wire loop. **TYPE OF STUDY:** Prospective case series. **METHODS:** Prospective study analyzed 14 male adolescent patients (age of 11-17 years with mean age of 15.5 yrs) who underwent arthroscopic reduction and stainless steel (SS) wire loop fixation of ACL avulsion fractures using Meyers and McKeever classification 6 (Type II) 42.85%, 8 (Type III) 57.14%. **RESULTS:** Results were analyzed clinically and radio logically. The mean follow-up period was 30.6 months (range – 24 to 38 months). All patients achieved union within 3 months. Free range of motion achieved without pain or growth disturbances in all patients. **CONCLUSIONS:** Treating ACL avulsion fracture by arthroscopic SS wire loop fixation in adolescence can restore ACL length and good stabilization of fragment can be achieved. In this procedure there will be no damage to knee joint cartilage and no growth disturbances. This procedure also promotes early motion minimizing morbidity. **KEYWORDS :** Anterior cruciate ligament avulsion fracture \_ SS wire loop fixation\_ Early motion.



**Abstract no.: 35404**

**BIOBALL UNIVERSAL MODULAR NECK ADAPTER AS A SALVAGE FOR FAILED REVISION TOTAL HIP ARTHROPLASTY**

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The management of a recurrent dislocation of total hip arthroplasty is often a challenging task. Re-revision of such a total hip prosthesis may not be easy as the removal of a well fixed fully coated stem is extremely difficult. We managed to salvage three revision hip cases in which the fully coated stem had subsided, by using a bioball universal neck adapter, without changing the femoral stem or acetabular cup. The use of a fully coated stem is an attractive option for revision Total Hip Arthroplasty (THA), considering the scratch fit obtained by it in the diaphysis and later incorporation by bony in growth . However, in the early post operative period this prosthesis may sometime subside, before adequate bone incorporation has taken place. This subsidence of the femoral stem may be followed by later bone incorporation with the prosthesis in a sunken and/or rotated position. Too short a neck or incorrect version of the stem may lead to recurrent dislocations and failure of the revision THA. Re-revision of such prosthesis may not be easy as the removal of a well fixed stem is extremely difficult & any vigorous attempt at its removal can lead to severe femoral shaft fracture. We managed to salvage 3 hips with subsidence of extensively coated femoral stem (Solution, Depuy) by using a modular neck extension called the bio ball universal neck adapter (Merete, Germany). This alleviated the need to revise any component and the limb length and tissue tensioning were restored to normal.

**Abstract no.: 35417**

**INTRA-OPERATIVE RADIATION INCREASES WHEN TRAINEE ORTHOPAEDIC SURGEONS ARE ALLOWED TO OPERATE ON ANKLE FRACTURES**

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**Background:** Unstable ankle fractures are commonly treated with operative fixation. Isolated lateral malleolus fractures (Weber B) are often operated by orthopaedic trainees. Operative fixation of these fractures included in the index of procedures based assessment (PBA) of Intercollegiate Surgical Curriculum Programme (ISCP). Orthopaedic trainees are expected to be competent in this procedure by the end of their training. Fluoroscopic guidance is essential for adequate reduction and safe fixation of these fractures. **Aims:** It is currently unknown if patients are exposed to excess radiation when they are operated by trainees compared to consultant surgeons. It is a common perception that trainees take more time to fix these fractures compared to trained consultants, thereby exposing patients to untoward effects of prolonged tourniquet time. **Method:** A retrospective review of fifty patients undergoing operative fixation of Weber B Lateral malleolus fractures were undertaken. Twenty five patients were operated by trained orthopaedic consultants and the remaining (n=25) by orthopaedic trainees. The tourniquet time and the intra-operative radiation dose during the fluoroscope were recorded. **Results:** Patients operated by trainees were exposed to significantly higher dose of intra-operative radiation (median 6.5cGycm<sup>2</sup> vs. 46.2cGycm<sup>2</sup>; interquartile range 0.87-15.8 vs 8.37-140.3; p=0.003). However, there was no statistical difference in the duration of application of the tourniquet in between the two groups (median, 59 minutes vs 79 minutes; interquartile range, 45-95 vs 69-102; p=0.12). **Discussion/Conclusion:** This is the first study to indicate that patients are at risk of higher radiation exposure when operated by orthopaedic trainees whilst the time taken to fix Weber B ankle fractures are almost similar to those undergoing surgery by a consultant grade surgeon.

**Abstract no.: 35418**

**BIOMECHANICAL CHANGES ON THE LOWER LIMB IN PATIENTS WITH HALLUX VALGUS DURING WALKING**

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**OBJECTIVE:** The study investigated the influence of hallux valgus deformity on the biomechanics of the lower limb joints during walking. **METHODS:** Eleven patients with bilateral HV and 11 healthy female controls participated in the current study. Their kinematic and kinetic data were measured with a 7-camera motion analysis system and two force plates. Joint angles and moments at contralateral heel strike (CHS), contralateral toe-off (CTO), ipsilateral toe-off (TO) and their peak values, as well as the distance between the center of pressure (COP) and 1st metatarsal head as the COP passed the metatarsophalangeal joint (MPJ) line were analyzed using independent t-test with a significance level of 0.05. **RESULTS:** Compared with the controls, the HV group had smaller range of motion (ROM) at the knee in the frontal and transverse planes during stance phase, and at the hip in the transverse plane. They also had smaller knee abduction at TO and toe-out angle during the gait cycle. Greater knee abductor moments during stance phase and the distances between COP and 1st metatarsal head were also found. **CONCLUSIONS:** HV group were found to adopt compensatory strategies to unload the hallux and the 1st metatarsophalangeal joint. They successfully shifted the load away from the hallux and 1st metatarsophalangeal joint via decreasing the toe-out angle and the ROM of the hip in the transverse plane. However, this strategy increased the knee abductor moments, indicating that although HV is a forefoot deformity, it may increase the load at the knee as a result of compensation.

**Abstract no.: 35424**

**A SIX YEAR REVIEW OF MINIMALLY INVASIVE DIRECT POSTERIOR APPROACH FOR TOTAL HIP REPLACEMENT**

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The aim of minimally invasive hip replacement is to reduce soft tissue trauma and thereby operative blood loss, postoperative pain and hospitalisation time while speeding postoperative recovery and improving the cosmetic appearance of the surgical scar. So thus the principle must be applied to skin, muscles, joint capsules and to the nerves and vessels contained therein. Among minimally invasive approaches one should use the most familiar technique, we use the posterior approach. In this paper we present our data on minimally invasive direct posterior approach for total hip arthroplasty, a six year retrospective analysis of 350 cases with the shortest follow up of one year. The technique withstood the test of time, lives up to expectations, but still needs long term follow ups.

**Abstract no.: 35425**

**THE OSTEOCHONDROSIS OF SUPERIOR POLE OF PATELLA: A CASE REPORT**

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The osteochondroses are a group of disease which affect the epiphyses, apophyses and epiphysoid bone of children or adolescents. Radiographically they are characterized by bone sclerosis, fragmentation collaps and reossification in affected bone. Osteochondroses are named according to ossification center where are arise from. Patella superior pole osteochondrosis is a rare situation that are reported in limited number of studies. We present a conventional radiography of a 11 years old boy which has a osteochondrosis like view at supeior pole of right patella and which has no trauma history.

**Abstract no.: 35428**

**CARPAL TUNNEL RELEASE BY MINIMALLY INVASIVE APPROACH: A PROSPECTIVE STUDY**

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Carpal Tunnel Syndrome (CTS) is the most common entrapment neuropathy and has a very limiting effect on the quality of life. In many patients it causes difficulty in doing even Activities of Daily Living. With most of the neurosurgeons, plastic surgeons, and orthopaedic surgeons treating this problem surgically, various approaches have been used, from classical long exposure (as in open techniques), to endoscopic aided, with a gamut of special instruments being used by surgeons all over the world. Limited open minimally invasive approach is an emerging technique for Carpal tunnel release which combines the simplicity and safety of traditional open technique, with the benefits of less tissue trauma and reduced post-operative morbidity as in endoscopic technique. We prospectively evaluated our experience in 56 limbs of patients managed surgically with limited open minimally invasive carpal tunnel release, from December'11 to November'12 at Indian Spinal Injuries Centre, New Delhi, India. Patient status was evaluated using Boston Carpal Tunnel questionnaire, administered pre-operatively & at 2 weeks & 6 weeks postoperatively which showed an improvement in Symptoms Severity Score (SSS) from  $2.75 \pm 0.22$  (standard error 0.030) to  $1.52 \pm 0.10$  (standard error 0.013) at 2 weeks &  $1.21 \pm 0.12$  (standard error 0.016) at 6 weeks, and Functional Status Score (FSS) from  $2.50 \pm 0.27$  (standard error 0.028) to  $1.61 \pm 0.16$  (standard error 0.013) at 2 weeks &  $1.21 \pm 0.13$  (standard error 0.17) at 6 weeks. According to our experience, the mini incision technique provided a good exposure, and an adequate release, with very satisfying results.

**Abstract no.: 35434**

**MIPO TECHNIQUE & FUNCTIONAL OUTCOME IN PROXIMAL TIBIA FRACTURES. A REVIEW OF 20 CASES**

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Proximal Tibia fractures account for 1% of all fractures occurring due to axial loading with valgus or varus forces such as fall from height or motor vehicle accidents. These fractures are difficult to treat due to involvement of articular surfaces, the frequent comminution & precarious soft tissue conditions. The key purpose of minimally invasive surgery is to preserve the biology of fracture site by preserving the vascularity. ORIF necessitates stripping the bone of vital vasculature which gives rise to well-known complications due to devascularisation. We present our treatment strategy in 20 patients with proximal Tibia fractures (extra-articular & selective intra-articular) using MIPO, angle stable polyaxial plates, screws and autologous bone graft or augmentation with other osteoconductive material when necessary. Internal fixation with locking plates following the principles of MIPO provides satisfactory fracture reduction with good results regarding the midterm clinical outcome.

**Abstract no.: 35443**

**DOC, WHEN CAN I FLY AFTER MY HIP REPLACEMENT?**

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**INTRODUCTION:** Air travel following surgery is increasing. There is evidence to show an increased risk of thrombo-embolism following long haul flights but none to show that there is a further increase in the risk if you travel immediately after surgery NHS and Civil Aviation Authority provide guidance for these patients, however these are limited and not evidence based. **OBJECTIVES:** To seek evidence for the current guidance. Conduct a survey of how our peers are interpreting the current guidance and achieve consensus with regards to the advice to be given to patients coming to our tertiary referral hospital. **METHODS:** Review of literature using MEDLINE/Pubmed, the Cochrane database of systematic reviews and Google scholar. Survey of 40 Consultants and Senior Registrars. **RESULTS:** 625 articles identified; 8 were deemed loosely relevant to the aim of the study – none from Orthopaedics Most common advice from the survey - 6 weeks following THR/TKR for short haul flights (<3hr), 3 months for long haul flights, 6 weeks following knee arthroscopy, only one consultant stated he was aware of evidence for this guidance. **CONCLUSION:** Research into the link between venous thrombo-embolism and long haul air travel is extensive but largely inconclusive. No difference in incidence of venous thrombo-embolism between economy class and business class travellers. No evidence to suggest that the postoperative risk of DVT is increased by air travel. Blanket guidance for all patients should be avoided and individual patient assessed for their thrombo-embolic risk and individual advice offered.



**Abstract no.: 35446**

**SCREW ELASTIC INTRAMEDULLARY NAIL FOR THE MANAGEMENT OF ADULT FOREARM FRACTURES**

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The purpose of this paper is to evaluate the results of screw elastic intramedullary nail for the treatment of adult diaphyseal fractures of both forearm bones, which effectively addresses the problems associated with the conventional nailing systems for the forearm fractures. Seventy-six adults with forearm fractures (radius and ulna or isolated fracture of the single bone) were retrospectively evaluated. Fifty males and 26 females with the mean age of 38 years (range, 18-70 years) underwent closed reduction and screw intramedullary nail fixation. Ten patients required limited open reduction. The fractures were classified according to the AO/OTA system. The average followup was 12 months (range, 6 to 18 months). The mean surgical time was 45 minutes (35 to 65 minutes). The meantime to union was 14 weeks (10-21 weeks). The results were graded as excellent in 50, good in 18 patients, and acceptable in eight patients, using the criteria of Grace and Eversman. We had superficial infection in three cases, one case of delayed infection, painful bursa in two cases, delayed union in two cases, malunion with dislocation of the DRUJ in two cases. Closed reduction and internal fixation of forearm fractures by screw intramedullary nails re-establishes the near normal relationship of the fractured fragments. Screw intramedullary nail effectively controls both rotatory forces and the migration of the nail.

**Abstract no.: 35447**

**BIOLOGICAL RECONSTRUCTION AFTER RESECTION OF TUMOUR  
AROUND KNEE WITH ADJUVANT NAILING**

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Giant cell tumours (GCTs) of bone are aggressive benign tumours. Wide resection is reserved for a small subset of patients with biologically more aggressive, recurrent and extensive tumours. As the patients affected with GCT are young or middle-aged adults with a normal life expectancy, arthrodesis is an attractive option for reconstruction in these patients. Twenty-six patients of mean age 33.1 years with Campanacci Grade III giant cell tumours around the knee (15 distal femoral and 11 proximal tibial) were treated with wide resection and arthrodesis from January 1996 through January 2011. Arthrodesis was performed using nailing with free fibular graft (n = 18), IM nail with turnoplasty (n = 8) combined with autogenous bone grafts. The fusion after the first surgery was achieved in 23 patients, 2 patients required additional surgery. Local recurrence was seen in one patient who required amputation. Wide resection and arthrodesis in aggressive GCTs around the knee is a good treatment option. IM nail combined with fibular graft and turnoplasty seems to be a good method of arthrodesis with high fusion rates, least shortening and early rehabilitation.

**Abstract no.: 35454**

**THERAPEUTIC CONSIDERATIONS FOR PLANTAR FASCIITIS – A  
RETROSPECTIVE REVIEW**

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Objective: A retrospective study to look into the results of non-operative and operative methods of treatment. Method: We undertook a retrospective study to look into the efficacy of ultrasound guided steroid injection and results of surgical partial plantar fasciotomy in those with persistent, residual symptoms who failed to respond to non-operative means. Over a period of 20 months between January 2009 and August 2010 we reviewed 53 patients (56 feet) with duration of symptoms of heel pain from 4 months to 2 years (mean 9.3 months) referred from various sources. All patients followed a standard protocol of clinical history, clinical assessment, weight measurements and were subjected to our treatment protocol of analgesia, soft heel pads, physiotherapy, night splints and ultrasound guided steroid injection for both diagnostic and therapeutic reasons. Patients who had residual, persistent symptoms had undergone surgical treatment. Results: 43(76.7%) patients were in the non-operative group of which 39 / 56 (69.6%) were asymptomatic, 4/56(7.1%) had good relief at the end of 3 months and were discharged. 13(22.3%) patients underwent operative release of which 6 / 13 (46.1%) were asymptomatic, 5 / 13 (38.46%) had good relief and 2 / 13 (15.38%) with persisting symptoms. Conclusion: Good results were obtained with non-operative treatment in 76.7% and with operative treatment in 84%. Ultrasound guided injections provide good pain relief. No fascial tears were identified after injections. One superficial infection following USD injection was encountered.

**Abstract no.: 35456**

**CORRECTING FIXED VARUS DEFORMITY WITH FLEXION CONTRACTURE DURING TOTAL KNEE ARTHROPLASTY: THE "INSIDE-OUT" TECHNIQUE**

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Our hypothesis was that this technique effectively corrects severe knee varus and flexion deformity with a reduced risk of complications. Thirty-one consecutive patients (thirty-four knees) with a severe fixed varus and flexion deformity (varus alignment of  $\geq 15^\circ$  and flexion contracture of  $\geq 5^\circ$ ) underwent total knee arthroplasty with use of the inside-out technique between October 2006 and December 2009. Physical examination, radiographs, and multiple outcome instruments were used to evaluate the results. The mean duration of follow-up was  $3.1 \pm 1.1$  years (range, 1.7 to 4.9 years). There were no cases of hematoma formation, excessive release of the medial collateral ligament, or acute or delayed instability. A semi-constrained TC3 implant was used in two cases. The mean preoperative coronal alignment was  $21.1^\circ \pm 4^\circ$  of varus, which was corrected to  $4.5^\circ \pm 1.6^\circ$  of valgus after surgery. The mean preoperative flexion contracture was  $10^\circ \pm 3.5^\circ$ . Postoperatively, two patients (three knees) had a residual flexion contracture, which was  $\leq 5^\circ$  in all cases. The mean range of knee motion improved from  $103.3^\circ \pm 14.1^\circ$  preoperatively to  $119.1^\circ \pm 8^\circ$  at the time of final follow-up. The mean Knee Society Score pain subscore improved from  $39.5 \pm 12.6$  to  $93.2 \pm 10.5$ , and the function subscore improved from  $47.1 \pm 17.8$  to  $78.5 \pm 21.9$ . There was no evidence of implant loosening or osteolysis on radiographs.

**Abstract no.: 35457**

**LONGEVITY OF TOTAL KNEE ARTHROPLASTY IN YOUNG AND ACTIVE PATIENTS USING EXTENSION FIRST GAP BALANCING TECHNIQUE**

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Flexion instability in mobile bearing design can lead to bearing dislocation. The aim of this study was to evaluate long-term results of gap balancing, with extension gap first and parallel to the tibial cut technique for flexion space in 2 Posterior-Stabilized (PS) total knee designs with identical femoral component in young and active patients. 43 consecutive Rotating-Platform (RP-PS, 33 patients) and 38 Fixed-Bearing (FB-PS, 29 patients) with University of California Los Angeles (UCLA) activity score of 5 or above and mean age was  $5.3 \pm 1.5$  years were followed prospectively for a minimum of 10 years. There were no mid flexion instability malalignment, patellofemoral maltracking, spinout, aseptic loosening or osteolysis at final follow-up. The mean femoral rotation was 2 and 3 degrees of external rotation as compared to the transepicondylar axis in RP-PS and in FB-PS, respectively. Kaplan-Meier survivorship at 10 years for wear related revision was 100% and 97% in RP-PS and in FB-PS, respectively. This technique is a safe, accurate, easy and reproducible with excellent alignment and long-term stability and function in young, active patients.

**Abstract no.: 35458**

**ASSESSMENT OF PARTICLE INDUCED REACTIVE SYNOVITIS IN FIXED AND MOBILE BEARING M POSTERIOR-STABILIZED DESIGNS:**

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This is the first long-term, prospective, matched-pair study using MRI to analyze wear-induced synovitis and osteolysis between rotating-platform posterior-stabilized (RP-PS), fixed-bearing metal-back (FB-MB), and all-polyethylene tibial (APT) designs in active patients with identical femoral components and polyethylene. From September 1999 to October 2001, a matched-pair analysis of 24 TKAs (18 patients, 3 groups: 8 RP-PS, 8 FB-MB, and 8 APT) was performed. TKAs were matched for age, sex, body mass index (BMI), and University of California Los Angeles (UCLA) activity scores. All patients underwent MRI using MAVRIC (multi-acquisition variable-resonance image combination) knee protocol designed to reduce metal susceptibility artifact. Images were evaluated for volumetric measure of synovitis and/or osteolysis and presence of fibrous membrane formation at the cement-bone interface. The mean age was  $64 \pm 5$  years (59 – 72). The mean follow-up was  $11.6 \pm 0.7$  years (10 – 13). The mean UCLA score at the time of surgery was  $8.5 \pm 2.6$  (5 – 10). Reactive synovitis was observed in 6 RP-PS (75%), all 8 FB-MB (100%), and 6 APT (75%) knees. There was a significant difference between the RP-PS and FB-MB knees in volumetric synovitis. Osteolysis with bone loss more than 4 mm was seen in 3 FB-MB, 2 APT, and 0 RP-PS. There was no statistical difference for osteolysis between the three designs.

**Abstract no.: 35462**

**SURGICAL CORRECTION OF SPINE DEFORMATIONS AT AN ANKYLOSING SPONDYLITIS**

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Surgical correction of spine deformities of with ankylosing spondylitis has been carried out in 10 patients (they were men all) at the age from 35 to 60 years. Duration of disease (from initial diagnosis and to forming of manifestive signs of spine deformities (mainly hyperkyphosis in thoracic spine) included patients at the age from 10 to 20 years. Most patients (8 observations) have got adequate medicamental therapy at previous stages (including biological preparations for 4 patients). Surgical treatment included the following: resection of spinous process, facet joints, transverse process, lamina, pedicle and posterior elements of body of vertebra L2. Transpedicular fixation has been carried out on the level of vertebrae L3-4 and L1-Th12, then hyperextension has been performed owing to closing in of spinous processes of vertebrae L1 and L3 under control the of spine cord pulsation and neurophysiologic control. Hyperextension has been carried out owing to closing in of body of a vertebra or on account of intervertebral disk rupter. Spine stabilized in that position. Posterior spondylodesis has been fulfilled by means of bones autotransplants. Under control X-ray examination lumbar lordosis increased in total on 40% (mainly on account of segment L1- L2- L3). In accordance with the Oswestry Disability Scale of quality of life improved on 60 %. In that way, surgical correction of spine deformities in patients with ankylosing spondylitis is possible and necessary in the presence of serious deformities of thoracic spine on account of hyperlordosing in lumbar spine for improvement of patients' quality of life.

**Abstract no.: 35464**

**PAIN PATTERNS IN PATIENTS WITH POSTERIOR TIBIAL TENDON DYSFUNCTION**

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Posterior tibial tendon dysfunction is a clinical syndrome which is well-reported in the literature. It commonly affects women in their fifth decade, and if untreated may progress to an acquired flat-foot deformity. It typically presents with a vague activity-related ache in the affected leg, but at this stage symptoms may subside with rest. Because of its insidious onset, there is usually delayed presentation to secondary care. At this stage patients often have established tendon dysfunction and may have deformity as well. To date, the pattern of pain has been reported to be on the medial aspect of the foot and ankle of the affected leg, which then moves to pain on the lateral aspect of the ankle as the disease process progresses. We present a study of 25 patients who presented consecutively to a district general hospital in the East of England. We show that early on in the syndrome, the pattern of pain is often expressed more proximally along the muscle belly of tibialis posterior. To our knowledge, this is the first study to describe this pain pattern. We believe that this pattern of tenderness is pathognomonic and as such can aid in diagnosis early on in their disease, when the full constellation of signs can be subtle.



**Abstract no.: 35468**

**MULTILIGAMENT KNEE INJURY IN IATROGENIC NEUROPATHIC JOINT**

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Rare Case report of multiligament knee injury in young adult female after trivial trauma, not reported previously in English literature. Development of spinal syrinx following spinal anaesthesia for caesarian section; Patient was ambulatory but dissociative diminution of sensations 10 months after spinal anaesthesia, when patient had a trivial fall. Neurological deficit of decreased pain and position sense, lead to multiligament knee injury even with trivial trauma. Till now no report of multiligament knee injury in iatrogenic neuropathic joint. **CONCLUSION:** Spinal Anaesthesia is a commonly performed procedure. Unless adequate precautions are taken the possibility of spinal cord injury is present which causes considerable morbidity. Neuropathic joint as a result of this has been described herewith.

**Abstract no.: 35474**

**CLOSED REDUCTION AND PERCUTANEOUS SCREW FIXATION OF INTRA-ARTICULAR FRACTURES OF THE CALCANEUM**

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Fractures of the calcaneus generally occur in the setting of high-energy trauma. Additionally injuries to the heel pad and soft tissue in the foot may further complicate the management of such injuries. The objective of this study was to evaluate the functional and radiological outcome of percutaneous screw fixation for intra-articular calcaneum fractures. This prospective study was conducted on twenty patients (16 men and 4 women). The average age was 35.7 years (19–61). The most common cause of injury was a fall from height in 13 patients, RTA in 5 patients and direct blow in 2 patients. Patients were operated on within a mean time of 5.6 days of admission (1–10 days) and were followed up for an average period of 16 months (6–34 months). For two patients percutaneous pinning was abandoned intra-operatively due to unsatisfactory reduction and calcaneal plating was done who have been excluded from the study. Functional outcomes were measured by AOFAS ankle-hindfoot scale with an average of 81 (58-95). Two patients had superficial infections which healed with oral antibiotics and minor debridement. One patient with a major heel pad avulsion injury had necrosis of the heel pad for which a reverse sural artery flap was done, however there was no evidence of osteomyelitis. Fractures healed at an average of 8 weeks (6-10 weeks). Our patients returned to work at an average of 4.6 months(3-13). Thus we conclude that CR and percutaneous pinning is a good method considering the soft tissue complications associated with calcaneal fractures.

**Abstract no.: 35476**

**TERRIBLE TRIAD ELBOW FRACTURE- DISLOCATION- A CASE REPORT**

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**INTRODUCTION:** Terrible triad elbow fracture- dislocation are represented by elbow dislocation associated with fracture of coronoid and radial head .An increasing understanding of elbow injuries, improved experience , technique and implants have advanced to an extent where restoration of functional elbow in most patient can be expected .surgeon must bring every skill to bear, as soft tissue technique , fracture repair and joint arthroplasty are routinely required to adequately treat these complex constellation of injury. **CASE REPORT:** A 35 year old male patient was admitted with history of fall from tree. X-ray in the emergency room showed a fracture of radial head , fracture of coronoid and elbow dislocation on right elbow. Reduction was tried in the emergency room but was unsuccessful .CT scan of the right elbow joint was done which confirmed our diagnosis of terrible triad elbow fracture-dislocation . **METHOD:** Fracture was fixed from inside out i.e coronoid fracture then radial head followed by reconstruction of lateral collateral ligament. Lateral buttress and suture anchor of coronoid fracture and T plating of radial head was done. **RESULT:** A functional and stable elbow was achieved post operatively . Follow-up was done at 2,4,6,8 weeks . There was gradual increase of range of motion(0-90) which was assisted with a range of motion brace. terrible triad of elbow, suture anchor, mayo elbows performance index

**Abstract no.: 35480**

**ASSESSMENT OF THE RESULTS OF DYNAMIC HIP SCREW (DHS) FIXATION IN FRACTURES OF FEMORAL NECK**

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**Aims:** The present study was done to evaluate the results of Dynamic Hip Screw fixation in the fractures of femoral neck. **Methods:** A three year prospective study was carried out on 60 patients attending our emergency department with femoral neck fractures fulfilling our case selection criteria. **Results:** Out of 60 cases with an average age of 56.3 years, 24 (40%) were males and 36 (60%) females, with involvement of left femur in 40 (66%) and 20 (34%) had involvement of right femur. Majority of fractures 44 (73%) were displaced (Garden type III/ IV) as compared to 16 (27%) undisplaced (Garden type I/ II). In our series 44(73%) cases were as a result of low energy trauma (simple fall on level ground) as compared to 16 (27%) due to high energy trauma. The interval between injury and surgery averaged 4.3 days, with 90% of cases operated within one week. All patients were followed for a minimum of 24 months. The average time for union in our cases was 4 months and ranged between 3 to 5 months. Among complications 4 (6.67%) cases developed non-union, and out of 56 united fractures 4 (7.14%) cases developed avascular necrosis. Good to Excellent results were achieved in 42 (70%), Fair in 10 (16.67%) and Poor in 8 (13.3%) cases. **Conclusion:** Dynamic Hip Screw fixation as a treatment modality in femoral neck fractures has an advantage of rigid internal fixation, good compression across the fracture site, early mobilization and high union rate of fractures.

**Abstract no.: 35488**

**ILIZAROV COMPRESSION - DISTRACTION DEVICE FOR DISTRACTION ANGIOGENESIS IN TAO (THROMBO ANGIITIS OBLITERANS)**

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Thrombo Angitis Obliterans or Buerger's disease is still one of the diseases that has no medical cure. In modern world in recent times, the magic wires and rings of Prof. Gabriil Abramovich Ilizarov has emerged as the only hope that could be offered to the patient affected with this dreaded disease. In a well selected case a single episode of distraction angiogenesis may offer a cure to the patient. We at Bari-Ilizarov Orthopaedic centre have come up with this Ilizarov device for 14 selected patients that can accomplish this task to the same level of perfection. A surgical procedure was performed at the anterolateral part of the tibia approximately 12cm long and 2 cm wide. The Ilizarov device consists of two rings and 6 olive wires linked to a lateral plate. The tibial section has been moved approximately 1mm per day for 3 weeks. The clinical status improved within a few weeks: cure of the trophic ulcers and no more pain. Arteriogram at the second months offers the surgery depicted and improved circulatory result. After 6 months the result is very satisfying with a walking distance of 3 kms, and absence of pain and the perfect trophic cutaneous status improved. We hope that the meticulous intelligent follow-up and application of this novel device will bring angiogenesis within the reach of all deserving patients.

**Abstract no.: 35491**

**REDUCING SAME DAY CANCELLATIONS DUE TO PATIENT RELATED FACTORS IN ELECTIVE ORTHOPAEDIC SURGERY: EXPERIENCE OF A CENTRE IN THE UK**

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Background: Cancellations on the day of surgery represent major wastage of resources and can impose significant distress to patients. Minimizing same day cancellations can improve cost effectiveness of operating theatre running. Aim: To determine the impact of administering a questionnaire, by phone, the week prior to surgery, to elective orthopaedic patients, which was aimed at identifying factors that could lead to same day cancellation for patient related reasons (change of patient's condition, newly onset medical condition, patient not aware of surgery arrangements, metal allergy). Methods: The questionnaire under examination was administered to elective orthopaedic patients over a nine month period. The rate of same day cancellations due to patient related reasons in this cohort was compared with a previous cohort assessed over a five months period when the questionnaire was not in place. Results: Administering the questionnaire reduced the same day cancellations due to patient reasons from 11 out of 110 (10%) to 2 out of 118 (1.60%) ( $p = 0.01$ ). Theatre wastage in terms of national tariff lost due to cancellations was reduced from be £25881 to £1650 ( $p < 0.001$ ). Conclusions: Administering the examined questionnaire can significantly reduce same day cancellations due to patient related reasons.

**Abstract no.: 35494**

**HOW DO ADOLESCENTS WITH IDIOPATHIC SCOLIOSIS PERCEIVE THEIR EXPERIENCE OF BRACING? – AN EVIDENCE BASED QUESTION**

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Introduction Bracing is considered when the curvature of spine is between 20° to 50°, the patient is skeletally immature and the curve is progressing (Bono, 2007). There is level II evidence suggest that bracing can reduce curves. Braces need to be worn full time for them to be effective (Negrini et al, 2010), Poor compliance is strongly correlated with brace treatment failure and appropriate support promote compliance of treatment. Self-esteem is very unstable during early adolescence and particularly low self-esteem has been linked to stress. We identified a lack of support given to adolescents needing brace therapy for idiopathic scoliosis. The aim of the study was to explore adolescents' feelings about their experience of wearing a spinal brace, and their opinions on support provided by professionals and families. There is evidence of literature linking bracing to low body image and reduced quality of life. METHODS: We searched the literature for evidence and databases such as Medline, Pubmed and Cochrane. Individual articles were looked one by one sequentially. We reviewed wide range of publications. Only one paper (Sapountzi-Krepia et al, 2006) was appropriate, and appraisal of the paper was done RESULTS: There is evidence available that there is lack of support given to adolescents with idiopathic scoliosis undertaking a bracing programme which was identified as a source of concern. Conclusion: The evidence is to recommend changes in practice, that ensure support to be given to adolescents undergoing a bracing programme, including input from psychologists and regular monitoring of patient satisfaction.

**Abstract no.: 35497**

**TREATMENT OF PEDIATRIC FEMORAL DIAPHYSEAL FRACTURE WITH TENS**

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Introduction: Femoral shaft fractures account for 1.6% of all paediatric bony injuries. Angulation, malrotation and shortening are not always corrected effectively by conservative methods. Fixation of femur fractures in children & adolescents by flexible intramedullary nailing is becoming widely accepted because of the lower chance of iatrogenic infection and prohibitive cost of in hospital traction and spica cast care. Method: A prospective study of 45 cases of fracture shaft femur was done in BMCRI from 2009 to 2011 Children and adolescents between the age group of 5-15 years with femoral shaft fractures excluding subtrochanteric and supracondylar fractures were included. All patients underwent titanium elastic nailing fixation for the femur fracture. Clinical parameters like pain, comfort to the patients, early mobilization, operative technique, radiological evaluation for union, stages of weight bearing till complete recovery and any associated complications were studied. Patients were followed up for a period of 6 months at 4,8,12 and 24 weeks after surgery. Result: The outcome was excellent in 35 cases, satisfactory in 10 cases and there were no cases of poor outcome. No cases got infected, 2 cases had valgus malunion and 5 cases had limb lengthening. Conclusion: Flexible intramedullary nail leads to rapid fracture union by preservation of fracture hematoma and limited soft tissue exposure. It also helps in preventing damage to the physis, is fairly a simple, reliable technique with a shorter learning curve with negligible complications.



**Abstract no.: 35498**

**TREATMENT OF DISPLACED UNSTABLE DISTAL RADIUS FRACTURE WITH VOLAR PLATE.**

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Introduction: The primary goal in treatment of unstable fractures of the distal radius is to achieve optimal restoration of the disrupted anatomy and allow quick return of hand function, while preventing secondary fracture displacement. Open reduction and internal fixation with plates is a valid treatment as opposed to bridging external fixation or percutaneous pinning and casting, stable internal fixation permits early motion of the neighboring joints and optimizes functional rehabilitation of the wrist and hand. Materials: We treated a consecutive series of 25 patients with 31 displaced, unstable distal radial with volar plate from 2009 to 2011. At a minimal follow-up time of 12 months and outcome was evaluated radiographically and clinically using Gartland and Werley method. Results: the fractures had healed with highly satisfactory radiographic and functional results. The final volar tilt averaged 5°; radial inclination 21°; radial shortening 1 mm and articular incongruity 0 mm. Wrist motion at final follow-up examination averaged 55° extension, 50° flexion, 25° ulnar deviation, 15° radial deviation, 80° pronation, and 75° supination. Grip strength was 78% of the contralateral side. The overall outcome according to the Gartland and Werley scales showed 19 excellent and 6 good results. Conclusion: Our experience indicates that most displaced distal radius fractures can be anatomically reduced and fixed with volar plate. The combination of stable internal fixation with the preservation of the dorsal soft tissues resulted in rapid fracture healing, reduced need for bone grafting, and low incidence of tendon problems in our study.

**Abstract no.: 35500**

**OUTCOME OF LUMBAR SPINE SPONDYLOLISTHESIS TREATED WITH PEDICLE SCREW FIXATION WITH AND WITHOUT INTERBODY FUSION DEVICE (CAGE).**

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**Introduction:** Lumbar Spondylolisthesis has been surgically managed by posterior Instrumentation & interbody fusion using pedicle screw and rod fixation. Many surgeons advocate the use of an interbody fusion device (Cage) to assist in fusion and increase the stability of the construct. **Materials:** We performed a clinical and radiographical prospective non randomised study of 20 patients with Spondylolisthesis having PLIF with autogenous bone chips alone and 20 patients having PLIF with artificial cages packed with morselized bone graft. Patients followed up for at least 2 years. Clinical follow-up regarding pain, fusion and the functional outcome was be evaluated by visual analog scale pain rating, and Oswestry Disability Index, SF-36, Modified Benzel Japanese orthopaedic association score. **Results:** The mean age of patients at the time of surgery was 46.85 years. Bone graft alone had 90% fusion at 1 year & 100% fusion seen with Cage incorporation, earliest at 6 months. Average fusion rate in BG and Cage group were 10 & 8.5 months respectively. Complications included screw loosening 20%, non union 10%, CSF leak 10% and urinary disturbance 10% in BG group. In Cage group 10% deep infection, 10% CSF leak were encountered. Patient satisfaction was 80% in BG group and 90% in Cage group. **Conclusion :** Addition of an interbody fusion device (Cage) helps in greater stability, lower implant failure, higher fusion rate and better functional outcome in surgically treated patient of lumbar Spondylolisthesis.

**Abstract no.: 35501**

**A RARE CASE OF BILATERALLY SYMMETRICAL FEMORAL SHAFT STRESS FRACTURE IN YOUNG MILITARY RECRUIT : A CASE REPORT**

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Introduction: Stress fracture is commonly seen in athletes and military personnel mainly because of overuse with repeated strain on the bone. There is imbalance between bone formation and resorption as a result of this excessive repetitive load. Case report: A 25 year old male, BSF trainee came with complaints of pain in the bilateral upper medial thigh with no history of trauma. Fulcrum test and hop test were positive, radiograph showed stress fracture in posteromedial aspect of both femoral shaft confirmed by CT Scan, all investigation for metabolic bone disorders were normal. Treated conservatively with rest and graduated exercises till fracture healed, later returned to activity without any symptom till now. Discussion: Factors that put athletes and military recruits at risk for stress fractures are inappropriate training with overuse, malalignment, nutritional deficiencies, and endocrine disorders. Bone scan and MRI is more sensitive than radiographs. Conservative therapy is uniformly successful provided the patient gets adequate rest, and factors promoting the initial injury are addressed. Return to play is guided, however, by the absence of clinical symptoms. Conclusion: In conclusion, stress fractures are relatively common in runners and must be ruled out early to prevent serious potential complications. The hip and thigh pain is a common complaint in runners. Femoral stress fracture should always be in the differential diagnosis. Relative rest and graduated exercise is usually employed as conservative approach for treatment till union.

**Abstract no.: 35504**

**SHOULD THORACOTOMY BE DONE COMPULSORILY ON LEFT SIDE IN DORSAL KOCH'S SPINE ?**

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**INTRODUCTION** - Dorsal spine tuberculosis requiring anterior decompression is usually approached through left thoracotomy with due reasons. We analysed the MRI findings of consecutive 102 patients requiring anterior decompression through thoracotomy approach. **AIMS & OBJECTIVES** - To re-analyse whether it is really more scientific and rational to do thoracotomy from left side or vice versa in a case of dorsal koch. **MATERIAL & METHODS** - In this prospective study we analysed MRI of 102 consecutive patients of dorsal koch with neurological deficit requiring anterior decompression through transthoracic approach. The tubercular debris ( pus, granulation tissue - compressing anterior pathology ) was predominantly found on right side in 72 cases ( out of 102 cases ) while 19 showed debris more localised to left side. In the remaining 11 cases the debris was almost central with equal distribution on right and left side. Right thoracotomy was done in 82 cases while left thoracotomy was done in 20 cases. Approaching through the predominant side lesion was safer and quicker and less time required for column exposure. As lesion is approached from maximally compressed side one can expect a better decompression. Passing sublaminar wire for fixing the spine in lateral position ( with Hartshill ) is easier when a right handed surgeon approaches from the right side. **RESULT** - There was no unusual or added intra-operative or post-operative complications related to the approach. **CONCLUSION** - Right thoracotomy should be strongly recommended for a right sided predominantly compressing tubercular pathology with its described benefits.

**Abstract no.: 35507**

**INFERIOR DISLOCATION OF SHOULDER: A CASE REPORT**

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Introduction: Luxatio erecta humeri is a very rare form of glenohumeral dislocation, resulting in the inferior displacement of the humeral head [1, 2]. The inferior dislocation of the shoulder is a rare injury that occurs only 0.5% of the total number of shoulder dislocations. [1, 2, 3] Treatment with traction-counter traction techniques is usually successful in reduction of the humeral head. Case report: We present such a case of inferior dislocation of the right shoulder in a 55 year old farmer following an overhead fall, for which closed reduction was done under sedation. The patient regained full range of movements after twelve weeks with no bony injury and no neurological deficit. Conclusion: Luxatio erecta humeri is an uncommon form of shoulder dislocation and reduction at the earliest is critical. Axillary artery damage and brachial plexus stretching can easily complicate these injuries and must be followed up carefully.

**Abstract no.: 35509**

**TOTAL KNEE DISLOCATION: A CASE REPORT**

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Introduction: Knee dislocations are an extremely traumatic injury and can be limb threatening because of the potential neurovascular damage associated with this injury, knee dislocations are considered one of the most serious knee injuries, albeit one of the most rare. Due to spontaneous reductions, the true frequency of knee dislocations is not known. [1–4] Unreduced dislocations present with an obvious deformity, but spontaneously reduced dislocations can lead the examiner to underestimate the severity of the injury, thereby risking the limb. [1, 2, 3, 5, 6]Case report: We report two cases of total knee dislocation. The first patient was a 38 year old male, who was hit by the fender of a car, following which he sustained injury to his left knee.The second patient was a 75 year old male who had a self fall and sustained injury to his right knee.Conclusion: After suffering a knee dislocation, the patient is faced with a long and difficult rehabilitation program, which must focus on full range of motion (ROM) and strength in order to achieve functional recovery. [5, 7, 8, 9]

**Abstract no.: 35514**

**RADIAL NERVE PALSY DUE TO ENTRAPPED NERVE BETWEEN INTERCONDYLAR FRACTURE FRAGMENTS- A CASE REPORT**

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Radial nerve palsy has been commonly associated with humeral shaft fractures. Radial nerve palsy associated with intercondylar fracture with entrapment of nerve between the intercondylar fractures is not reported in literature. On extensive search of literature radial nerve palsy with distal humerus fractures were usually caused by supracondylar spike which can compress the nerve and may occasionally injure the nerve. We here report a case of 35 year female, who presented to the emergency room with fracture of intercondylar part of humerus and radial nerve palsy. The fracture was splinted and after preoperative evaluation and computerized tomography scan patient was shifted to operating room. Patient was positioned in lateral position and exposure was done using posterior approach with olecranon osteotomy. While cleaning the intercondylar fracture fragment we could see the radial nerve entrapped between the fracture fragments. Radial nerve was carefully mobilized and delivered out and isolated with the help of infant feeding tube. This was followed by anatomical reduction and bicolumnar fixation with reconstruction plates in parallel mode. Post operatively active range of motion was started on 1st post operative day. Suture removal was done on 14 day. At 3 months radial nerve recovered and fracture showed evidence of union with range of motion at elbow from 20 to 100 degree. This report highlights the uncommon cause of radial nerve palsy in intercondylar fracture, neglecting which can cause iatrogenic injury to radial nerve and poor functional outcome.

**Abstract no.: 35521**

**SURGICAL SITE INFECTION ITS CORRELATION WITH MEDICAL CO MORBIDITIES; EFFECT OF SIMPLE AND COST-EFFECTIVE METHODS TO REDUCE THE INCIDENCE OF INFECTION IN HIP FRACTURE SURGERY.**

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Introduction: Hip fracture is a major public health issue, due to an ever increasing ageing population and hence an increasing share of health care budgets are allocated to this group. Surgical site infection in this population poses a special problem leading to longer hospital stay, increase in mortality and cost of treatment. The implementation of cost-effective preventive and therapeutic measures in the short term may help to ameliorate the long term financial burden of NHS, and, may significantly improve the overall outcome and quality of life for the elderly after fracture. We at our level one trauma centre cater for large group of ageing population and treat on average 550 hip fracture patients per year and majority of them present with associated significant medical co morbidity. In this prospective clinical study we aim to look at the effect of the simple and cost effective measures taken in our unit in order to reduce the infection rate in hip fracture surgery and correlate infected case with pre existing medical co morbidities. All patients identified by both surgical surveillance teams and patients on whom a culture and sensitivity samples are sent to microbiology are included in the study. Patients who did not require any intervention, patients whose swabs did not show any growth and patients who had an early discharge to rehabilitation are excluded. Chi square tests with Yates correction for continuity or Fisher exact tests will be used. to determine differences in the rates of each surgical site infection among the two groups.



**Abstract no.: 35522**

**SHOULD CLOSED ANKLE FRACTURE PATIENTS BE RECEIVING VTE--  
PROPHYLAXIS ON FIRST PRESENTATION?**

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Thromboembolic events event following orthopaedic surgery are uncommon but deep vein thrombosis and pulmonary embolism can occur. The administration of prophylaxis, heparin appears to reduce the rates of thromboembolism. Patients that have suffered closed ankle fractures are thought to be of particularly at risk due to prolonged period of immobility especially when combined with risk factors. 146 closed ankle fractures were admitted between April and September 2012. 104 were managed conservatively while 42 (29%) were managed surgically including 39 ORIFs and 3 manipulations under anaesthesia. The mean age of presentation was 47.91. When looking at the mechanism of injury (MOI), 101 (69%) were due to trauma (assaults, falls, RTAs, sports) and 45 (31%) due to another non--trauma MOI. Looking at the documentation for ankle fracture classification using the Danis--Weber system, as this precludes to management, therefore 22 (15%) Weber--A, 28 (19%) Weber--B, 1 (<1%) Weber--C and 97 (66%) undefined. Two (1.9%) of the 104 managed conservatively received LMWH whereas 10 of 39 (25.6%) ORIFs received LMWH and 2 of 3 (33.3%) MUAs received LMWH. There was no pattern to the administration of LMWH in the operated group of closed ankle fractures. The weight bearing status for a majority of the patients, greater than 80% were non-weight bearing for approximately 5-weeks. Result-There was no incidence of VTE events or deaths within the follow--up period the patient was seen in follow--up outpatient clinic or in the interim period of admission after ORIF surgery.

**Abstract no.: 35523**

**IS HAND OA ASSOCIATED WITH AND PREDATES INVOLVEMENT OF OTHER MAJOR JOINTS LIKE SPINE, HIP, KNEE, GREATER FOOT-MID TOE, NECK AND SHOULDER? AN ATTEMPT TO REDUCE ADVANCEMENT OF OA**

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**HSS, New York (UNITED STATES)**

The objective of this study is to investigate severity of hand involvement and its association with symptomatic and asymptomatic major joints involvement and to investigate how many patients with symptomatic joints required surgical interventions. 100 consecutive patients were recruited. All recruited patients had a hand photo and PA hand X-ray. Clinical analysis was performed using ROC modified PAQ questionnaire. On X-ray, severity of hand involvement was assessed using Kellgren-Lawrence (KL) grading scale. On hand photo, severity of hand involvement was assessed using Ranawat grading scale. Hand association with symptomatic joints was found in 69% patients and 92.7% of these required surgical interventions. To date we found association between hand OA and other major joints OA. Thus, we attribute this to genetic predisposition.

**Abstract no.: 35524**

**CLINICAL OUTCOMES OF MIDCLAVICULAR FRACTURES TREATED WITH TITANIUM ELASTIC NAILS**

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**Background:** Midclavicular fractures are common clinically, accounting for about 70% to 80% of all clavicular fractures. Recent studies in the literature have shown a higher prevalence of symptomatic non-union, malunion and poor functional outcome after conservative treatment of more severe midclavicular fractures. Our aim was to evaluate the clinical outcomes of midclavicular fractures treated with titanium elastic nails. **Methods:** The study was conducted in the department of Orthopaedics, Lady Hardinge Medical College and Associated Hospitals, New Delhi from November 2010 to April 2012. Thirty patients with closed fracture of midshaft clavicle were treated with titanium elastic nailing system (TENS) inserted through the sternal end of the clavicle. We evaluated the visual analogue scale (VAS), Constant score and the Disabilities of the Arm, Shoulder and Hand (DASH) scale to determine outcomes. **Results:** A mean follow-up of 12 months (range 7–16 mo) revealed radiographic fracture union in all patients with an average clinical healing time of 12 weeks. Mean subjective pain 3 days after surgery was significantly lower than the day before surgery. The mean range of motion 3 days after surgery was significantly improved compared with the day before surgery. Mean implant removal was done in 21.33 weeks. At the end of 6 months mean constant score was 95.23; and the mean DASH score was 3.96. **Conclusion:** Limited open reduction and internal fixation with titanium elastic nails is a safe and minimally invasive surgical procedure for the treatment of displaced midclavicular fractures in adults and achieves good functional results and high patient satisfaction.

**Abstract no.: 35528**

**34485**

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Introduction: stability and lower limb long length restoration are the 2 most important points to assure a good short and long-term result in a primary THA. We made a study to appreciate the combination of a dual mobility cup (to assure the stability) and a computer assisted surgery (to assure the restoration of the length of the lower limb). Method: Between 2008 and July 2012, in 263 consecutive primary THA a dual mobility cup with a cementless stem have been implanted with navigation (Amplivision®, Amplitude, France) by the same surgeon. After inserting the cup (Saturne®, Amplitude) flush to the bone the navigator record the position and control the 3D positions of the stem (offset, rotation, recess) and the long length of the lower limb. Operative time, long length discrepancy and dislocation have been noted. Results: Average operative time was 76 minutes (60 to 100). At the average follow-up of 2,1 years (4 months to 5 years), there was one case of dislocation (0,38 %, traumatic intra prosthetic dislocation at 6 months after a fall) and 5 long length discrepancies (1,9 %) from 4 to 6 mm not requiring a compensatory sole. Conclusion: Dual mobility associated with Navigation is useful to prevent the 2 most frequent complications of THA.

**Abstract no.: 35534**

**EVALUATION OF RESULTS OF INTERTROCHANTRIC VALGUS OSTEOTOMY IN UNUNITED FRACTURE NECK FEMUR USING VARIOUS CLINICAL CRITERIA.**

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**Introduction:** The aim of this study was to evaluate the results of valgus osteotomy in patients with neglected or failed internal fixation of intracapsular fracture neck femur. **Methods:** Thirty patients in the age group from 17 years to 55 years were treated with valgus osteotomy and fixation with double angled blade plate and one additional 6.5 mm cannulated cancellous screw was also used. **Results:** The average duration between injury and surgery was 11.3 weeks. The union at fracture site was achieved in 26 patients at an average period of 22 weeks. The union at osteotomy site was achieved at 8.6 weeks. The osteotomy site united in all cases. The complications of surgical procedure included two cases of blade cut through, 2 cases of joint penetration, four cases of avascular necrosis and two cases of non union. The results were clinically graded using the Original Merle D' Aubigne - Postal System, the modified Merle D' Aubigne - Postal System and Harris hip score. **Conclusion:** Valgus Intertrochanteric osteotomy for intracapsular fracture of neck of femur and its fixation with 120o double angled blade plate gives satisfactory results in most cases.

**Abstract no.: 35535**

**HUMERUS LENGTHNING OF 10 CM WITH MONORAIL FIXATOR- A CASE REPORT**

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Upper extremity limb length discrepancy is a rare occurrence. Humerus shortening as a sequelae of many conditions needs specialized treatment to ensure the functional status of upper limb. Surgical treatment of upper limb length discrepancy has rarely been described. Treatment of humerus shortening is a functional and economical challenge for the patient, as well as a treatment dilemma for the surgeon. In our case of humerus shortening ,we use monorail fixator based on the principle of distraction osteogenesis to diminish limb length discrepancy. With monorail external fixator 10 cm lengthening procedure of humerus bone was done in 25 year old female patient without any complication and 2 year follow up was done

**Abstract no.: 35538**

**COMPARISON BETWEEN STANDING AND SUPINE PLAIN FILM LATERAL RADIOGRAPHS IN SPONDYLOLISTHESIS USING THE PACS SOFTWARE**

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Introduction: Spondylolisthesis is the anterior or posterior translation of one vertebra over the caudal vertebrae. Etiologic classification is based on Wiltse-Newman-MacNab while Meyerding's provides percentage and grade of displacement. Plane radiography is the first and most important diagnostic tool. Objective: To analyze the differences between standing and supine lateral radiographs of lumbosacral region in spondylolisthesis patients using the Picture Archiving and Communication System (PACS) software. Methods: Standing and supine lateral radiographs of 23 patients with spondylolisthesis were reviewed and analyzed for the lumbar lordosis, % slip, disc height, sacral inclination and slip angle. Both the radiographs were taken at the same distance and same magnification, measurements being taken from the PACS system. Results: Of the 23 patients (14 F/9M). A significant difference ( $p < 0.05$ ) was found between the standing (mean 36.85% + 12.78%) and supine (mean 27.39% + 11.14%) lateral radiographs pertaining to the percentage slip. Standing (mean 37.74% + 10.96%) and supine (mean 30.96% + 12.76%) measurement of lumbar lordosis also showed a significant difference. However, the differences in the disc space height, sacral inclination and slip angle did not show any statistical significance. Conclusion: The standing radiographs in spondylolisthesis effectively demonstrate the increase in slip percentage and lumbar lordosis. This increase is due to the loading of the spine which exacerbates the deformity. This can have a significant impact on the grading of the slip which can influence the treatment strategy. The digitalization and measurements from the PACS eliminate the need for manual retrieval and calculations.

**Abstract no.: 35539**

**TO COMPARE THE EFFICACY OF AUTOGRAFT VERSUS PARTIALLY  
DECALCIFIED ALLOGENIC BONE GRAFT IN TREATMENT OF DELAYED  
AND NON-UNIONS OF DIAPHYSEAL FRACTURES OF LONG BONES**

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Introduction: Fractures of long bones that occur annually, 5 – 10 % end in delayed or non-union and require augmentation for bone healing. Freshening at non-union site and bone grafting are the standard procedures used to treat non-union of fracture. Purpose: We compared the efficacy of partially decalcified bone allograft and autograft in treatment of delayed or non-union of diaphyseal fractures of long bones. Methods: Between May 2010 and May 2013, forty patients with diaphyseal fracture non-union of both upper limb and lower limb, with  $\geq 6$  months duration were enrolled in our study. Graft type was determined by randomization. The study outcomes were assessed on union rate, time of union, operation time, postoperative clinical signs and complications in two groups. Result: The time from the fracture to surgery ranged from 6 to 80 months. Union was seen in eighteen (90%) and seventeen (85%) in autograft group and allograft group respectively. The time to achieve bone union was 21.78 weeks and 21.33 weeks in autograft and allograft group respectively. Average surgical time for allografting was less as compared to autografting. 5 patients in autograft group complained of pain at donor site. Conclusion: Our study revealed allografts can produce treatment results as good as those with autografts in non-union while preventing donor site complications.



**Abstract no.: 35540**

**OLD FRACTURE WITH GAP NON-UNION IN SUPRACONDYLAR  
INTRACONDYLAR REGION OF FEMUR**

Rafiqul KABIR, Rafiqul KABIR

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Supracondylar Intracondylar fracture of femur with gap non-union is very complicated case to manage. Direct violent trauma from any cause produce such type of devastating injury. All over the world this type of non-union is very uncommon but in our country this type is common as most of poor people are day laborer and have to do risky jobs without protective measure and also due to initial maltreatment in remote undeveloped village areas. Ultimately the affected persons become disabled with non functioning floating lower limb from the fracture site. Even some of the affected persons express their desire to do above knee amputation to get relief from their inhuman sufferings. For making their life fruitful we designed low cost treatment procedure within their financial ability and achieve very good result

**Abstract no.: 35541**

**OUTCOME OF SHOULDER MUSCLE TRANSFERS WITH RESPECT TO CHANGES IN GLENOID VERSION AS MEASURED BY MRI STUDIES A PRELIMINARY REPORT**

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Introduction: The natural history of sequelae of OBPP can be changed to some extent if the re-balancing across the joint is done at an early age. This hopefully reduces a need of future bony surgeries. The purpose of this study was to see if tendon transfers and muscle rebalancing procedures across the shoulder joint when done early help in remodelling of the joint. Patients and methods: One hundred and fifty patients of obstetric brachial plexus palsy with shoulder deformity underwent shoulder muscle transfer along with anterior shoulder release at our institutions from 1999 to 2007. Of these in 25 patients, Glenoid version and humeral head subluxation were quantified with magnetic resonance imaging or computed tomography, and glenohumeral deformity was graded. All were classified according to Waters grading system with eleven patients grade II; ten patients grade III and remaining three grade IV grade 3. The average age at surgery was 3.60 years (1 yr to 16 yrs). Mean follow up was 1.97 years( 1yr to 3.3 yr).Results: Mallet score of all patients improved as shown in our earlier data of 150 cases. The angle of retroversion improved from an average of 19.51 to 11.62 (  $p= 0.0051$ ). The percentage of humeral head anterior to the transverse humeral line improved from an average of 32.35 percent to 41.70 percent ( $p = 0.0005$ ). Conclusion: Glenohumeral deformity remodels to some extent if muscle balancing is done at an early age.

**Abstract no.: 35542**

**CASE SERIES OF VARIOUS MODALITIES OF TREATMENT AND  
OUTCOME IN INTRA ARTICULAR CALCANEAL FRACTURE**

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introduction: calcaneum fracture is a very common trauma an Orthopaedic surgeon faces in his practice, though decision making in treatment as well as giving a good outcome to patient is always a challenge. if its a intra articular fracture or joint depression type its definitely require some form of surgical intervention for better outcome. in spite of various modern fixation materials there is chances of problems associated with surgical wound healing and prominent implant. materials: here in our case series we have selected 15 patients with isolated uni or bilateral calcaneum fracture having joint depression type injury who do not have significant medical or surgical co morbidities. Methods: patients have been operated with 1. lateral extensile approach ORIF with Sanders plate and bone grafting, 2. K wire fixation, 3. OR and fixation with cages and bone grafting. results: all fractures united over a period of 4 months, 4 patients having wound gaping, 5 patients having residual pain, 8 patients complaining of occasional swelling on weight bearing.

**Abstract no.: 35545**

**MINIMAL INVASIVE CALCANEAL OSTEOSYNTHESIS – A VIABLE OPTION**

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Introduction - Calcaneum is the largest and most frequently fractured tarsal bone accounting for 60% of tarsal injuries. Overview of the anatomy of calcaneum and the pathomechanics of fracture along with an understanding of the operative steps and intraoperative imaging is essential for good results through percutaneous techniques. Materials - 33 patients with closed displaced fracture calcaneum treated. Fractures > 2 weeks & with associated injuries were excluded. Clinical (Maryland Foot Score & VAS score) & radiological review done at regular intervals. Results - Mean age 36 years (range 22 – 58). Essex-Lopresti Classification - 15 (46%) Joint Depression Type and 13 (39%) Tongue Type, 2 mixed. Sander's Classification - 12 (37%) Type II and 6 (18%) Type III and 12 (36%) and Type IV. 3 cases - extra-articular. Mean 12th month follow - up, 10 patients - excellent (30%), 21 patients - good (64%) and 1 patient (3%) - fair & 1 patient (3%) - poor functional outcome (Maryland Foot Score). Conclusion - 1) Functional results – excellent to fair in 94% irrespective of type of fracture. 2) Results of joint depression type (Sander's III, IV) slightly inferior to tongue-type fractures (Sanders type II) of comparable severity but the anatomy of the calcaneum was fairly restored in both. 3) Anatomical restoration of joint depression is not the only criterion for good functional results; equal emphasis should be on gross anatomical restoration. 4) Although anatomical restoration is ideal but closed reduction with percutaneous fixation can provide satisfactory results.

**Abstract no.: 35547**

**LYTIC LESION IN TALAR NECK – UNUSUAL LOCATION FOR TUBERCULOSIS**

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Introduction – Incidence of extra-pulmonary tuberculosis is constantly on the rise even though the overall incidence of tuberculosis is showing a downward trend in almost all countries. Tuberculosis of the foot is very rare with <3% of all EPTB cases. Talus is very rarely involved with singular case reports available in the English literature. Materials – A fourteen year old boy presented with a progressively increasing painful swelling over the anterior aspect of the right ankle of 1 year duration. There was no history of weight loss or anorexia. The sequential radiographs showed absence of any lytic lesion in early period and later presence of a typical lytic lesion in the talar neck with a coke sequestrum inside it. The ESR was raised – 44 and a CT scan revealed the extent of the lytic lesion and sequestrum. Curettage of the lesion revealed typical granulomatous lesion along with caseous necrosis and epithelioid cell granuloma. Results – Lytic lesion in talus is extremely rare. The differential diagnosis include osteoclastoma, bone cyst, lymphoma, chondroblastoma and osteomyelitis. Tuberculosis in the talus is very uncommon with Dhillon reporting a single case of talar TB in a review of 74 cases. Coke sequestrum occurs due to partial infarction of the cancellous bone along with calcification. The lesion is pauci-bacillary usually yielding negative pus culture sensitivity making the diagnosis purely histo-pathological. Adequate ATT and immobilization can yield good result if the lesion is purely restricted to the bone without articular involvement.

**Abstract no.: 35549**

**PSYCHO-SOCIAL IMPLICATIONS OF AMPUTATIONS**

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Objective: To improve quality of life among subjects with crush injuries of extremities of various aetiology by salvage procedures. To prevent or minimize psycho-social derangement or implications of traumatized body parts and restoration of their useful function. Material: 20 year study observed in trauma of extremities with partial to near total vascular compromise. Method: Pre-operative and follow-up counselling of patient, attendants and employer. Primary debridement, stabilization, early skin cover and serial paraffin-gauge dressings improve outcome. Antibiotic cover with sequential cultures, physiotherapy and follow-up counselling matter. Facts / Figures: Sepsis a challenge. Males, hands, Grade II compound wounds, RTA dominate incidence. Contamination, delayed presentation, poor compliance and follow-up, poor nutritional status, anaemia, etc., dread salvage. Initial poor tissue perfusion is no indication for early decision to amputate / terminalize. Results: Crush injuries with compromised vascular status at the time of trauma but with possible primary closure, salvage of limbs and appendages was surprisingly possible. Cosmesis not a priority, but restoration of function, chance of livelihood are. Dexterity and confidence come with practice. Richer the patient, difficult to convince. Psycho-social depression more with early amputations than in revisions, much less in salvaged groups. Psycho-social depression is more in men, unmarried illiterate women. Women adapt better with rehabilitation. Conclusion: Even a nail lost with its bed is lost forever. If soft tissue cover on bony elements is achievable, an entire limb may survive and gain near normal function. When crush wounds remain aseptic a decision to amputate can wait.

**Abstract no.: 35557**

**EXETER TRAUMA STEM: EARLY RADIOGRAPHIC RESULTS**

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Exeter trauma stem is a polished surface, collarless and tapered cemented hemiarthroplasty femoral stem which has been recently introduced in the market for the management of fracture neck of femur. We conducted a retrospective study to investigate early radiographic results of these implants for intracapsular neck of femur fractures. Methods: We looked at the immediate post op radiographs of Exeter Trauma Stem implanted from July 2012 to August 2012. We assessed these radiographs for quality of cementation on the basis of Barrack's grading and Dorr's criteria. We also analysed the implant orientation. Results: A total number of 18 patients met the inclusion criteria including 5 males and 13 females with average age of 85.5 years. 50% of the post op radiographs show Barrack's grade A, 27.7% grade B, 16.6% grade C and 5.5% grade D cementation. 83.3% of the patients had neutral alignment of the implant. 16.6% had valgus alignment. None of the implants were inserted in varus position. Conclusion: Exeter trauma stem implantation can be improved with careful consideration of cementation techniques.

**Abstract no.: 35564**

**OSTEOID OSTEOMA OF THE TALUS: A NOVEL APPROACH THROUGH POSTERIOR ANKLE ARTHROSCOPY**

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Introduction: Osteoid osteoma is a common bone tumour accounting for up to 12% of benign lesions. In this article we report a posterior talar body osteoid osteoma excised through posterior ankle arthroscopy. Case Report: An 18 year old Caucasian male presented with a history of spontaneous onset posterior ankle pain. He reported no preceding history of trauma with symptoms exacerbated following sporting activity. On examination he was tender in the region of his flexor hallucis longus tendon and displayed a positive posterior ankle impingement test. Plain radiographs of the ankle and foot were normal. An MRI scan showed increased signal from the posterior talus on T2 weighted images. The CT scan (Figure 2 & 3) showed a well defined lesion within the posterior aspect of the talus measuring 4.5mm x 3mm suspicious of a simple cyst or an osteoid osteoma. He was noted to have an American Foot and Ankle score of 47 pre-operatively. The patient underwent arthroscopic excision using 2-portal posterior ankle arthroscopy. A 30 degree angled arthroscope was introduced using posteromedial and posterolateral portals. Areas of synovitis were excised and the FHL tendon retracted revealing a pink blush, characteristic of an osteoid osteoma, on the posterior medial elevation of the talus. The lesion was excised using an arthroscopic burr and shavings sent for histology. Conclusions: Current literature supports excision via posterior ankle arthroscopy as a safe technique. Its primary benefits being good visualisation with diagnosis and treatment of any co-existing pathologies.



**Abstract no.: 35566**

**RESULTS OF DISTAL LOCKING PLATES IN FRACTURES OF LOWER END RADIUS**

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**Background:** We evaluated the radiographic and functional results of volar locking plate for fixation of unstable distal radius fractures. **Methods:** This study included 50 patients, with mean age 37.72 years treated with volar locking plate for unstable distal radius fractures. Forty four (88%) patients had AO type C fractures and six (12%) patients had type B fractures. According to Frykman classification, most fractures (64%) were of type IV. Mode of injury was fall on outstretched hand in 29 (58%) patients and RTA in 21 (42%) patients. Dorsal and volar angulations were present in 41 (82%) and 9 (18%) patients respectively. Nineteen patients (38%) had disruption of the distal radio-ulnar joint. Bone grafts were used in 12 (24%) patients. **Results:** All fractures united with in mean of 6.2 weeks. Functional end results were assessed according to Lidstrom's criteria and Gartland and Werley scoring system. According to Lidstrom criteria 19 (38%) patients had excellent, 20 (40%) had good, 6 (12%) had fair and 5 (10%) had poor results. According to Gartland and Werley, 35 (70%) patients had excellent, 8 (16%) had good and 7 (14%) had fair results. One patient developed superficial infection, eight patients had painful wrist, and three patients developed Sudeck's dystrophy. **Conclusion:** Volar locking plate is an effective treatment in the anatomical and functional restoration of unstable distal radius fractures.

**Abstract no.: 35570**

**STUDY OF THE FUNCTIONAL OUTCOMES OF VARIOUS RECONSTRUCTIONS IN GIANT CELL TUMOUR FOR DEFECTS AROUND THE KNEE JOINT WITH NO SUBCHONDRAL BONE**

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Introduction: Giant cell tumour (Gct) represents approximately 5% of all primary bone tumours. Gcts are benign tumours with potential for aggressive behavior. Optimal treatment for peri-articular lesions has remained a controversy. No criteria for joint salvage versus wide resection exist. The purpose of this study was to evaluate the functional and radiological outcome of reconstruction in Giant cell tumour around the knee with no subchondral bone. Material and methods: Patients with histological proven GCT of bone were managed/followed up between September 2010 and September 2012. Patients were managed with technique of extensive curettage & various reconstructions. Patients were selected for the procedure based on tumour involving 50% or greater of the subchondral bone immediately adjacent to the articular cartilage of the joint. Functional results were assessed using the 30 points Musculoskeletal Tumour Society (Msts) grading system. Result: 19 patients had primary disease and 7 patients were recurrence cases. 12 male and 14 female patients. Mean duration of follow-up after operative treatment was 49.04 months. Mean Msts score was  $95.51 \pm 5.88$ ; mean functional score in patients who had radiological incongruent joints was  $94.85\% \pm 5.65$ . Conclusion: The treatment of Gct was directed towards local control without sacrificing joint function. Radiological poor result did not correlate with clinically poor outcomes. Long existing incongruity, which was not corrected, was compatible with good function. Gct around the knee with no residual bone can be managed with various reconstructive methods and with good functional score and is an approach that preserves anatomy of bone in lieu of resection.

**Abstract no.: 35571**

**PIRWANI'S TECHNIQUE FOR TIBIO-TARSAL ARTHRODESIS AFTER LOSS OF CALCANIUM**

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**OBJECTIVES:**To study the results of Pirwani's technique for tibia-tarsal arthrodesis after calcaneal loss to prevent amputations. **PATIENTS & METHODS:**Total number of patients=12, Age=20 - 35 years, Male/Female Ratio=All males, Mean Follow up=14 months **PROCEDURE:** After resuscitation of the patients of calcaneal loss, tube to tube AO external fixator was applied to foot and tibia. Multiple debridements were done until the wound was granulating. Gradual translation of foot was done by adjusting tube to tube clamps, until tibia comes immediately proximal to the tarsal bones. Tibio-tarsal arthrodesis was done after denuding the surfaces. Stabilization was done by cross K wires and through the foot straight to tibia. Wound was covered with SSG or local flap as needed. Non weight bearing walking was encouraged till union, about 3 months. K wires were removed after union and partial weight bearing was instituted. Fixator was removed after one month and Slab support was given for 2 weeks. Full weight bearing was done with AFO. **RESULTS:**Union achieved in all cases at the time of frame removal and all the patients were walking with AFO without pain **CONCLUSION:**This is a highly productive; cost effective and patients friendly technique providing excellent results preventing the below knee amputations.

**Abstract no.: 35572**

**PERCUTANEOUS HARVESTING OF FIBULA FOR NON VASCULARISED FIBULA GRAFTING IN CHILDREN**

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Introduction: Non vascularised fibula grafting is used for structural and non structural bone grafting in children. The traditional method for harvesting involves a longitudinal incision along the length of fibula needed. We present here a new technique for percutaneous harvesting of fibula for non vascularised fibula grafting in children. Material and methods: The method was used in 18 children with age group 2 years to 12 years. The indications included gap non union of femur (3), gap non union of ulna (3), congenital pseudoarthrosis of tibia (4), Foot stabilization (6), acetabuloplasty (2). Results: The surgical time for taking the fibula skin to skin varied from 15 min to 35 min (average 23 min). All the wounds healed with primary intension. No patient had any neurological or vascular deficit. One patient had weakness of EHL which improved wit time. No patient had pain or ankle instability. The total length of scar was 1.8 to 4.5 cm (average 3 cm). Conclusion: The advantage of the method include cosmesis, reduced time and material for suturing and earlier weight bearing and return to function due to preservation of the soft tissue envelop and better regeneration potential for the fibula. The method is safe and does not need specialized instruments and is reproducible.

**Abstract no.: 35579**

**WELLBEING IN ELDERLY WITH ANNUAL ZOLEDRONIC ACID  
INTRAVENOUS INJECTIONS AS TREATMENT FOR OSTEOPOROSIS**

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Introduction: Sense of wellbeing and improvement in quality of life in the elderly by administering annual doses of intravenous Zoledronic Acid. Matrial: A three year study of 69 elderly subjects ( 28 Males, 41 Females), T Scores -2.5 to – 3.5. Fatigue pain in shins / low back. Supplimentation of Cacium Citrate 500mg daily for 90 to 150 days. Method:Intra Venous injections of Zoledronic Acid 5mg given in intervals of 11 months to 13 months. Improvement of T Scores in 3 to 6 months and subsequent fall in 9 to 11 months noted. Result: All the patients had better quality of life for 11 to 13 months from 15th to 25th day after therapy. One among the 69 did not improve with respect to T Score but, expressed less intense pain in low back and knees for 8 months after each annual dose. Conclusion: Need of long term follow-up to ascertain / attribute any complications / side effects. Unlike oral forms, Intravenous Zoledronic Acid did not give rise to Gasrtic / Duodinal irritation. Good hydration with consumption of copious oral fluids from one day prior to three days after the dose reduced poly osteo-myalgia, significantly. Most patients reported back with relapse of mild to moderate severity of previous pain in the 11th month after the previous dose every year. Relief of severity of pain, improved social life, enhanced physical activity brought confidence in personality, in general. Women had comparatively better quality of life and required subsequent doses less often.

**Abstract no.: 35586**

**ANTERIOR AND POSTERIOR STABILIZATION OF SPINE BY SINGLE POSTERIOR INCISION IN CASES OF UNSTABLE THORACOLUMBAR BURST FRACTURES.**

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Axial load of the anterior and middle column of the spine can lead to a burst fracture in which the vertebral body fragments shift into the spinal canal causing neurologic complications and kyphotic deformity. These fractures represent 10% to 20% of all spine injuries at or near the thoracolumbar junction. The management of these fractures remains controversial. The goals of operative treatment are fracture reduction, fixation and decompression of neural canal which can be carried out via an anterior, posterior, or combined anterior- posterior surgery. The combined anterior and posterior instrumentation provides the most stable repair. However, the use of both approaches on a trauma patient may increase morbidity. Stabilization of three columns through only one approach can provide an effective outcome. We treated ten patients of thoracolumbar burst fracture with McCormack's score > 6 by anterior cage placement and posterior pedicle screw fixation through the single posterior approach. Five out of ten patients improved neurologically, and none deteriorated. The mean blood loss was 1885ml and the mean operative time was 282 minutes. The mean pre operative kyphotic angle was 19 degrees. The mean post operative kyphotic angle -0.6 degrees after surgery.

**Abstract no.: 35605**

**INTRAOPERATIVE EVALUATION OF THE EFFECT OF VARIOUS MEDICATIONS ON THE MICROCIRCULATION OF THE NERVE ROOT IN PATIENTS WITH DEGENERATIVE DISK DISEASE**

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In this study were included 87 adults with DDD with radiculopathy. During the standart discectomy the microcirculation was measured from the nerve root using laser Doppler flowmetry. The patients were divided in 2 groups: I – control group (56) in which measurements were taken intraoperatively before and after root decompression without any additional medications injected. 2nd group (31) measurements were taken before root decompression, then the patients were divided in 3 subgroups depending on intravenous injection of one of medications: group 2E (14) – Euphyllin 2.4%-10,0; group 2D (11) - Dexamethasone 4 mg and 2R group (6) – Dextrane (Rheopolyglucine) 30000ME. Finally microcirculation was assessed after root decompression. Quantitative evaluation was assessed as Microcirculation Rate (MR) in perfusion units (PU). Qualitative evaluation was assessed using means of standardized amplitude of neurogenic sympathetic (An, 0,02-0,046Hz), myogenic (Am, 0,07-0,15Hz), respiratory (Ar, 0,15-0,4Hz) and cardiac (Ac, 0,8-1,6Hz) rhythms. Results. In 1st and 2nd groups MR before decompression was 34 PU, in 2E group – 32 PU, in 2D – 40 PU in 2R – 32 PU. After injection of medication in 2nd group MR increased in all three subgroups: 2E – 33 PU, in 2D – 43 PU, and in 2R – 36 PU. After nerve root decompression MR was 36 PU in 1st group and in 2nd group increased: 2E – up to 40 PU, 2D – 47 PU and in 2R – 44 PU. All the medications increase the MR, mostly - Rheopolyglucin.

**Abstract no.: 35613**

**TANTALUM CONES AND MANAGING MAJOR OSTEOLYSIS IN REVISION KNEE ARTHROPLASTY - MID-TERM RESULTS**

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Introduction: Management of large osteolytic defects in revision total knee arthroplasty remains a challenge. The aim of this study was to demonstrate the use of Tantalum cones in management of major osteolysis in revision knee arthroplasty and their midterm results. Methods: In this prospective study, 34 (30 Tibial, 4 Femoral) Trabecular metal cones were used in 32 patients along with Rotating hinged knee prosthesis (Zimmer plc) to address combined major osteolysis of proximal tibia and distal femur with associated ligamentous instability. The osteolytic defects were classified according to Anderson Orthopaedic Research Institute classification and tantalum cones were used mainly in type II and III defects. Results: Mean age was 72 years with 18 men and 14 women. At average follow up of 48 months, the mean Oxford scores improved from 12.90 to 30.40 (P value < 0.001), American Knee society scores improved from 33.15 to 75.28 (P value < 0.001), with mean functional range of movement ( 2.53°- 91.09°- P value < 0.55). No radiolucent lines suggestive of loosening were seen around the trabecular metal cones and all the radiographs showed good osteo-integration with no collapse. Complications included 2 reinfections, 2 deaths (unrelated causes), 1 femoral stem-disengagement, 2 non progressive tibial and femoral stem radiolucent lines. Conclusions : The tantalum cones provide satisfactory way of managing major osteolytic defects in knee revision for good functional outcome and pain relief. This is an alternative method for managing large bone defects in revision knee arthroplasty and have shown promising mid-term results.



**Abstract no.: 35615**

**LUXATIO ERECTA ASSOCIATED INJURIES**

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Introduction: Inferior shoulder dislocation, or luxatio erecta, is a rare kind of shoulder dislocation, usually caused by hyperabduction and often associated with fractures of the greater tuberosity, rotator cuff injuries or some degree of neurologic compromise. Fewer than 150 patients have been reported in the literature. Methods: From 1992 to 2012 all patients with inferior shoulder dislocation treated at our institution were included in this study. Demographic data, injury mechanism, type of reduction, duration of initial immobilization and associated injuries were retrospectively entered into a database for evaluation. Two age groups were formed (<35a/>35a) to find possible age related differences in the pattern of associated injuries. Results: Within the study period 17 patients (6 females/11 males) with luxatio erecta were treated at our institution. In patients younger than 35 years (7 patients) we found concurrent fractures about the shoulder in 3 cases, neurologic compromise in 2 cases and a supraspinatus tendon tear in one case. Patients older than 35 years (10 patients) suffering an inferior shoulder dislocation, additionally sustained a concurrent fracture about the shoulder in 6 cases, neurologic compromise in 3 cases and a rotator cuff injury in one case. However, all neurologic deficits recovered spontaneously within the first 4 weeks. Conclusion: The most common injuries associated with luxatio erecta are concurrent fractures about the shoulder, neurologic compromise and injuries to the rotator cuff. As far as one can tell from such a small case series, there seem to be no age related differences regarding associated injuries.

**Abstract no.: 35617**

**ROTATING HINGED KNEES IN COMPLEX REVISIONS - INCREASING TRENDS AND ENCOURAGING RESULTS.**

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Introduction: The aim of this study was to evaluate the clinical and radiological outcomes of a newer generation Rotating hinge knee (RHK) in patients of revision knee arthroplasty with major osteolysis and ligamentous instabilities. Methods: In this prospective study, we include 108 patients undergoing Revision knee arthroplasty using modern RHK prosthesis (Zimmer Inc). Indications for revision were sepsis (39), aseptic loosening (32), instability (19), periprosthetic fractures (04), failed Unicompartmental knees with major osteolysis (04), mal-alignment (6) and unexplained painful knees (04). We used 30 tibial and 4 femoral trabecular metal cones (Zimmer plc) in type 2 and type 3 AORI defects to address combined bone loss and collateral instability along with RHK's. The mean age of patients was 76 years with mean follow up of 58 months. Results: Mean Oxford scores improved from 21 to 30 (p value - 0.006) and mean AKSS improved from 32 to 76 (p value 0.001). Radiographic analysis showed non progressive radiolucent lines around tibial stems and femoral stems in 2 patients (1 re-revised) but no subsidence of implant was noticed in any patient. Complications included 4 deaths from unrelated causes, 1 A/K amputation for recurrent infection, 5 reinfections (3 re-revised, 2 suppressive antibiotics), 1 periprosthetic fracture around tibia and 1 femoral stem disengagement. Conclusions: With advent of modern RHK devices, there appears to be place for them in revision knee arthroplasty especially in major bone loss and gross ligamentous instability. They seem to have better functional outcome compared to the older designs and previous quoted studies in literature.

**Abstract no.: 35623**

**ATYPICAL CASES OF TUBERCULOSIS IN EXTREMITIES IN ENDEMIC AREA**

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Tubercular bacilli has lived with mankind since time immemorial World has nearly 30 million people suffering from tuberculosis According to current estimate of WHO, TB kills 3 million people a year worldwide. India alone has got 1/5th of the total world population of TB patients. Out of these, 1% to 3% has involvement of skeletal system. Although TB involvement in spine is common but TB involving hand and foot are also there which is not very common. T.B Wrist -My patient came with complaints of pain (minimal) and swelling over volar aspect of right wrist since 6 months on 06/12/11. No neurological deficit, no deformity. Was managed with excision of ganglion on 10-12-11. The excised cyst was sent for histopathology suggestive of ganglionic cyst. At present the patient presented with complaints of discharging sinus through the surgical scar over right hand since 4-5 months. The discharge was whitish and caseous. USG- Right hand and wrist and forearm - Features suggestive of sub-periosteal collection/ganglion MRI right wrist –Features suggestive of infective pathology? Osteomyelitis. Patient started on AKT and is responding well to treatment. T.B Foot - Patient came with complaints of ulcer, pain and discharge from 2nd toe right foot on 08/11/11 since 3½ years. No history of fever, weight loss. Patient took AKT for 11 months. No neurological deficit, no deformity. Was managed with disarticulation 2nd toe right side from metatarso-phalangeal joint on 18/11/11 and debridement of wound on 28/11/11 and tissue was sent for histopathology and FNAC.

**Abstract no.: 35624**

**COMPARISON OF FEMORAL OFFSET AND FUNCTIONAL RESULTS WITH THE HEALTHY OTHER PART ON SHORT FEMORAL HEAD IN SINGLE SIDED THA CASES**

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Introduction : In this study, unilateral total hip arthroplasty has been applied to the femoral head to investigate the appropriateness of patients who were treated according to normal anatomy. Methods:Between January 2011 and March 2012, 69 patients (47 females,22 males) with average age of 55.6(23-84),underwent THA. Patient's post-operative follow-up period took 18.3 (12-24) months. The quality of life forms 'SF-36' were used in patients to see preoperative and postoperative functional evaluation. Postoperative radiological imaging of the A-P pelvis radiograph, and the length radiographs were taken. According to the method of Ranawat, hip rotation center, vertical and horizontal femoral offset , ischiofemoral distance and differences in limb length were measured in the radiographs. Results:According to the form SF-36 'Quality of Life', pre-and postoperative physical functioning scores respectively were, 16.3±15.2 / 94.5±9.5, and the pain score was 22.7±23.6/81.3±17.1. Compared to the undamaged part , the length discrepancy after the surgery was an average of 2.1 mm (0-5mm). The Acetabular component was placed in the true acetabulum in all hips, as Ranawat described. Short femoral head was used in all cases. After the operation, the average horizontal offset of the side that had the operation compared to the normal part was 41.2 mm (27 – 52 mm), and 39. 3 (27 -51 mm), average ischiofemoral distance was an average of 20.37 (8.4 -32.5), and 18.7 (7.8 -32.1 ).

**Abstract no.: 35626**

**ASSOCIATION BETWEEN CLINICAL FEATURES AND RADIOGRAPHIC GRADING IN OSTEOARTHRITIS OF THE KNEE**

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Studies have suggested that the symptoms of knee osteoarthritis (OA) are rather weakly associated with radiographic findings and vice versa. Our objectives were to identify estimates of the prevalence of radiographic knee OA in adults with knee pain and prevalence of radiographic knee OA in asymptomatic adults above age of 50 years, and determine the association of radiographic osteoarthritis and symptoms, and if variation in demographic factors influence these estimates. The study population chosen includes the patients who reported in our OPD in our institute with knee pain and asymptomatic population above 50 years age who reported for some other cause. They were subjected to standard questionnaire which includes questions related to demographic factors as well as symptoms and functional scoring. Modified Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) is used for functional scoring and Kellgren and Lawrence grading system for radiologic grading in the population and the results are discussed in reference to symptomatic vs asymptomatic groups, age, sex, height, occupation, socioeconomic status e.t.c.,

**Abstract no.: 35629**

**INTERFRAGMENTAL APPROACH TO IMPLEMENTATION OF TOTAL HIP ARTHROPLASTY OF TROCHANTERIC FRACTURE WITH PATIENTS OVER SIXTY YEARS**

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Introduction: In trochanteric fractures, the process with the option on interfragmentary approach in THA as treatment of the fractures (in literature), assessing the impact of complications and functional outcome after treatment. Methods: Between January 2011 and January 2013, 41 patients (14 females, 27 males) with average age of 79,8 (63-96), underwent THA. The broken parts : 21 left hips, 20 right hips. Fracture type: Trochanteric Fracture. Results: The average hospital length of stay: 5.13 days Mobilization time: First day after the surgery Infection rate: 0% Dislocation rate: 0.41% Revision rate: 0.41% Death rate: 0.41% Time between fracture and the surgery: Average of 1.7 days. In our studies, a different surgical technique was applied in posterior approach to the hip replacements in treatment of trochanteric fractures in elderly patients. Without compromising the integrity of the abductor and vastus lateralis muscle in patients the interfragmentary approach to patients with trochanteric fractures has shortened the operation time, caused less blood loss and less infection rate. The functional development of the first day after surgery plays an important role, which is supported by the integrity of the muscles at hip joint stability, dislocation and revision rates were significantly reduced when compared with the literature which is an indicative of the success of the surgical technique.

**Abstract no.: 35631**

**“DOES SURGICAL FIXATION OF LATERAL EPICONDYLE FRACTURE WITH CAPITELLAR FRACTURE PREVENT CHRONIC POSTEROLATERAL ROTATORY INSTABILITY (PLRI) OF ELBOW?”**

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Introduction: Lateral Epicondyle, Capitellum, Radial Head, Lateral Collateral Ligament Complex forms important bony and ligamentous constraints providing stability to elbow joint. Lateral epicondyle fracture with fracture extending into capitellum may occur as isolated injury or in association elbow dislocation by fall on outstretched hand. Mechanism of injury depends on flexion of elbow, varus or valgus stress and axial loading of the elbow joint at the time of injury. Material and methods: We report 10 cases of lateral epicondyle fracture with fracture extending to capitellum. Six patients had these fractures associated with elbow dislocation and four patients had isolated injury. Closed reduction of elbow was done as emergency procedure. Preoperative CT scan was done to study fracture geometry. Through Kocher's lateral approach, capitellum and comminuted lateral epicondyle fracture was fixed by 2.4mm screws and suture anchors respectively. Postoperatively elbow was splinted for 3-4 weeks, then gentle range of movement exercise was started. Patients were advised to avoid lifting heavy weights for 12 weeks. Result: Average follow up was 18 months. All patients achieved full range of movements and bony union by 8 weeks. Average Mayo Elbow Performance Score was 97%. Clinical tests for Posterolateral Rotatory Instability (PLRI) like Lateral Pivot Shift Apprehension Test, Posterolateral Rotatory Drawer Test, Table Top Relocation Test, Active Floor Push up Test Sign, Chair Sign were negative in all cases at the time of follow up. Conclusion: Lateral epicondyle fracture with capitellar fracture requires surgical fixation to prevent Chronic PLRI and gives excellent clinical outcome.

**Abstract no.: 35633**

**PREVALENCE OF CRITICAL GLENOID BONE LOSS IN CASES OF ANTERIOR INSTABILITY OF SHOULDER – A PROSPECTIVE ANALYSIS OF 200 CASES .**

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AIM: The purpose of our study was to determine the prevalence of “critical ” glenoid bone loss in anterior dislocation of shoulder .**MATERIALS AND METHODS:** Two hundred patients with single or recurrent anterior shoulder instability were evaluated using pre-operative 3D CT .The prevalence and severity of the Glenoid bone loss were assessed and quantified using Glenoid Index method. **RESULTS:** Glenoid bone loss was present in 11(40.5%) of 27 patients with single episode of anterior dislocation and 150(86.7%)out of 173 patients with recurrent dislocation of shoulder. 73(36.5%) patients had < 10% ,50(25%)patients had in between 10% to 20 %,and 38(19%) patients had > 20% glenoid bone loss.**CONCLUSION:** Critical Glenoid bone loss is not uncommon in anterior dislocation of shoulder. Pre-operative 3D CT SCAN to estimate the glenoid bone loss is crucial to guide the surgeon in selecting treatment options, which range from isolated Bankart repair to various means of bony reconstruction.



**Abstract no.: 35634**

**ANTEGRADE JOINT SPARING INTRAMEDULLARY WIRING FOR SHAFT FRACTURES OF MIDDLE PHALANX**

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We included 18 extra-articular transverse or short oblique shaft fractures of middle phalanx in 17 patients. There is currently no English literature available on the use of joint-sparing antegrade K wire fixation for middle phalangeal fractures. All fractures in this series, were treated with closed reduction and internal fixation with antegrade joint-sparing intramedullary K wires completely sparing both proximal and distal interphalangeal joints. In all the patients, the interphalangeal joints were mobilized post-operatively after two weeks of splinting. The patients had a minimum follow-up of one year (1-10 years). The objective outcome was assessed at six months by calculating Total Active range of Motion (TAM) which was calculated by adding the active flexion at the metacarpophalangeal, proximal and distal interphalangeal joints and subtracting the sum of the extension deficit at all these joints and compared to normal range of digital motion (260°). The TAM score was graded as excellent, good, fair, or poor if it was greater than 240°, 220–240°, 180–219° or less than 180°, respectively. At six months, 16 cases showed excellent result and two cases showed good results. One patient with an open middle phalanx fracture with extensor tendon injury had a good outcome at six months. The other patient with associated flexor tendon injury showed excellent functional outcome. Thus, antegrade intramedullary wiring for extra-articular transverse and short oblique shaft fracture of middle phalanx is simple, safe and joint-sparing and provides enough fracture stability for early rehabilitation and functional recovery with excellent functional outcome.

**Abstract no.: 35637**

**PLATELET RICH PLASMA INJECTIONS FOR TREATING PLANTAR FASCIITIS- A RANDOMIZED CONTROLLED CLINICAL TRIAL**

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Heel pain due to plantar fasciitis is one of the commonest reasons for visit to orthopedics surgeons. Intra-lesional injection of Platelet Rich Plasma is an innovating concept which is based upon accelerated healing due to the presence of large number of growth factors in it. A prospective double blind randomized controlled clinical trial was conducted including 28 cases (male=10, female=18) of acute plantar fasciitis with a mean age of 37 years (range=32-50 years). Two randomized groups A and B, each having 14 cases with 5 male and 9 female cases were created. Group A received only stretching exercises and anti-inflammatory medications while group B in addition also received one intra-lesional injection of Platelet Rich Plasma. Follow-up was done at 2 weekly intervals for a total period of 6 weeks. Using VAS, initial average pain scores for Group A and B were 7.1 and 7.3, respectively (t value=0.26, p value=0.82, insignificant). At 6 weeks follow-up visit, the average pain scores for group A and B were 6.1 and 2.1, respectively (t value=13.79, p value=<0.001, highly significant). Initial average Foot and Ankle Disability Index score for group A and B were 51.6 and 51.9, respectively (t value=0.46, p value=0.64, insignificant). At 6 weeks follow-up visit, the average scores for group A and B were 57.34 and 81.39, respectively (t value=52.28, p value=<0.001, highly significant). Thus, it was concluded that use of platelet rich plasma can provide consistent and significant relief from pain and improve quality of life of patients.

**Abstract no.: 35643**

**FEMORAL ARTERY PSEUDOANEURYSM DUE TO 'SPIKE' OF LESSER TROCHANTER FRAGMENT: AN UNUSUAL COMPLICATION OF AN INTERTROCHANTERIC FRACTURE**

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False aneurysm of the femoral artery is a rare complication of an intertrochanteric fracture. Most of these injuries are due to iatrogenic trauma or the trauma itself and rarely by dislocated bone fragments. According to case reports from the literature, false aneurysms and laceration of the femoral artery caused by dislocated lesser trochanter fracture fragments are rare. A 72 year old male presented to our institution with history of trivial fall and complains of pain and swelling in the left hip region. On examination a tense pulsatile swelling was present in the proximal thigh. Radiographs revealed an A2 type intertrochanteric fracture. CT angiograph revealed pseudoaneurysm of the femoral artery caused by the spike of the lesser trochanter fragment. A vascular stent (ANGIOMED) size 7mm by 60 mm was placed in the superficial femoral artery by the interventional radiologist on an urgent basis. Five days later, the patient was operated upon and the lesser trochanter fragment excised using a separate anterior incision followed by fixation of the intertrochanter fracture using Dynamic hip screw. A potentially devastating complication was treated successfully. The swelling over the proximal thigh subsided and there were no stent related complications at 1 YEAR follow up. A false aneurysm due to a dislocated lesser trochanter after intertrochanteric femur fracture is rare and difficult to diagnose. Surgeons must be aware of this complication and have a high index of suspicion especially in the presence of unexplained anemia and a localized hematoma in the groin.

**Abstract no.: 35644**

**MANAGEMENT OF A NEGLECTED FEMORAL NECK FRACTURE IN A POLIOTIC LIMB WITH MESH CAGE AND BONE GRAFT: A CASE REPORT**

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Management of neglected femoral neck fractures in young adults ranges from internal fixation alone to internal fixation with non-vascularised grafts, to fixation with vascularised grafts, or internal fixation combined with valgus osteotomy. Surgical management of these fractures is a challenge because of osteoporotic, hypoplastic bones and poor muscle balance. A 22 year old female presented with pain in L hip and inability to bear weight over left lower limb for 3 months. Her left lower limb had been affected with poliomyelitis since childhood. Radiographs revealed a subcapital femoral neck fracture with resorption of the neck and hypoplastic hemipelvis and femur. Taking into account the age of the patient and significant resorption of the femoral neck, a decision was made to treat the femoral neck fracture with cannulated cancellous screws (CCS) augmented with a cage and bone graft. The patient was operated in the prone position using the posterolateral approach. The fracture was exposed and ends freshened. A mesh cage 3cm in size was positioned between the fracture ends and compressed with three CCS on sides of the cage. The purpose of using the cage was to maintain the length of the femoral neck. At 2 year follow up the fracture has united and the patient is ambulatory. Although mesh cage has been used to treat humeral as well as tibial non unions we believe this is the first case where a cage has been used to treat a neglected femoral neck fracture.

**Abstract no.: 35646**

**ACL RECONSTRUCTION: AN OUTCOME STUDY**

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**Aim:** This study aimed to assess and quantify improvement in 'Patient Assessed Outcome' in ACL reconstruction patients. **Methods:** This is a prospective review of all patients (NHS and private) undergoing ACL reconstruction (hamstrings graft) under 1 surgical team over 3 years (2009-2012). The Tegner-Lysholm (TL) scoring system was used pre and post operatively to measure outcome. The study included 38 patients with a mean age of 29 years and a Male:Female ratio of 33:5. **Results:** Pre-operative scores were available in 38/38 (100%) patients and postoperative in 34/38 (89.5%). The maximum achievable score was 100. The mean pre score was 71.3 (range 32-95). The mean post score was 93.4 (range 69-100) with a mean follow up of 6 months. In 4/38 patients with no post-operative score available, 2/4 were discharged at 6 months with no reported problems and 1/4 did not attend follow up appointment. 1/4 patient was referred to a colleague knee surgeon due to tibial tunnel screw malposition. Complications (3/38) included the above patient and 1 patient had graft rupture at 1 year post surgery due to a football injury. A third patient had persistent pain at 1 year post surgery due to medial compartment osteoarthritis confirmed on MR scan. None of the patients had a worse score post surgery. **Conclusion:** ACL reconstruction with hamstrings graft in young adults has good outcome. T-L score uses patient's subjective assessment of symptoms and function to quantify outcome and has been shown in literature to have robust association with patient satisfaction.

**Abstract no.: 35647**

**FLIPPING OF THE BUTTON IN THE SUBSTANCE OF THE VASTUS LATERALIS: A POTENTIALLY CORRECTABLE COMPLICATION USING THE TIGHTROPE RT**

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The ACL TightRope RT (Arthrex, Naples, FL) is a recently introduced fixation device. The adjustable graft loop allows the surgeon some freedom in terms of the length of the femoral socket, eliminates the need for bothersome intraoperative calculations for selecting loop length, and provides the possibility of tensioning the graft even after graft fixation. However, the device can be associated with the same complications that have been described with EndoButton (Smith & Nephew Endoscopy, Andover, MA) fixation including the possibility of flipping of the button in the substance of the vastus lateralis. A 45 year old male underwent ACL reconstruction using ST/G graft. The femoral fixation was done using tightrope rt. The post operative AP radiograph revealed the button to be 1cm lateral to the femoral cortex presumably due to soft tissue interposition. The patient was taken to ot next day, a lateral incision placed over the distal thigh. After incising the deep fascia, the button was seen lying in the substance of the vastus lateralis. The remaining cut threads of the tight rope were tightened and the button was pushed back onto the femoral cortex. Flipping of the button in the substance of the vastus lateralis is a rare but known complication of the endobutton as well as the tightrope. It can cause necrosis of the underlying vastus lateralis as well as ACL laxity. Because the tightrope as the provision for tightening after flipping, this feature can be used to correct this complication.

**Abstract no.: 35654**

**AN ANATOMICAL POSITION-RELATED STUDY OF THE SCREWS WITH SACRAL PLATE IN LUMBOSACRAL FIXATION -USING CADAVERS-**

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Stabilization of the spine using the pedicle as fixation is popular method for treatment of spinal deformities. Sacral plate is one of a choice for Lumbo-sacral fixation. Meanwhile, Anterior cortical penetration of screws hold a certain danger of L4 root and L5 root injury. We investigated the anatomical proximity between nerve structures and tip of second screw in first sacral vertebra(S1) and the risk of nerve root injury with sacral plate system using cadavers. The COLORADO2™ sacral plate were used to 14 human cadavers. After the S1 pedicles are targeted, a sacral plate is prepared as close as possible to the sacral plateau and positioned. Then S1 screw was inserted from recommended position at 5, 10, 15 convergent degree inclined with respect to the sagittal axis, respectively. After that, K-wire was inserted as sub S1 screw which is angled cephalad and laterally through the plate towards the sacral alae. The distance to nerve roots was measured from the tip of K-wire in the surface parallel to the S1 bilaterally. Latitudinal measurement was performed and the anatomical risk of nerve root injury was assessed. Although, there is no risk of L4 and L5 injury by k-wire at 5°angled insertion of S1 screw, L4 and L5 nerve injury was observed in 7.1% and 7.1%, respectively at 10°angled insertion, in 17.9% and 17.9%, respectively at 15°angled insertion. These results suggest that the risk of nerve root injury by sub S1 screw will be increased by insertion angle of S1 screw with sacral plate.

**Abstract no.: 35658**

**HEPARANASE LEVEL AND PROCOAGULANT ACTIVITY IN ORTHOPEDIC SURGERY PATIENTS RECEIVING PROPHYLACTIC DOSE OF ENOXAPARIN**

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Background: Hip and knee surgeries are followed by a hypercoagulable state. Heparanase is implicated in inflammation, coagulation activation and angiogenesis. Recently, heparanase was shown to directly interact with tissue factor (TF) and enhance factor Xa generation. In addition, an assay assessing heparanase procoagulant activity has been lately developed. In the present study heparanase level and procoagulant activity in patients undergoing orthopedic surgery were assessed. Methods: Fifty orthopedic patients; 31 patients underwent hip surgery and 19 had knee operation were included. 15 individuals suffered from traumatic hip fractures and 35 had osteoarthritis. All received a prophylactic dose of enoxaparin starting 6-8 hours post operation and lasting for 5 weeks. Plasma samples were drawn preoperatively and at one hour, one week and one month post operation. Samples were tested for heparanase levels by ELISA and TF/heparanase complex activity, TF activity, heparanase procoagulant activity, factor Xa and thrombin levels using chromogenic substrates. Results: Heparanase levels were significantly higher one hour and one week post operatively compared to preoperative levels ( $p < 0.05$ ,  $p < 0.005$ , respectively). The most dramatic changes were observed in heparanase procoagulant activity reaching a 2 fold increase one week postoperatively and 1.7 fold increase one month after surgery ( $p < 0.0001$ ,  $p < 0.0001$ , respectively). Factor Xa and thrombin Levels did not significantly change. Conclusions: Heparanase is involved in coagulation activation of orthopedic surgery patients. Heparanase procoagulant activity is highest one week postoperatively and remains high one month after operation. Considering extending prophylactic anticoagulant therapy or evaluating heparanase procoagulant activity may potentially prevent late thrombotic events.



**Abstract no.: 35659**

**“LATERAL FACETECTOMY : TO RELIEVE ANTEROLATERAL PATELLAR PAIN-TO DO OR NOT TO DO?”**

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**PURPOSE:** Midterm Functional and Radiological Outcomes of lateral facetectomy with soft tissue correction. **METHOD:** Prospective data of single surgeon series from Nov 2007-Nov 2012 of all patients who underwent a lateral facetectomy with soft tissue reconstruction operation. All patients were seen in a research clinic at final follow up. Radiographs were performed scores were completed by patients. **RESULTS:** A total of 40 patients, 10:25 M:F. 4 were bilateral. Median age 48 yrs(range 20 -65). 37 had PF (OA), 3 had patellar maltracking pain. Median pre and post op scores with ranges were as follows, Lyscholm 42(10-64) to 60 (13-97). SF-12 41(22-56) to 30(16-54). Kujala 42(30-72) to 56(16-88) Bartlett 12(4-22) to 11.5(8-30). Median patellar tilt angles on skyline radiographs pre- post op were 13.520(8.450-25.220) to 13.50(6.450-22.50) and at final xrays's were 13.1650(80-26.350). The Median gap in the lateral joint space pre, post and final follow up were, 3.5mm(0-5.48mm) , 4.1mm(0-6.52mm) , 3.51mm(0-5.21mm) . ROM was from 80(50-200) of FFD to 900(780-1100) flexion. Clarke's was positive in 18 and tilt in 20. 8 had scar pain. 6 were converted to PFR, 1to TKR. All but 5 patients were not satisfied with the procedure. **CONCLUSION:** Lateral facetectomy with soft tissue reconstruction operation, in our hands have a poor patient satisfaction and functional outcome results at early to midterm follow up . There is no statistically significant difference noted in the radiological or functional scores. The operation may provide immediate post op relief. The outcomes however are not sustained and remain unsatisfactory.

**Abstract no.: 35666**

**ANTERIOR CRUCIATE LIGAMENT STUDY: EARLY RESULTS OF A SINGLE CENTRE STUDY INTO THE RADIOLOGICAL AND FUNCTIONAL OUTCOMES OF THE TIGHT ROPE ACL RECONSTRUCTION.**

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**AIM:** To report the early results of clinical and functional outcome scores following a new translateral approach to ACL reconstruction using a tight rope and flip cutter. **MATERIALS AND METHOD:** 50 patients were selected from Welsh Knee Registry database and prospectively followed from 4/2012 to 12/2012. Questionnaires with outcome scores were filled pre and at final follow up. **RESULTS:** 12 F and 38 M. Median 28yrs (range 17-52). All underwent ACL reconstruction using a single Quadrupled semitendinous graft. 46 were sport injuries. The average time to surgery was 13 months (range 3-52). Median Pre and Post op scores were, Lysholm scores 55(range 26-75) , 74(range 56-95), SF12 30( range16-44) to 31.5(range 13-56), Barlett 19(range 9-30) to 16.5(range 9-28), Kujala 59.5( range 43-84) to 70(18-98). Median tourniquet time was 60min (Range 36-130). The IKCD examination at final follow up changed from C / D to A/B. single leg hop test changed from C/D to A/B.. There were 3 intraoperative complications. In one case the button flipped and was stuck in the bone. In 2 cases flip cutter jammed . There was one post op DVT . **CONCLUSION:** In our experience the translateral approach is a novel but effective technique. The functional outcome are better than the end button technique when performed by the same surgeon. Early osseous integration is a possible reason in the success of this technique.

**Abstract no.: 35667**

**STRATEGIES IN POST TRAUMATIC ELBOW REHABILITATION**

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Post Traumatic Conditions of the Elbow include contracture, heterotopic ossification, ulnar neuropathy, CRPS, instability, and muscle weakness. Strategies for rehabilitation of these complications require specialized expertise in upper extremity therapy. Surgeons treating elbow trauma require close coordination with upper extremity therapists in order to obtain optimal outcomes. The purpose of this presentation is to outline the rehabilitation techniques and concepts in elbow trauma and discuss clinical applications. Current knowledge in static progressive splinting, dynamic splinting, CPM, strengthening, and modalities for pain and sensitivity are detailed. Controversies in different rehabilitation techniques are contrasted in order to evaluate the benefits and cost effectiveness of different methodologies.

**Abstract no.: 35668**

**PERIOPERATIVE MORTALITY AFTER CEMENTED  
HEMIARTHROPLASTY OF THE HIP; A CORRELATION OR A  
CONSEQUENCE?**

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Introduction: The aim was to retrospectively review the cause of perioperative deaths following cemented hip hemiarthroplasty following a National Patient Safety Agency (NPSA) alert. Methods: The medical records of all patients that had cemented hemiarthroplasties between Oct 2008 and Oct 2011 were reviewed. The data was taken from the National Hip Fracture database (NHFD). The modified SAHFE forms were used for tabulating data. Deaths intra-operatively and within 24 hours were noted. Post-mortem results were obtained from the coroner's office. Results: 22 of 870 patients with a cemented hemiarthroplasty died in the perioperative period (2.52%), (M:F- 8:14), Median age 86 yrs (65-97). Post mortem examinations showed that 5 patients had evidence of fat emboli, 2 pulmonary emboli, 9 MI and left heart failure and 6 respiratory failure exacerbation of COPD. All patients developed cardio-respiratory distress during cementation with hypotension, hypoxemia and bradycardia of which 50% of patients had cardiac arrest within 10 minutes of cement insertion. The cementing technique itself had no correlation with adverse cardiac event. 19 patients had surgery within 48 hours of admission. 27% were operated on during the weekend. 73% were ASA grade 3 and 23% were grade 4. Conclusion: Our study has shown that with available evidence, the guidelines on cementing hemiarthroplasty stems by NICE cannot be challenged or altered. However careful consideration needs to be exercised in a select group of patients with cardio-respiratory co-morbidity. Preoperative optimization by an orthogeriatric consultant combined with adequate resuscitation can reduce mortality in this frail group of patients.

**Abstract no.: 35669**

**DOCTORS IN MANAGEMENT - UTILISATION OF DISCHARGE LOUNGE**

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The establishment of patient discharge lounges in hospitals has been shown to reduce pressure on beds in hospital wards. As the discharge lounge in our hospital was under-utilized, we undertook a project to increase its use. Our surgical short stay ward is a general ward for patients having day surgeries with facilities for overnight stay. Some patients arriving for scheduled surgeries in the morning were forced to wait until beds were vacated by patients from the previous day, which could delay their surgery. Different business units within our large multi-specialty hospital managed the surgical short stay ward and discharge lounge. We arranged the two teams to meet and discuss this potential service improvement. A decision to open the discharge lounge for an additional eight hours per week (2 hours earlier, Tue-Fri) was approved. We opened our discharge lounge early and arranged for the patients who had stayed in the surgical short stay ward overnight to move there in the morning. In the first month, the additional 15% opening time achieved a 30% increase in the number of patients utilising the lounge service. This has also improved the patient experience in the SSS ward and reduced the waste of operating theatre time. We have demonstrated that, when clinicians get actively involved, it is possible to organise a smooth collaboration between two different business units within a large hospital to achieve a more efficient and effective service.

**Abstract no.: 35670**

**EARLY EXPERIENCE WITH USE OF SOFTWARE ASSISTED ORTHO-SUV FRAME IN CORRECTION OF LOWER LIMB DEFORMITIES**

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Ortho-SUV is a new software assisted hexapod Russian frame used for correction of multiplanar deformities by using special designed six telescopic struts connected to any Ilizarov rings or possible some other external fixators. We are presenting here our first experience with Orthosuv frame. Up till now we did four cases. Two cases were complex adolescent tibia vara, with procurvatum, internal tibial torsion and LLD = 2-3 cm. Third case was male, 30y. old presented by varus deformity, internal tibial torsion and LLD = 3 cm, following septic epiphysitis knee since early childhood. Fourth case was very obese male 38y. old, presented with neglected (3months) malunited open fracture both bone leg with shortening due to bony fragments overlapping. All cases were treated using the new Ortho-SUV frame with its struts applied on two Ilizarov rings fixed to the bony segments using Hybrid advanced technique. The fibula is fixed distally to the tibia. Protocol of correction is given to every patient to be applied. The final results are going to be shown and discussed. The Ortho-SUV has the advantage of being able to replace its struts by regular supporting Ilizarov rods till obtaining mature regenerate. We represent these cases as the first ones treated by Orth-SUV frame in the Middle east and Africa. We concluded that this frame can obtain very satisfactory results in with its unique design, durability and accurate mode of action. Orthosuv has some more advantages over TSF as well as some drawbacks. We are going to present the comparison to TSF from our previous experience.

**Abstract no.: 35672**

**AVASCULAR FEMORAL HEAD NECROSIS TREATMENT AND HEPARANASE**

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Background: Idiopathic avascular necrosis (AVN) of bone causes significant morbidity in adults although the pathophysiology is unknown. The present treatment options include systemic bisphosphonate therapy and local bone drilling decompression, ameliorating the healing process and render the femoral head less vulnerable to collapse. The present study demonstrates the involvement of heparanase in AVN and in acceptable treatments. Methods: AVN of the right femoral head was induced surgically among 56 female Sprague-Dawley rats; all except eight were additionally treated daily with subcutaneous alendronate for 6 weeks. All were sacrificed after six weeks and both femoral heads were harvested. Immunostaining of the femoral heads for heparanase, tissue factor (TF), tissue factor pathway inhibitor (TFPI) and hematoxylin-eosin were performed. Results: in the bone-marrow femoral-head staining of heparanase, TFPI and TF were most prominent among AVN compare to normal side. Heparanase and TFPI staining were stronger in the normal side compare to AVN. Differences were less prominent in TF compared to heparanase in TFPI. In contrast among control group no difference was found in TF between the two sides. Conclusions: Heparanase and TFPI involved in the AVN process and inhibited by the acceptable treatments. Inhibition of heparanase by heparins can potentially improve nowadays therapy modalities.

**Abstract no.: 35673**

**HIP PAIN DUE TO HYPOTHYROIDISM – IS IT PRE-AVN?**

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A case report is presented demonstrating the diagnostic difficulties that may be encountered when a child presents with hip pain. A 16 year old boy presented to the emergency department with increasing right hip and buttock pain over a period of two weeks. He was unable to weight bear on the right side and hip movements were reduced. He had no systemic illness. Past medical history included steady increase of weight gain over last 3 years. On examination, he was overweight with BMI of 30.2 and tender over the right groin. His movements especially rotations were restricted and terminally painful. Hip radiographs and inflammatory markers were normal and blood cultures negative. A bone scan demonstrated no signs of infection. MRI scan of the left hip showed a mild joint effusion and significant bone marrow oedema within the femoral head. Thyroid function tests performed demonstrated severe hypothyroidism. Thyroxine treatment was commenced and at follow up of 6 months, the patient had no further hip pain and normal range of movement. MR of the right hip confirmed complete resolution of bone marrow changes and the thyroid function was returning to normal. This case report demonstrates that severe hypothyroidism may cause reversible bone marrow oedema that may mimic avascular necrosis. If undiagnosed, this may lead to catastrophic outcome with AVN. It is therefore important to bear in mind hypothyroidism as an important cause of hip pain in obese adolescents.



**Abstract no.: 35679**

**CARPAL TUNNEL SYNDROME: ROUTINE SCREENING FOR THYROID DYSFUNCTION AND GLUCOSE INTOLERANCE**

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Background: Carpal tunnel syndrome (CTS) is a common orthopaedic condition necessitating surgery. Current published literature indicates that patients with CTS demonstrate higher prevalence of hypothyroidism and glucose intolerance. The current UK guidelines recommend screening all CTS patients for thyroid and glucose dysfunction before surgery and referral to general practitioner for further action if results are abnormal. Aim: This study aimed to analyse the current practise for patients listed for carpal tunnel decompression (CTD) with respect to pre-operative workup as recommended by the British Society for Surgery of Hand (BSSH). Methods: This is a retrospective review of all patients who underwent surgery for CTS over a 3 year period (2009-2011) in a UK teaching hospital. Patients' medical records and pathology results were reviewed. Results: A total of 103 procedures were performed in 100 patients. The male:female ratio was 19:81 with a mean age of 54.8 years (range 25-90). Preoperative thyroid function was checked in 63/100 patients with an abnormal result in 3/63 patients. Of these 3, 2 patients were subsequently newly diagnosed as hypothyroid. Similarly, blood glucose was checked in 67/100 patients which resulted in 3 patients subsequently newly diagnosed with diabetes on further investigations by their general practitioner. Conclusions: The current compliance with the BSSH guideline for preoperative workup of CTS patients is low (63% & 67%) with scope for improvement. The results support the view that CTS is associated with thyroid dysfunction and diabetes and proper screening helps in diagnosing new cases of these diseases.

**Abstract no.: 35683**

**AN INTEGRAL SOLUTION TO CONGENITAL LOWER LIMB DEFICIENCIES: DISTRACTION HISTOGENESIS**

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Since 1992 , the author have been using Ilizarov principle of distraction histogenesis towards treating variety of complicated and complex lower limb reconstructions pertaining to Paediatric age group. In this paper, we present our experience of treating the congenital deformities and defects such as congenital pseudoarthrosis of tibia , congenital hemi-milia , proximal focal femoral deficiencies etc. It includes analysis of 56 such cases , done during last 2 decades. Arising out of our experiences of treating such cases over last two decades, the paper critically analyses such treatment option including effectivity, complications and ways to predict a successful outcome. The distraction histogenesis remains a very key principle of treatment in these children, where there are limitations of other adult reconstruction options such as replacement and large bone grafting

**Abstract no.: 35691**

**RECENT CONCEPTS IN MANAGEMENT OF PERITROCHANTERIC FRACTURES**

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Introduction:Peritrochanteric fractures occur in two age distribution ; in young with high energy trauma and elderly osteopenic with low energy trauma. These fractures present challenge in achieving anatomical reduction and achieving stable proximal fragment fixation.Materials and Methods :In this study, we analysed the outcome of various current treatment options of managing proximal femoral fractures.Method of fixation was based on Seinsheimer classification. Internal fixation techniques used were Proximal Femoral LCP, Recon Nail, Proximal Femoral nail.Results :All fractures united in Proximal Femur nail - 12 weeks ; Reconstruction Nail - 16 weeks; Proximal femur locking plate – 20 weeks.Conclusion:For all peritrochanteric fractures, anatomical reduction without varus and stable internal fixation gives better results. We suggest proximal femur nailing for Type I,II and IIIa fractures , Reconstruction nailing for type IIIb and IV fracture and proximal femoral LCP for type V fractures.

**Abstract no.: 35695**

**ROLE OF PROXIMAL FEMORAL NAILING IN INTRACAPSULAR FRACTURE NECK OF FEMUR**

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Abstract- Fracture neck of femur have always presented great challenges to orthopaedic surgeons and remain unsolved fracture as far as treatment and results are concerned. Our study was done to evaluate role of proximal femoral nailing in intracapsular fracture neck of femur; to assess the effect of early weight bearing after stabilization with proximal femoral nailing and to assess complications in fracture neck of femur treated with proximal femoral nailing. 23 young adults (below 65 year) with average age 42 years with 24 fracture neck of femur (one patient had bilateral fracture) were operated with proximal femoral nailing. In pure fracture neck of femur we used short proximal femoral nail while in fracture with associated subtrochantric fracture or ipsilateral shaft femur fracture we used long proximal femoral nail. Union was achieved in total eight cases only rest of cases did not united. Out of 16 cases of pure transcervical type only 2 cases united, all 3 basal type fracture were united, and 3 all fractures with associated subtrochantric/shaft fractures were united well. On Larsen's method of functional assessment 5 cases (27.24%) showed good score (91-100), 2 cases fair score (71-90) and 14 cases showed poor score (<70). complications included superficial infection implant failure in one case each, in 4 cases cut through, 14 cases non-union. Proximal femoral nailing is useful in fracture neck of femur with associated ipsilateral subtrochantric/ shaft of femur fracture, basal type neck fracture. Proximal femoral nailing must be avoided in pure transcervical fracture neck of femur.

**Abstract no.: 35697**

**INTRAOSSEUS GOUTY TOPHUS CAUSING POSTERIOR ANKLE IMPINGEMENT SYNDROME**

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Tophi are the deposits of monosodium urate crystals in joints and soft tissues. It is pathognomonic of gout. Gout can be a diagnostic challenge if it presents with intraosseous tophus deposits with normal serum uric acid levels. We report an unusual case of intraosseous tophus deposits presenting with symptoms of posterior ankle impingement syndrome. The patient had normal serum uric acid levels with no previous history of gout. Imaging studies showed elongated talar process, based on which the diagnosis of posterior impingement was confirmed. The patient underwent endoscopic resection after the failure of conservative management. Hind-foot endoscopy is used to reach most intra-articular structures of the ankle. The posterolateral and posteromedial hindfoot portals provide excellent access to the posterior aspect of the ankle and subtalar joint, including extra-articular structures in the hindfoot. The Hind-foot endoscopy revealed chalky white deposits in and around the talar process. The histopathological report confirmed the deposits to be tophaceous gout. To the best of our knowledge, this is the first reported case of gout presenting with the intra-osseous deposits with normal uric acid levels.

**Abstract no.: 35703**

**SEVERLY COMMINUTED POSTERIOR WALL FRACTURE ACETABULUM-  
RECONSTRUCTION USING TRICORTICAL ILIAC CREST STRUT GRAFT**

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Severly comminuted posterior wall fractures of acetabulum are a significant reconstructive challenge. We present our experience in treating such an injury in 6 patients (all aged between 18-45 years) with excision of fragments and tricortical iliac-crest autograft used as a strut. None of the patient had pre-existing arthritis and all had a well-preserved round femoral head. All the patients had a fracture where posterior wall was found to be so comminuted on exposure that satisfactory reconstruction allowing a stable hip was deemed to be impossible. All the patients achieved a stable reconstruction on table allowing for unhindered post-op mobilisation protocol i.e toe-touch wt-bearing for 6 weeks then gradually progressing to full weight-bearing at 3 months, sitting on the edge of bed and side turning with abductin pillow. At the latest follow-up (6 months-3 years), 4 patients attained clinical result of good (acc. to merle d'aubigne score) and 1 each achieved fair and poor. The reconstruction of severely comminuted posterior wall fracture is quite challenging. Primary total hip replacement is reserved for elderly patients and young patients with either pre-existing arthritis or a severely damaged femoral head. In young patients without pre-existing arthritis and well preserved head, this technique is a fairly simple, useful and easily reproducible adjunct to treatment of a difficult situation.

**Abstract no.: 35704**

**PRIMARY RECONSTRUCTION OF ELBOW IN COMPLEX FRAGMENTED FRACTURES OF THE MOST DISTAL ASPECT OF THE ARTICULAR SURFACE THE DISTAL HUMERUS**

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Complex fragmentation of articular surface of distal humerus especially in coronal plane can be difficult to reconstruct. There is a paucity of literature on these severe and rare injuries of distal humerus that involve the distal most articular region at the base of olecranon fossa or even distal to it. There are no standard operative guidelines on these challenging injuries. We present five cases of closed comminuted distal articular fractures of humerus (Ring type V, n=3 [case 1, 2,3]; AO C3.3 fracture with Ring type 4 fracture, n=1[case 3]; Ring type3,n=1[case 4]) in which complex articular reconstruction was done. First two cases were approached with olecranon osteotomy; next two with Triceps reflecting anconeus pedicle (TRAP) approach and last with lateral extensile approach. Cases 1,2,3 & 4 were stably fixed using parallel plating, headless cancellous screws (HCS) and iliac crest bone grafting and were allowed early guarded postoperative elbow mobilization. Lateral column fixation with HCS and plating was done in case 5. We here discuss mechanism of injury, functional outcome (Mayo Elbow Performance Score), rationale of operative approach, utility and rationale of iliac crest graft, restoration of elbow alignment & stability and avoidance of salvage procedures (arthroplasty or arthrodesis) in these complex and challenging fractures. We also conclude that complex reconstruction of articular surface of distal humerus with restoration of stable and mobile articulation is feasible with use of iliac crest bone graft (tricortical or corticocancellous) and parallel plating technique in these challenging fractures, with good expected outcome.

**Abstract no.: 35705**

**HOFFA FRACTURE ASSOCIATED WITH FEMORAL SHAFT AND PROXIMAL TIBIAL FRACTURES- REPORT OF TWO CASES**

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Friedrich Busch was first to describe coronal fractures of the femoral condyle in 1869 but these were later named after Albert Hoffa in 1904. Hoffa fracture of the lateral femoral condyle is more common. Solitary Hoffa fracture is rare and is usually associated with supracondylar or intercondylar fracture of the femur. Hoffa fracture associated with femoral shaft and proximal tibial fracture is extremely rare and no such injury has been reported previously. In the presence of common fractures like femoral shaft and proximal tibial fractures hoffa fracture can be easily missed. Therefore complete set of radiograph is recommended including anteroposterior and lateral view of the thigh including hip and knee joint especially in patients with clinical findings of injury around the knee joint.



**Abstract no.: 35711**

**POSTVERTEBROPLASTY INSTABILITY: REPORT OF 5 CASES**

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Vertebroplasty provides excellent pain relief and functional restoration for osteoporotic fractures. Short-term complications such as cement leak and embolism are well described. Incident fractures are the only well-reported long-term complications. The authors describe the cases of 5 patients who presented with back pain caused by instability or worsening neurological status 13 months (range 8–17 months) after vertebroplasty. They further classify this postvertebroplasty instability into intervertebral instability and intravertebral instability, depending on the apex of abnormal mobility. One patient presented with cement migration and progressive collapse of the augmented vertebral body. Another patient presented with an additional fracture. Both cases were classified as intravertebral instability. The cases of 3 other patients presenting with adjacent endplate erosion, vacuum disc phenomenon, and bridging osteophyte formation were classified as having intervertebral instability. Long-term effect of cements on the augmented vertebral body and adjacent endplates and discs is a cause for concern. Vertebroplasty acts as a mechanical stabilizer and provides structural support but does not bring about union. Micromotion has been shown to persist for years after vertebroplasty. This study describes persistent instability after vertebroplasty in a series of 5 cases. The authors propose that postvertebroplasty instability occurs due to collapse of soft osteoporotic bone and endplates around cement. All 3 cases of intervertebral instability were associated with an intradiscal cement leak. With increased longevity and higher functional demands of the geriatric population, the durability of this “rock (cement) between cushions (of osteoporotic bone)” arrangement (as seen in vertebroplasty) will be increasingly challenged.

**Abstract no.: 35713**

**METALLOSIS-INDUCED ILIOPSOAS BURSAL CYST CAUSING VENOUS OBSTRUCTION AND LOWER LIMB SWELLING AFTER A METAL-ON-METAL TOTAL HIP ARTHROPLASTY: A CASE REPORT**

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The formation of iliopsoas bursal cystic lesions after total hip arthroplasty (THA) is an infrequently reported condition. We report an unusual complication of a current-generation metal-on-metal THA. A female patient presented with unilateral, spontaneous lower limb swelling that developed 5 years post-operatively. It occurred secondary to venous obstruction by a metal debris-induced iliopsoas bursal cyst associated with markedly elevated intralesional cobalt and chromium levels. Metal Artifact Reduction Sequences (MARS) MRI showed that the bursal cyst was communicating with the hip joint and severely compressed the common femoral vein. Based on the findings of high local tissue metal ions and vertical cup positioning causing edge-loading, we proposed an inflammatory reaction to metal debris that tracked into the iliopsoas bursa forming a cyst. The patient was treated by revision of the excessively vertical acetabular component and conversion to a ceramic-on-ceramic bearing interface. She underwent drainage of the bursal cyst and synovectomy. At the most recent one-year follow-up, there were no signs of local recurrence. To the best of our knowledge, the occurrence of metallosis-induced iliopsoas bursitis with secondary pressure effects after contemporary metal-on-metal THA has not been reported. When treating hip dysplasia as in this case one must avoid maximizing cup-host bone contact at the risk of over verticalization. Our case also exemplifies that iliopsoas bursal cystic lesions can lead to severe vascular compressive symptoms without any ominous radiographic findings. Physicians and orthopedic surgeons should be aware about the possibility of this complication in patients with unexplained unilateral lower limb swelling.

**Abstract no.: 35715**

**PROSPECTIVE STUDY OF VERTEBRAL AUGMENTATION BY PERCUTANEOUS BALLOON KYPHOPLASTY IN OSTEOPOROTIC VERTEBRAL COMPRESSION FRACTURES**

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**Introduction:** Vertebral compression fractures are the common source of morbidity in elderly osteoporotic patients. Balloon kyphoplasty is a minimally invasive outpatient procedure for treatment of vertebral compression fractures, with an advantage of immediate pain relief, stabilization of fractures, vertebral height restoration and correction of kyphotic deformities with minimal complications like cement leakage. **Materials & Methods:** A total of 33 patients were studied prospectively for the duration of 1 year after the index procedure during May 2011 to February 2013. All the patients were evaluated clinically using Visual Analogue Scale and Oswestry Disability Index and radiologically by measurement of wedge angle and kyphotic angle at preoperatively, immediate postoperatively, 3 months, 6 months and 1year. Complications due to procedure and cement were also noted. **Results:** Mean VAS score reduced from 8.56 preoperatively to 2.55 immediately and 2.13 at the end of 1 year while mean ODI score reduced from 67.88 preoperatively to 28.48 immediately and 25.81 at the end of 1year. Average wedge angle reduced from 9.0° preoperatively to 6.94° postoperatively and kyphotic angle reduced from 6.42° preoperatively to 5.82° postoperatively. **Conclusion:** Balloon kyphoplasty is an effective, safe and less time consuming procedure for osteoporotic vertebral compression fractures in elderly people. It also provides immediate pain relief with correction of kyphotic deformity.

**Abstract no.: 35720**

**RADIOGRAPHIC ASSESSMENT OF UNCEMENTED TOTAL HIP**

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Background: Radiographic evaluation has a prominent place in the follow-up of long-term results of uncemented total hip arthroplasty (THA). The most prominent scale reported in studies is the Engh Grading Scale, but there is a lack of literature on the reliability of the scale. Methods: We evaluated intra- and interrater reliability of the Engh Grading System for uncemented THA using 26 follow-up radiographs of patients who had primary uncemented THAs. Four evaluators with different skill levels and specialties participated: 2 arthroplasty surgeons, an orthopedic resident and a radiologist. Reliability was measured using a weighted  $\kappa$  coefficient for paired comparisons among the evaluators. Results: Intrarater reliability was dependent on the skill and specialty of the evaluator, with the highest values achieved for the arthroplasty surgeons ( $\kappa = 0.52$  and  $\kappa = 0.68$ ) and the lowest values for the radiologist ( $\kappa = 0.14$ ). Interrater reliability was comparable among participants, regardless of skill or specialty, and rated a moderate level of reliability ( $\kappa = 0.29$ – $0.41$ ) for all pairings. Conclusion: The Engh Grading Scale appears to be reliable when used by a single, experienced arthroplasty surgeon. Caution must be exercised when multiple raters are used, regardless of experience, as the interrater reliability achieved lower ratings.

**Abstract no.: 35721**

**EFFECTIVENESS OF LCP THROUGH MIPPO TECHNIQUE IN THE MANAGEMENT OF PROXIMAL TIBIA FRACTURES**

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Background: Fracture of proximal tibia is one of the most common fractures sustained in a road traffic accident. Treatment of proximal tibial fractures has always been a challenge because of the involvement of articular surface, occurrence of comminution and precarious soft tissue conditions especially following high energy trauma. We intend to analyze the functional outcome of the proximal tibial fractures fixed with locking Compression Plate using Minimally Invasive Percutaneous Plate Osteosynthesis technique. Methods and materials: Twenty patients with mean age of 42.2 years who were treated with LCP by MIPPO technique for proximal tibia fractures were selected for the study. Fractures were classified according to Shatzkher, out of which 11 were type V and 7 were type VI. Mean duration of follow up 18.3. The results were evaluated according to the Rasmussen's Scoring System. Results: Mean time to union was 5 months (range 3–13 months). Fifteen fractures healed with good functional outcome. Two patients had delayed union. One patient had non-union and underwent revision; the fracture ultimately healed with good functional outcome. Discussion: Locking Compression Plate fixation using Minimally Invasive Percutaneous Plate Osteosynthesis technique for proximal tibia fractures is proved to be a relatively simple procedure, minimally invasive and results in a very firm fixation that allows early movement of the joint and stable fixation with good clinical results.

**Abstract no.: 35722**

**A CLINICAL STUDY OF MANAGEMENT OF MALLEOLAR FRACTURES  
BY RIGID FIXATION USING MALLEOLAR SCREW**

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**INTRODUCTION:** Conservative treatment for ankle fractures has become past, ideal treatment is open reduction and internal fixation as it help to restore the normal anatomy of joint& early mobilization. Malalignment can affect biomechanics of ankle. **AIM:** To achieve near anatomical reduction and stable fixation. To hasten bony union, reduce risk of delayed union and non union ,proper reconstruction of joint surface. **MATERIAL & METHOD:** 35 cases of osteoarticular fractures were taken in which 15 cases of single malleolus, 20 of bimalleolar. Fractures were classified according to Lauge-Hansen. Malleolar / cancellous lag screw were used and D.C.P. for fibula shaft fracture. **OBSERVATION& ANALYSIS:** Patients included were 17-70years with an average age of 37 year. Majority of patient sustain fracture in R.T.A, 29 had simple & 6 had compound injury. According to Lauge-Hansen classification 16 had abduction type, 5 had pronation adduction type, 9 had supination external rotation type & 5 had pronation external rotation type injury. Patients were observed postoperatively for 10 days, period was uneventful and immobilized in B/K cast and were followed at 4 weeks, 3 months & 6 months. **CONCLUSION:** These injuries reflect relative strength of the ligamentous around ankle mortice compared with the bone. Complications recorded were swelling in toes (2 cases) and infections (1 case). Sound union was obtained in all except 2 cases which went into delayed union that ultimately united and majority had a painless full rom. Thus it concludes that this technique which affords stable internal fixation can obviate the need of plaster immobilization partially and achieve exact anatomical reduction and sound union.

**Abstract no.: 35726**

**RECONSTRUCTIVE SURGERY AFTER ENBLOCK RESECTION FOR AGGRESSIVE GIANT CELL TUMOUR AROUND KNEE JOINT, REPLACEMENT BY PROSTHESIS OR ARTHRODESIS**

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**Introduction:**Enblock resection in aggressive Giant Cell Tumour is the treatment of choice. But, reconstruction of the resected part is a challenge. Hinged knee prosthesis and knee arthrodesis are options. In developed countries hinged knee prosthesis with all accessories are available but in developing countries with financial problems, arthrodesis is a good choice. The Aim of this study is comparing these two type of treatment with each other. **Materials and methods:** In 25 years , we studied 108 patients with aggressive GCT around knee joint. In one group knee arthrodesis (modified Enneking) and in the other group hinged knee prosthesis has been used. Radiography and physical exam were done each 6 months for minimum 5 years. Recurrence of tumour, non-union , infection, leg length discrepancy, low back pain, patient satisfaction, reoperation, ischemic heart disease and the cost are variables. **Results:**In summary, recurrence and infection rates in both groups are the same but in arthrodesis group LLD, low back pain and ischemic heart disease are more common. The cost of prosthesis is much more higher. **Conclusion:**Recurrence rate is not different in both groups ,it seems that recurrence is related to resection not reconstruction method. Ischemic heart disease is more common in arthrodesis because of more energy consumption for gate in this group. Cost is a major factor for reconstruction in developing countries with good prognosis comparing prosthesis.

**Abstract no.: 35728**

**SEASONAL AND TEMPORAL VARIATIONS IN INCIDENCE OF HIP FRACTURES IN ELDERLY INDIVIDUALS PRESENTING AT A TERTIARY CARE ORTHOPEDIC CENTRE IN SOUTH DELHI.**

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The hip fractures in elderly individuals is a matter of great concern as it not only hampers the functional status of an individual but also affects the overall quality of life. The purpose of this study was to analyze all elderly patients presenting with hip fractures in terms of season and time of occurrence and to suggest specific preventive measures in terms of the observed variations. The study was conducted in Indian Spinal Injuries Centre, New Delhi wherein 120 patients of hip fractures (peri-trochanteric and neck) presenting within a time period of 2.5 years were included and seasonal and temporal variations were observed and analyzed statistically. A significantly high incidence was found in winters and in early morning. Possible reasons for the same were examined in detail and appropriate preventive measures are suggested.



**Abstract no.: 35729**

**ARE LOCKING COMPRESSION PLATES HELPFUL IN TREATMENT OF DISTAL TIBIAL FRACTURES ?**

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**Objective:** The limited soft tissue, subcutaneous location and poor vascularity render the distal tibial fractures very challenging. Treatment of distal tibial fractures using minimally invasive locking compression plate may minimise damage to soft tissues and the vascular integrity of bony fragments. This study was conducted to assess the outcome of patients treated with locking compression plate for distal tibial fractures. **Methods:** Fifty-two patients of fractures of distal tibia between January 2009 and July 2012 were included in this study. Majority were AO type A fractures. After direct or indirect fracture reduction, the plate was advanced through a submuscular extraperiosteal tunnel through the distal incision without opening the fracture line. The plate was fixed with screws through the proximal and distal incisions. Patient's outcome in terms of period of radiologic union of the fractured segments and period of full weight bearing capacity were assessed. **Results:** There were 36 males and 16 females of mean age 40.8 years. The average period of full weight bearing was 13.42 weeks (ranging 10–16 weeks). There were four cases of superficial infections treated successfully using antibiotics, two delayed unions and four varus/ valgus angulations. 88.46% had excellent, 7.70% had good & 3.84% had fair results. **Conclusion:** Locking compression plate is an effective treatment for distal tibia fractures with low complication and high union rates

**Abstract no.: 35731**

**TREATMENT OF NON-UNION HUMERUS.**

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Introduction: Cases of humeral non-union are accordingly rare and the treatment of humeral non-unions is problematic. Nonoperative methods require prolonged immobilization and fail to achieve sufficient stabilization. Methods such as electric stimulation and extracorporeal shock waves are only practicable in a limited number of selected cases. Decortication, cancellous bone graft, and rigid fixation have been recommended in surgical treatment. Materials: Twenty patients with humeral diaphyseal non-union treated with DCP and autogenous bone grafting were retrospectively assessed. The mean age was 37 years (28 to 59 years). There were 6 women and 14 men. The non-union site was in the distal third of the humerus in 6 patients (30%) and in the middle third in 14 (70%). 14 (70%) were due to failed surgery with 3 cases of infection, and 6 (30%) were osteopath treated. Patients were treated with Dynamic Compression Plate and autogenous cancellous bone grafting. Infected cases were treated with implant removal, debridement and temporary fixation with Ex-Fix till infection was controlled. The mean follow-up was 16 months, and the mean time to union was 4.8 months (2.5 to 11 months). One patient developed superficial infection. Union was achieved in all cases. According to Steward and Hundley's scoring, results were good in 18 patients, fair in 1, and poor in one. Conclusion: treatment of non-union humerus with DCP and autogenous bone graft is successful when the principles of internal fixation is followed promptly.

**Abstract no.: 35733**

**CLINICAL OUTCOMES AFTER OPEN LUMBAR DISCECTOMY : IN DIFFERENT STAGES OF DISC PROLAPSE.**

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Introduction: The term disc prolapse is a broad term which includes 4 stages - Disc bulge, Protrusion, Extrusion & Sequestration. In most clinical series, patients with disc herniations have generally been reported as a single pathological group, hampering analyses between subgroups and between studies. Surgical practice should have a proper scientific basis as results vary in different stages of disc prolapse. Materials: We treated 60 patients of IVDP with single level open lumbar discectomy between JANUARY 2009 to DECEMBER 2010. These patients were followed up for at least 12 months and the outcome assessed using clinical examination, Visual analogue scale (VAS) pain rating and Modified Oswestry Disability Index (ODI). Results: The 60 patients operated had an average age of 38.3 years. There was 1 case of superficial wound infection, 1 case of transient increased sciatica, 1 case of transient foot drop, 1 case of dural tear, 2 patients had recurrence, 1 had to undergo second surgery. The Patients reported rapid recovery from pain, low pain scores, good to excellent ODI scores and high levels of satisfaction. Conclusion: Open discectomy produces good results in lumbar disc prolapse. The identification of subgroups of disc herniations may allow investigators to better compare, communicate and delineate the target populations for treatment.

**Abstract no.: 35734**

**CLOSURE OF ROUND CUTANEOUS DEFECTS PROGRESIVELY WITH THE PURSE STRING SUTURE TECHNIQUE.**

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**Introduction:** There are various techniques to close the chronic skin defects. One of them is to close defect with skin which was gained by skin expanding technique. The skin expansion frequently gained by regularly inflating a baloon which was inserted close to skin defect area. However this tecnique can not be applied some areas. Besides infection is a frequent complication because of a foreign matter. In our study; we closed skin defect with purse string suture tecnique by progresively puckering wound.**Materials:** There was two groups, each had 10 rats. After anaesthetize, we create a 3,5-mm diameter circular skin defect on dorsal area of rats. In group 1, purse string suture was applied by using a nonabsorbable and monofilament suture. Proximal and distal end of suture was left longly and a sliding arthroscopic suture was applied to both end. Arthroscopic suture was shift 1 cm forward every day. In group 2 skin defect was leaved open and daily dressing was made and in both group defect diameter was measured every day.**Results:** The skin defects was closed totally after 15 days in group 1 but in group 2 defects was reduced but still had a 1,5-cm diameter sircular defect.**Conclusion:** There are several advantages of our tecniques; which it does' nt cause additional morbidities, and it can be applied with several simple materials. Besides it is a simple tecnique it doesn't need a special training, experience and it doesn't require a operation room.

**Abstract no.: 35737**

**IS UNION RATE OF INTERTROCHANTERIC FRACTURE ASSOCIATED WITH BODY WEIGHT?**

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Intertrochanteric fractures commonly affect the elderly and have tremendous impact on the patient, the health care system and society in general. Despite marked improvements in implant design, surgical technique and patient care, hip fractures continue to be the challenge for orthopaedic surgeons. Objective In the period from 2009-2011 we evaluated 125 patients who sustained intertrochanteric fracture by low energy trauma (trivial strain) and who underwent internal fixation with DHS system. We analysed the influence of body weight on the union rate with the follow up period up to the one year after surgery. Results 89 patients were females and 36 patients were males with mean age 71 (56-83). All patients were treated with DHS system with partial weight bearing with walker allowed by 4-6 weeks after surgery. One year after surgery union had been achieved in 76 patients, 7 were lost in follow up period, in 17 patients the hardware failure had been noticed. Non union had been reported in 25 patients. The mean body weight for the patients with union was higher - 65,5 (51-83) comparing with the patients with non union (included patients with hardware failure) was 69,8 (54-84), but statistically not significant ( $p=0,09$ ) Conclusion It is well known that increased body weight is associated with lower osteoporosis risk, but the results of our study showed that the patients with increased body weight have higher risk to develop the non union of intertrochanteric fractures.

**Abstract no.: 35738**

**OUR EXPERIENCE WITH ERAS PLUS MINI- INCISION FOR TOTAL HIP ARTHROPLASTY AT A SMALL DGH**

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Introduction: Total Hip Arthroplasty is a major operative procedure associated with significant blood loss, postoperative pain and morbidity. ERAS (Enhanced Recovery After Surgery) protocol aims to minimise the blood loss, give better pain control and aid in early mobilisation and recovery. The mini incision improves patient satisfaction and minimises perioperative morbidity. Methods: We present our early results using ERAS protocol along with mini-incision technique for Total Hip Arthroplasty by a single surgeon over a period of 1year (Jan. –Dec. 2012). The ERAS protocol includes premedication with Gabapentin, Dexamethasone, Omeprazole and Paracetamol; administration of Parecoxib, Ondansetron and Tranexamic acid at induction; light sedation with Midazolam or Ketamine; local infiltration with 1:200,000 Xylocaine in Adrenaline in various layers. Results: There were a total of 116 patients with 60 females and 56 males. The mean age of the patients was 69. The average size of the incision was 8.4cm. The average duration of the surgery was 58 minutes. The mean intraoperative blood loss was 250ml. The mean drop in haemoglobin postoperatively was 2.65g/dl. 8 patients needed blood transfusion postoperatively for significant drop in haemoglobin. None of the patients had surgical drains and none received autologous transfusion. The mean hospital stay was 3.5 days. We conclude that based on our experience, the ERAS protocol can substantially minimise the immediate postoperative morbidity, improve the pain scores and help in early mobilisation and improve the functional outcome. ERAS helps in shorter hospital stay and reduce costs and the small incision improves the patient satisfaction.

**Abstract no.: 35746**

**EVALUATION OF HAND FUNCTION AFTER SURGERY OF FLEXOR TENDON INJURIES- A PROSPECTIVE STUDY OF 30 CASES.**

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Introduction: Human hand is a highly adaptable organ of prehension, sensation, expression and communication. Flexor tendon injury are common hand injuries . The whole new concept of tendon healing has undergone a revolutionary change but still the perfect suture and ideal mobilization technique eludes this generation of hand surgeons. The present study evaluated the function of hand after flexor tendon repair. Methods: 30 patients of either sex with a flexor tendon injury were operated by modified Kessler repair technique using Non-absorbable monofilament (Prolene) sutures. Active finger extension/passive flexion using rubber band traction of the Kleinert protocol was adopted in post-operative period. The functional outcome after tendon repair were assessed by calculating total active range of motion (TAM) as suggested by American Society for the Surgery of Hand (ASSH).Results: In the present prospective study, excellent results were achieved in 13 patients (43.33%), good in 8 patients (26.67%), fair in 4 patients (13.33%) and poor in 5 patients (16.67%). Flexor tendon repairs in zone-5 showed 76.92% excellent and good results , 83.33% in zone 3, 55.55% in zone-2 and 33.33% in zone-1 Conclusion: Surgical repair of flexor tendon requires an exact knowledge of anatomy, careful adherence to some basic surgical principles, sound clinical judgment, strict atraumatic surgical technique and a well planned post operative programme. Factors such as infection resulting in scarring, adhesion formation, joint stiffness, time elapsed between injury and repair, associated nerve and pulley injuries, non-co-operation of patient in adhering to post operative rehabilitation leads to sub-optimal results.

**Abstract no.: 35749**

**MANAGEMENT OF DISPLACED MIDSHAFT CLAVICLE FRACTURES BY FLEXIBLE INTRAMEDULLARY NAIL.**

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Introduction: Despite centuries of documented clinical experience in treating clavicle fractures, controversies still exist about their optimal management. Historically, these fractures have been treated conservatively, and the culture of orthopedic surgery training has fostered a “benign neglect” approach to their management despite a paucity of validated, patient-oriented data to support this position. In fact, to orthopedic surgeons, the term “clavicle fracture” often implies simple injuries, simple treatments, and favorable outcomes. However, the application of evidence-based techniques and validated patient-oriented outcome measures are challenging our classical perceptions of these injuries. The present study evaluated the outcomes of operative treatment with flexible intramedullary nail in displaced fracture midshaft clavicle. Methods: This study comprised of 25 cases with displaced fracture midshaft clavicle. A flexible nail of appropriate thickness was inserted in the medullary canal under image intensifier. Outcomes were assessed by the standardized subjective Disabilities of Arm Shoulder and Hand (DASH) score. Shoulder function was measured with the self evaluated Constant score (maximum 100 points) Results: The mean DASH score was 7.7 with minimum 0.8 (best) to maximum 44.2 (worst). The mean self evaluated constant score was 86 ranging minimum 43 (worst) to maximum of 98 (best). Complication were soft tissue irritation at entry point, hypertrophic scar formation over scar of entry point, periarthritits shoulder, shortening more than 2 cm and proximal migration of nail. Conclusion: Flexible intramedullary nailing of displaced midshaft clavicular fractures is a minimally invasive technique for fixation of displaced midshaft clavicle fractures with excellent functional and cosmetic results.



**Abstract no.: 35752**

**FUNCTIONAL OUTCOME OF CLOSED PROXIMAL HUMERUS FRACTURE TREATED BY PERCUTANEOUS THREADED K-WIRES. A STUDY IN 29 CASES.**

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**Introduction:** Proximal humeral fracture accounts for 4-5% of all fractures. Mostly in elderly osteoporotic bones. There are many modalities of treatment. This method is selected for there is practically no blood loss, less tissue trauma, less surgical and anaesthesia time, avoids Avascular necrosis, economical, and yielding very good results. **Material and method:** 29 patients, 12 male 17 female of age group 23-79 years, 2 and 3 part fractures and one 4 part, were treated by closed percutaneous k-wire under GA in supine position. A sand bag is put behind the scapula. Closed reduction done under C-arm control. Multiple threaded k-wires 2.5 mm in diameter, introduced and the tips were kept divergent for rotational stability which just pierced the opposite cortex. Arm-sling support for 3 wks. Pts evaluated for pain, motion, strength, anatomic restoration, infection and loosening, radiologic union, at 3 weeks, 6 weeks, 12 weeks and one year. **Result analysis:** Union occurs in 25 pts average at about 8 weeks. 3 pts had pin-tract infection treated by frequent pin care and ½ strength hydrogen peroxide solution., one pulled out. ROM almost full average at 16 weeks except 4 who had abduction below 90. Radiological union occurs in all cases at 12-16 weeks. Pain assessed by VAS. 3 pts developed painful shoulder, 2 from 3 part fracture and one from 4 part fracture. There is no avascular necrosis nor nerve injury. **Conclusion:** This surgical technique is very acceptable modality in 2-part, 3-part and some 4-part proximal humerus fractures. It is economical, less surgical trauma and offers excellent functional outcome.

**Abstract no.: 35753**

**RARE CASE OF OSTEOMALACIA**

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A 35-year-old male presented with complaints of multiple bone pains and generalized muscle aching of 3 months duration. He was treated for suspected pathological fracture neck of left femur, 2 years back. Investigations showed a low to normal serum calcium (7.8 mg/dl), low serum phosphorus (1 mg/dl) and elevated serum alkaline phosphatase (289 U / l). Radiographs showed osteopenia. A diagnosis of osteomalacia was made. The patient received injectable vitamin D and was advised to take oral calcium. Symptomatically he was better, but not fully recovered. One year later he presented with a progressively enlarging swelling in the right mandible. His symptoms had worsened and he was unable to walk. Local examination revealed a 6 to 8 cm bony swelling in the right mandible. Computed tomography (CT) showed a well-defined enhancing, expansile, solid and cystic lesion with internal septations situated in the body of the right mandible. FNAC of the tumour was reported as possibility of ameloblastoma of the mandible. Resection of the tumour made the patient completely free of symptoms. The histopathology revealed phosphaturic mesenchymal tumour (PMT) of the mandible. This tumour is commonly seen in the fourth to fifth decades of life, in bone and soft tissue of the head and neck region and the extremities. PMT is a rare mesenchymal tumour that causes oncogenic osteomalacia, which is a rare clinicopathological syndrome characterized by renal phosphate wasting, hypophosphataemia, normal serum calcium and decreased serum 1,25-dihydroxyvitamin D<sub>3</sub>, induced by aneoplastic lesion.

**Abstract no.: 35758**

**CAN MAXIMAL HAMSTRING MUSCLE CONTRACTION ABOLISH ANTERIOR KNEE LAXITY IN ANTERIOR CRUCIATE LIGAMENT DEFICIENT KNEES IN-VIVO?**

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Background: Simulation studies showed that sub-maximal hamstring muscle force abolishes anterior laxity in anterior cruciate ligament (ACL) deficient knees. We designed a study to measure the maximal potential of hamstring contraction in controlling anterior tibial translation in ACL deficient knees under loads in vivo. Methods: We recruited 20 subjects with unilateral isolated ACL deficient knees who underwent intensive physiotherapy for three months. All had equal hamstring power in both the limbs. We measured the anterior tibial translation in both knees using KT arthrometer at 30° of knee flexion applying 135 N of anterior load. We repeated the KT measurements while the subjects were contracting their hamstrings maximally by attempted flexion against resistance. Results: ACL deficient knees showed increased anterior tibial translation by 5.1 mm ( $\pm 1.7$ ) compared to normal knees. Hamstring contraction reduced this to 1.9 mm ( $\pm 1.8$ ) ( $p < 0.01$ ). The proportion of reduction was 65% ( $\pm 27$ ). Nearly one third of subjects showed significant anterior tibial translation with side-to-side difference of 3 mm or more even with maximal hamstring contraction. Hamstring contraction abolished the side-to-side differences to zero in 18% of cases only. Anterior tibial translation reduction by hamstrings did not correlate with knee instability. Discussion: Our study showed that maximal hamstring contraction cannot reduce the anterior tibial translation to normal level in most of the ACL deficient knees. This suggests that even the asymptomatic patients with ACL deficiency are prone for abnormal knee movements under physiological loads that may lead to early osteoarthritis.

**Abstract no.: 35760**

**CUBITUS VARUS DEFORMITY CORRECTION WITH PERCUTANEOUS SUPRACONDYLAR OSTEOTOMY AND MINI EXTERNAL FIXATOR- A CASE SERIES**

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**Introduction:**The purpose of this study was to report our experience in treating Cubitus varus with Dome Osteotomy with mini External Fixator. **Preoperative Planning:** CORA is marked at intersection of humeral and ulnar axis. It usually corresponds to center of olecranon fossa. A dome is drawn facing down (SAD Osteotomy) concentric to CORA with diameter 1.5 times the width of the humerus at level of CORA. **Materials and Method:**20 patients of age group 7-12 yrs underwent supracondylar osteotomies for the correction of cubitus varus. The indication for osteotomy was cubitus varus that was cosmetically unacceptable to either the child or the parents. On physical examination the carrying angle and postoperative scar were assessed. Carrying angle and range of movement were used as criteria to categorize the results. **Post Operative Protocol:**Patient is placed in a sling initially and then elbow mobilization started once the patient is pain free. Check x-ray at 2 and 4 weeks post operative were done. The fixator and K wires are removed at 4-5 weeks postoperative. **Results:** All the children at follow up of 3 months to 2 year had full range of elbow movements with satisfactory correction of deformity. There were no neurovascular complications. Mild pin tract infections occurred in 4 patients. The procedure was well tolerated by the patients and accepted by the parents as suggested by the questionnaire. **Advantages of the procedure are:** 1.Cosmetically superior. One stitch surgery. 2.No lateral bump seen as in French Osteotomy. 3.No translation of humero ulnar axis. 4.Readjustment and correction of Rotation. 5.Early mobilization.

**Abstract no.: 35761**

**FUNCTIONAL OUTCOME OF TIBIAL SPINE FRACTURE TREATED WITH A NOVEL ARTHROSCOPIC PULL THROUGH SUTURE TECHNIQUE**

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Tibial spine fractures are characterized by fractures at the insertion site of the anterior cruciate ligament (ACL) on the tibia. Displaced fractures (type 2 & 3) require reduction and fixation. Operative stabilization can be accomplished with either open or arthroscopic reduction and fixation. We assessed the functional outcomes of 9 cases treated with a novel arthroscopic pull through technique. Nine patients with type 2 ( 2 patients) & type 3 ( 7 patients ) fracture were included for the study & were operated with arthroscopic reduction & internal fixation with pull through sutures with ethibond no. 2. Post operatively early rehabilitation programme was started & followed up at regular intervals. Results : All the patients were evaluated by Lysholm knee scoring , IKDC score & Tegner activity level. All patients achieved their normal knee range of motion except one patient who had knee extension lag of 10<sup>0</sup> . All patients returned to their previous level of activities without instability symptoms. The average knee scores were :- Mean Lysholm knee score :- 97 ,Mean IKDC score :- 87, Tegner activity level –All patients achieved their pre-injury Tegner activity level. Out of 9 operated patients, one patient required arthroscopic adhesiolysis for knee arthrofibrosis & one patient had persistent knee extension lag. Conclusion : Arthroscopic reduction and internal fixation with pull through sutures produces relatively good results in terms of functional outcome and stability. Early and aggressive rehabilitation programme helps prevent arthrofibrosis

**Abstract no.: 35764**

**TRICEPS ACTIVATION AMPLITUDES DURING FUNCTIONAL ACTIVITIES  
- IMPLICATIONS FOR POSTERIOR ELBOW SURGICAL APPROACHES  
AND ELBOW REPLACEMENTS**

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**OBJECTIVE:** Investigate the muscular activation amplitudes of three heads of triceps during functional activities. **HYPOTHESIS:** The medial and lateral triceps heads are most active in the terminal 30 degrees extension activities. **DESIGN:** Cross sectional. **Setting:** Musculoskeletal Clinical Laboratory. **Participants:** 20 healthy subjects recruited from a sample of convenience. **Intervention:** Fine wire electromyographical (EMG) electrodes were placed into the medial, central, and lateral triceps to measure muscular activation amplitude and two dimensional electrogoniometric kinematic activity was recorded during functional activities associated with activities of daily living. **Main Outcome Measure(s):** Root mean squared amplitudes of tricep muscles normalized to maximal voluntary isometric contractions that are sub-divided into 30 degrees arcs of motion. **RESULTS:** The medial triceps generated significantly more EMG activity during the terminal 30 degrees arc of supine extension ( $54 \pm 11\% \text{MVIC}$ ,  $p < .05$ ) and during the pushing activity ( $29 \pm 7\% \text{MVIC}$ ,  $p < .01$ ). The lateral triceps remained relatively constant throughout all arcs, while the central triceps consistently generated the lowest EMG activation level across all functional tasks. **CONCLUSION:** The hypothesis is partially supported as the medial triceps generated more activity in two of the three tasks during the terminal 30 degrees of extension. **CLINICAL RELEVANCE:** Posterior elbow surgical approaches frequently either detach or partially elevate the muscular footprints from the olecranon, later repaired. These results highlight the importance of the muscular insertion of the medial and lateral heads of the triceps, and we suggest that the medial and lateral heads should not be disturbed during a posterior elbow surgical approach, especially in total elbow replacements.

**Abstract no.: 35765**

**THE EXPRESSION PATTERNS OF FACIT COLLAGENS IN POST TRAUMATIC ANTERIOR ELBOW CONTRACTURE CAPSULES**

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**Background:** The elbow is pre-disposed to becoming stiff after trauma, and the pathogenesis of stiffness is not well understood. The elbow joint capsule is known to be a major contributor of elbow stiffness. Post-traumatic changes of the elbow capsule are scantily documented and poorly understood, whilst the contracted capsule is a known cause of elbow stiffness. **Hypothesis:** We hypothesized that several facit collagens are expressed in response to capsular injury, other than the well documented collagens I and III. **Materials and Methods:** We removed the anterior capsules of five post-traumatically injured and stiff patients' elbow joints, with two control anterior elbow capsular biopsies from non-injured, non-stiff patients undergoing therapeutic surgery for tennis elbow. Histological and western blot analysis was performed on the samples. **Results:** Western blot analysis corroborated Collagen I and III changes similar to literature based findings. Two distinct patterns of expression were identified. Collagen I predominantly elevated to a maximum level at 4-6 months post-injury and decreased to a stable lower level at 12 months. Collagens III, VI, and X elevated rapidly to a maximum level at 4-7 months, and rapidly decreased by 12 months. **Conclusion:** Our studies is the first to linearly document the expression patterns of 4 different collagens involved in post-traumatic elbow contracture. There is a clear difference in expression between major and facit collagens, that helps us to understand potential preventative strategies.

**Abstract no.: 35767**

**ARTHROSCOPIC ASSISTED REDUCTION & INTERNAL FIXATION OF GLENOID FRACTURE**

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Fracture of glenoid of scapula are rare. These fracture are commonly seen in middle age patient between 40-60 yrs,result often from a high energy trauma.Conservative treatment with immobilization accompanied with rehabilitation is generally recommended for scapular fracture and surgical treatment required for intarticular fractures with displacement. Achieving anatomical reduction of the articular surface is important in order to ensure that secondary arthritis donot develop and biomechanical function of the girdle maintained. Role of arthroscopic assisted reduction is well documented in management of tibial condyle fractures.Its use in glenoid fracture has been infrequently reported.We report the use of glenohumeral arthroscopy to facilitate reduction and fixation of glenoid fractures.A 24 yr old male patient mine worker by occupation had a history of road traffic accident with right shoulder injury for which X rays and CT scan were done and after clinical examination a diagnosis of intra articular fracture of glenoid was reached which was confirmed on CT scan. Arthroscopic assisted reduction & mini-open fixation through posterior approach was done through window between ISP & Teres Minor.Capsule was not incised. Reduction was visualised arthroscopically and appropriate placement of implant was also confirmed on C-Arm. Arthroscopy was used to check the reduction and since the capsule was not incised, immediate mobilisaton was started. The post operative period was uneventful patient regained the a painless complete range of motion at the end of six weeks.



**Abstract no.: 35771**

**UNDISPLACED TIBIAL FRACTURE LEADING TO VISUAL IMPAIRMENT**

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We present a rare case of a 27-year-old male that sustained an isolated undisplaced diaphyseal tibia fracture whilst playing rugby. There was no history of head or chest injury, and he was initially treated with a Plaster-of-Paris back slab, which was converted to a complete above knee cast. Due to the nature of fracture non-operative treatment was decided in consultation with the patient and he was discharged with analgesia and chemical venothromboembolic prophylaxis. Two days later at home he was found to be unresponsive. He was cyanosed with saturations of 48% on air and had a Glasgow Comma Scale (GCS) of 10/15 in the ambulance. In the emergency department, his GCS and oxygenation improved slowly and on arterial bloods gas his saturation were 87% on 60% oxygen. Chest x-ray that was reported as normal and a CTPA showed mild bilateral lower lobe consolidation and no pulmonary embolus. It was suspected to have chest infection and antibiotics were commenced. Four days later he complained of deteriorating vision with progressively worsening visual acuity. An ophthalmology consult was sought in which fundoscopy revealed multiple cotton wool spots and bilateral macular oedema consistent with Purtscher's-like retinopathy secondary to the undisplaced tibia fracture and a second diagnosis was made of possible fat embolism. Purtscher's like retinopathy is a recognised phenomenon in the context of trauma involving the head, chest or pelvis and it is believed due to microembolization of retinal vessels. To our knowledge this the first case report involving undisplaced tibial fracture.

**Abstract no.: 35772**

**RADIAL NERVE LOCALIZATION IN THE PROXIMAL FOREARM: A CLINICALLY USEFUL PATIENT NORMALIZED PARAMETER**

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**Background:** Accurately localizing the radial nerve in the proximal forearm has diagnostic and therapeutic implications. However, there are significant variations in anatomy, which have traditionally posed problems for defining useable parameters. We provide a non-invasive, patient-normalized localizing parameter of the radial nerve in the proximal forearm. **Methods:** The upper extremities of thirty-five cadavers were studied, with minimal disruptive dissection techniques. We measured the transepicondylar distance (TED), radial nerve distance from the lateral epicondyle in three different positions (neutral, pronation, and supination), and the radial nerve width. Two individuals performed the measurements using a digital caliper on two separate occasions, with inter-observer and inter-occasion blinding. **Results:** In forearm pronation, the radial nerve was identified within 1 cm of 100% of the TED in 50% of cases. In a neutral position, it was within 1 cm of 85% of the TED in 63.5% of cases. In the supinated position, it was within 1 cm of 70% of TED in 73.01% of cases. **Conclusions:** The mean radial nerve distance relative to the transepicondylar distance (TED) is approximately 100% when pronated, 85% in neutral, and 70% when supinated. Predictive accuracy was highest when the arm was in a supinated position, and in all cases the majority of specimens (90-95%) are within 2 cm of the forearm position specific percentage of TED. The location of the radial nerve in the proximal forearm may aid in diagnosis, injections, surgical approaches, and understanding neurological symptoms after injuries to the forearm.

**Abstract no.: 35774**

**DEGENERATIVE CHANGES OF THE BICEPS BRACHII INSERTION: A COMMON OBSERVATION IN HUMAN CADAVERS.**

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Background Knowledge of the morphometry of the biceps insertion is important for functional understanding and reconstructive procedures. The purpose of this study is to describe both the qualitative and quantitative morphometric aspects of the biceps insertion on the radial tuberosity. Methods Twenty-four preserved human elbows from twelve cadavers were carefully dissected and the insertions of the biceps conserved. The radius and the shape of the biceps insertion on the radial tuberosity were digitized using a three dimensional digitizer. The maximum length, width and surface area of the footprint were measured. The soft tissue status of the muscle insertions and shape of the footprints were qualitatively described. Results There were six male and six female donors. The mean age was 81.3 (68-92 years). The mean length of the biceps footprint was 24.1 +/- 2.4mm, the mean width was 11.1 +/- 2.6mm and the mean area of the footprint was 219.0 +/- 60.2mm<sup>2</sup>. Avascular, flimsy white connective tissue fibers, consistent with tissue fibrosis were observed in 46% of the specimens. Twelve footprints were described as ovoid in shape, nine were described as crescentic, and three were irregular and oblong. Discussion We have observed a high prevalence of degenerative changes in elderly cadavers, which may represent part of the natural aging process. The presented data may improve our understanding of biceps tendinopathy, its prevalence, and its natural history.

**Abstract no.: 35775**

**AUDIT ON THE EFFECTIVENESS AND SAFETY OF TRANEXAMIC ACID  
IN PRIMARY TOTAL KNEE ARTHROPLASTY**

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Introduction: Tranexamic acid(TXA) has been proven in lot of studies to be an effective drug in minimizing blood loss in primary joint arthroplasty. We started using TXA for primary total knee arthroplasties(TKA) in our department last year and did a comparative study analyzing the effectiveness of this drug on blood loss with those patients who did not receive it. Material and methods: During January to September 2012, 404 TKAs were done in 396 patients. Complex primary TKAs and patients who had previous open knee surgeries were excluded. This left 134 who had TXA and 238 who did not receive this drug. We are still in the process of collecting and analyzing data for the last 3 months of 2012. Results: The demographic data were comparable between the groups. There was no statistically significant difference in the preoperative Haemoglobin(Hb) between the two groups (TXA 13.4, Non TXA 13.5,  $P=0.902$ ) but very significant difference in terms of postoperative Hb, (11.4 and 10.8,  $P<0.01$ ), Drop in Hb (2.07 and 2.64,  $P<0.01$ ) and blood transfusion rates (1.49% and 7.9%, Fisher exact test;  $P<0.01$ ). There was no statistically significant difference ( $P=1$ ) in the rate of Deep Vein Thromobosis(DVT – 1TXA group, 2Non TXA group) and Pulmonary Embolism(PE – 1TXA group, 2Non TXA group). We have also assessed the length of stay and other complications. Conclusion: Administration of TXA had a profound impact in reducing postoperative transfusion requirements. It also reduces the length of stay. There was no increase in the rates of Venous Thromboembolism.

**Abstract no.: 35777**

**TREATMENT OF DISTAL RADIUS FRACTURE WITH VOLAR LOCKING PLATE**

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Distal radius fractures are the most common fractures overall. The introduction of the locking plates has broadened the surgical treatment of distal radius fractures. The aim of the study was to evaluate the results of surgical treatment of distal radius fractures with locking plate system. Eighty-four patients were treated in this way in our hospital between January 2010 and December 2012. The mean age of the patients was 56,2 (25-83) years; they were 53 women and 31 men. In all clinical cases a volar approach was used. Clinical outcome was evaluated through different scores; AP and lateral radiographs were carried out in the post operative (po) and at the 6th po week. The authors aim to present the results of open reduction and internal fixation of distal radius fractures with a volar locking plate system in our hospital.

**Abstract no.: 35781**

**THREE DIMENSIONAL MORPHOMETRIC ANALYSIS OF THE BRACHIALIS DISTAL INSERTION**

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**Introduction:** The purpose of this study is to describe the three-dimensional morphometry of the brachialis muscle at its distal attachment on the ulnar tuberosity. This knowledge may improve our understanding of the function of the brachialis and enhance the surgical planning of procedures relevant to the brachialis. **Methods:** Fifty cadaveric elbows were dissected and the brachialis' distal insertion was isolated on the ulna bone and probed with a three dimensional digitizer, to create a three-dimensional model of the footprint. The shape of the brachialis footprint was described in all 50 specimens. The length, width and area of each footprint were measured for 23 specimens using computer software. **Results:** Qualitative shape description of 50 specimens was conducted. The shapes of 30 footprints were described as proximally narrow and distally wide, 15 were described as proximally wide and distally narrow, and 5 footprints were irregularly shaped and classified as miscellaneous. Quantitative description of 23 specimens was performed. The mean direct length, surface-projected length, direct width, surface-projected width, and surface area were 32.2mm, 33.3mm, 9.3mm, 9.6mm, and 224.5mm respectively. The only significant differences observed were gender-based. Males had a longer footprint in both direct length ( $p = 0.002$ ) and surface-projected length ( $p = 0.001$ ). **Discussion:** The shape of the brachialis muscle insertion differed slightly among all the specimens without significant variation among gender or sides. There was a significant statistical difference in muscle length between males and females but no difference in the width and surface area.

**Abstract no.: 35787**

**LONG-TERM RESULT THE HIP ARTHROPLASTY IN PATIENTS WITH FUNCTIONALLY INFERIORITY OF ACETABULUM.**

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Duration of the stable and painless functioning of acetabular component of endoprosthesis, quality of life of patients, depends largely, from the anatomic full value of acetabulum which is support for the acetabular cup of endoprosthesis. Investigation of 172 patients with total hip arthroplasty with defects of acetabulum took place. Roentgenologic we looked alteration of transplants after in terms 3, 6 and 12 months. The defects of 1th type took place at 52 patients, 2th type in 46, 3th type in 27 patients. Bone the plastic arts were executed during 49 operative interferences, supporting constructions were used in a 26 case. Results of arthroplasty in patients with the defects of acetabulum in considerable to the measure relies on the volume of defects, therefore auditing total hip replacements at patients with the defects of acetabulum it is necessary to execute at first clinic - roentgenologic signs of instability of components of endoprosthesis. We got the best results of medical treatment at patients with ideal renewal of position of acetabulum and function of joint. The use of bone transplants, supporting constructions enables to pick up thread the anatomy of acetabulum, to implant endoprosthesis in the recommended position that creates favorable terms for the protracted functioning of artificial joint. total hip replacement at patients with the defects of acetabulum present by itself difficult operative interferences, and must be executed in clinics, which have the set of necessary instruments auditing and standart implants, banks of bone material and considerable experience of such operative interferences.

**Abstract no.: 35790**

**INFLUENCE OF LOCAL DEFECTS OF PROSTHETIC ACETABULUM ON STABILITY OF ACETABULAR COMPONENT OF ENDOPROTHESIS**

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The aseptic instability, exists by indication to revision endoprosthesis of hip joint. The authors compared the clinical and X-ray of 236 patients, in whom this complication arose, and 236 patients with stable endoprosthesis for a period of 10 years (control). The control group in previous, 70% planning and fulfillment of prosthetics were adequate, in contrast to the patients of control being investigated, where without the disturbances managed only in 20% of cases. Established that they occurred in 29% of cases in the group, and only 10% of control. Contact tensions and bone surface deformities of bone tissue in introduction of acetabular component of endoprosthesis into the intact acetabulum and with local defects of various size and localization have been studied on the basis on simulation modelling by means of finite elements. Under conditions of local defects of bone tissues the contact area decreased with increase of tension values in contact zones to 10.5 Mpa. Increase of size defect leads to appearance of concentration zones both the defect edge as well as in the intact bone up to 27 Mpa even in cement fixation. Defects over 50 sm<sup>3</sup> without plastic replacement led to appearance of overload zones and do not allow to reach acetabular component press-fit with cementless fixation. Fixations by means of screws, stable constructions, bone plasty increased contact area between endoprosthesis acetabular component and acetabulum bed decreasing local pressure and it depended on the method of choice during revision of arthroplasty in the presence of acetabulum defects.



**Abstract no.: 35791**

**EVALUATION OF KNEE FLEXION STRENGTH BEFORE AND AFTER ACL RECONSTRUCTION WITH AUTOGENOUSLY HAMSTRING TENDON**

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Introduction: Anterior crossiate ligament (ACL) is an anterior knee stabilizer and tearing of it can cause knee instability. If turned ACL case symptoms and giving way should be reconstructed before DJD of knee. Several methods can be used for ACL reconstruction but the most common method use four strand hamstring tendon otograft that can case weakness in knee flexion strength. Methods: A prospective clinical trial was done in 30 patients with ACL tearing that entered Baqiyatallah hospital for ACL reconstruction in Khordad and Tir 1388. Flexion strength of ACL tread knees was measured before and 2-4-6 and 12 month after ACL reconstruction in flexion degrees 20-45-90-110. The average analyzed with paired test. Result: Flexion strength of knees one year after surgery was less than before surgery in flections degrees 90-100 ( $p=0.000$ ) .With physiotherapy and exercise of hamstring strengthening the default decreased. The most default in flexion strength was in flexion degrees of 90 and 110 ( $p=0.000$ ). Conclusion: Some studies agree with lowered flexion strength of knee after ACL reconstruction with hamstring tendon otograft and some other don't. In this study we showed that knees strength was lowered in high degrees of knee flexion after ACL reconstruction with hamstring tendon otograft.

**Abstract no.: 35794**

**COMMINUTED OLECRANON FRACTURE FIXATION WITH A PRE-  
CONTOURED PLATE - A BIOMECHANICAL STUDY**

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**INTRODUCTION:** Olecranon fractures are a common and plate fixation techniques exist for the management of these injuries. The purpose of this biomechanical study is to validate whether there is acceptable stability and fixation in a simulated comminuted olecranon fracture. **METHODS:** Five samples of 4th generation composite sawbones and five fresh frozen human cadavers were utilized. The cadaveric specimens had undergone DEXA scanning to quantify bone quality. The composite and cadaveric bones were prepared by creating a comminuted olecranon fracture and fixed with a pre-contoured olecranon plate. Construct stiffness and strength was measured by subjecting specimens to ramp load until failure (Instron), in conjunction with fracture site motion (DVRT). **RESULTS:** There was a significant difference in fixation stiffness ( $p < 0.033$ ) and strength ( $p < 0.007$ ) between the 4th generation composite bones and human cadaver bones, ranging 4.69–6.80 Nm/mm and 6.31–7.72 Nm/mm, respectively. All failures for composite bones consisted of failure of the bone-hardware junction, whilst failures of cadaveric bones were at olecranon / triceps fixation point. No correlation was found between the DEXA results and the stiffness. **DISCUSSION and CONCLUSION:** There is significant difference in stiffness/load to failure (criterion of 2mm gapping) in comminuted olecranon fractures between composite and cadaver specimens. The range was found for the stiffness in the pre-contoured olecranon plating specimens. Anatomically pre-contoured olecranon plate constructs are sufficiently robust to prevent excess fracture-site motion, and maintain fracture fixation, when subjected to physiological forces. Clinical studies are needed to obtain clinically relevant validation of this conclusion.

**Abstract no.: 35795**

**DIFFERENTIATED PLANNING BY REVISION ARTHROPLASTY.**

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In work, were presented results of treatment of patients with aseptic instability of acetabular component of hip joint endoprosthesis with defects of bony tissue. According to the results of clinical-roentgenologic investigation of 188 patients with aseptic loosening of acetabular component of endoprosthesis in average in  $5,2 \pm 2,8$  years after revision it has been shown that the volume of bony bed deficiency is a main definition that leads to component migration and correlates conversely with its function. In accordance with 106 functional studies it has been determined early sonographic and roentgenodensitometric criteria of diagnosis for aseptic loosening endoprosthesis components. According to the results of mathematical modelling it has been found that disorders of implantation position of artificial cavity leads to decrease of area its contact with bony bed, enlarges mechanical stress in bony tissue beyond the limits of its strength ( $50 \text{ kG/cm}^2$ ). Displacement of implantation angle of revision cavity more than  $12^\circ$  and decrease contact area with bony bed lower than 62 % is biomechanical prerequisite of revision endoprosthesis destabilization. The defects exceeding  $50 \text{ cm}^3$  without their plastic replacement lead to appearance of overload zones and do not allow to reach fixation of revision cementless acetabular component with press fit. Differentiated technique of revision prosthetics in patients with defects of hip cavity has allowed to obtain the following results: excellent results were noted in 67 cases (35,6 %), good results included 84 cases (44,7 %), satisfactory results were marked in 33 cases (17,5 %) and unsatisfactory results included 4 cases (2 %).

**Abstract no.: 35797**

**IMMEDIATE INTRAMEDULLARY NAILING FOR OPEN TIBIAL SHAFT FRACTURES**

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**【Introduction】** The timing and method of definitive fixation of open tibia shaft fractures have been controversial. In recent years immediate intramedullary nailing is reported to lead to better outcomes than conventional techniques such as casting. This report evaluates our treatment for open tibial fractures with immediate reamed intramedullary nailing. **【Patients and methods】** 13 cases of tibia fractures were selected where postoperative observation was possible. Patients were all males between 20-74 years of age (average age of 37.5). Of the 13 cases 11 were due to traffic accidents, 1 from sports and 1 from a crush injury. Of these 13 cases the number of fractures, under the classification of Gustilo and Anderson, of types I, II and IIIA were 1, 7 and 5 respectively. After debridement and irrigation, the fracture was fixed using reamed intramedullary nailing. **【Results】** In all cases no postoperative infection was observed. Furthermore, complete union occurred in all cases. **【Conclusion】** Infections are common in the treatment of open tibial shaft fractures due to impaired blood flow from soft-tissue damage. Reaming can further choke blood supply resulting in increased rates of infection. However, in our study we found that with immediate reamed intramedullary nailing no infection and better union was observed with no added complications. Union may have resulted from better stability of the reamed nail.

**Abstract no.: 35803**

**DIRECT INTERNAL FIXATION WITH MULTIPLE HEADLESS SCREWS FOR COMPLEX HOFFA FRACTURES**

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Hoffa fractures are rare in isolation and usually occur as part of a complex distal femur fracture. surgical treatment of displaced fractures involve difficulties in access and method of internal fixation. 22 isolated displaced Hoffa fractures (males -17, females - 5; mean age  $42 \pm 6$  years) were treated with direct reduction under vision and internal fixation with multiple headless screws. 18 fractures were approached anteriorly and 4 were approached posteriorly. Disimpaction of the articular surface and bone grafting was required in 3 patients. Anatomical articular restoration and bone union was achieved in all patients without any loss of reduction. All patients had returned to preinjury level of activity and the mean IKDC score at 1 year follow up was  $81 \pm 9.2$ . Direct fracture access increases the chances of achieving anatomical reduction and internal fixation with multiple 2.4 mm headless screws achieves good stability of these often small fragments and allows early mobilisation.

**Abstract no.: 35810**

**ROLE OF PERCUTANEOUSLY IMPLANTED AUTOLOGOUS BONE MARROW DERIVED MESENCHYMAL STEM CELLS IN OSTEOARTHRITIS KNEE**

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**BACKGROUND:** There is no effective therapy available today that alters the pathobiologic course of osteoarthritis. Recent advances have shown Mesenchymal stem cells to be a potential disease modifying treatment. Considering the tissue differentiation property and vast paracrine effects of MSCs we proposed the present study to find out the safety and efficacy of MSCs in osteoarthritis of knee joint. **METHODS:** 12 patients with grade 1 and 2 bilateral osteoarthritis knee (Ahlbäck's radiological grading) were selected. This being a pilot study, no controls were selected for comparison. 8 to 10 ml of bone marrow was aspirated under strict aseptic precautions from the iliac spine. After the stem cell culture and expansion for 4-6 weeks the MSC suspension in 10xPBS was injected directly into the 24 knees by lateral approach. The outcome was evaluated by modified VAS score, WOMAC score, KOOS and MRI measurement of knee articular cartilage integrity by the modified WORMS score. **RESULTS:** Statistically significant improvement in VAS score, total WOMAC score and total KOOS score was observed from pre injection to 1st follow up at 6 weeks and from pre injection to 2nd follow up at 6 months. There was also a significant improvement from 1st follow up to 2nd follow up. The modified WORMS score showed a statistically significant decrease of 1.49%. **CONCLUSION:** Intra-articular injection of autologous bone marrow derived culture-expanded MSCs can be considered a potential treatment of early osteoarthritis knee which relieves pain, stiffness, improves physical functions, and improves the articular cartilage integrity. Well designed, large scale randomized control trials are necessary.

**Abstract no.: 35817**

**THE ANALYSIS OF NEW TECHNIQUE OF HALLUX VALGUS TREATMENT RESULTS**

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Introduction. Troughing is a well described complication of diaphyseal and distal osteotomies used for Hallux Valgus (HV) surgical correction. Its frequency varies in different reports and reaches up to 30%. We suggest an original method of Hallux Valgus treatment which comprises diaphyseal rotational osteotomy, bone fragment impaction and adductor refixation using an original anchor system. Methods. Over the period 2009-2012 we performed 42 operations on 21 patients with HV of moderate and severe stages. Some patients underwent this treatment simultaneously on both feet (10 patients, mean AOFAS score 42.3, mean intermetatarsal angle 17.8), others - subsequently one by one (11 patients, mean AOFAS score 45.1, mean intermetatarsal angle 17.1). The results of treatment were estimated using AOFAS scale, X-ray and podography preoperatively and subsequently 3, 6 and 12 months after the operation. Results. We received good and excellent results in 17 patients (80.6%) and satisfactory results in 4 patients (19.4%). Mean AOFAS score was 82.3, mean intermetatarsal angle 7.5. There were no unsatisfactory results registered. No troughing complications registered. We didn't find any significant difference between these two groups. This technique proved to be effective and safe dealing with HV especially in patients with risk of troughing with severe transverse platypodia and can be used on both feet simultaneously .

**Abstract no.: 35835**

**THE FALSE PROFILE VIEW OF THE HIP. CORRELATION WITH INTRA-OPERATIVE FINDINGS . A CASE FOR CHANGE**

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AIM— To assess the correlation of articular cartilage loss /osteoarthritis (OA) at operation in comparison to the lateral view (LV) and the false profile view (FPV) radiographs of the arthritic hip. Methods and Study-- A prospective study approved by the ethical committee of the hospital. One hundred consecutive patients over 2 years who presented with clinical features of osteoarthritis were evaluated. The standing plain Antero-Posterior (AP) in this group of patients showed preservation of superior joint space. They underwent LV and FPV of the affected, arthritic hip. Twenty two of these patients underwent Total Hip Arthroplasty (THA) after failure of conservative methods of treatment. At THA the femoral head and acetabulum were evaluated for loss of articular cartilage. Photographs were taken to confirm the findings. Results and Conclusion— All 22 patients who underwent THA had complete loss of articular cartilage of the femoral head posteriorly and medially. This correlated with the loss of joint space in the FPV but not on the LV. We have since stopped using the LV and moved to using the FPV in the assessment of OA of the Hip. WE advocate to the use of the FPV in the assessment of OA of the Hip.



**Abstract no.: 35839**

**SINGLE DOSE ANTIBIOTIC PROPHYLAXIS IN TOTAL JOINT REPLACEMENT. IS IT SAFE? A PROSPECTIVE STUDY**

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AIM— Infected joint replacements remain a cause very high morbidity. Three doses of antibiotics have routinely been used as a prophylaxis along with other modalities to reduce the infection rate in Total Joint Arthroplasty (TJA). Hospitals in the UK are judged against the prevalence of Clostridium Difficile (CD) infections. One of the side effects of Cephalosporins is CD. We assessed the prevalence of wound infections both superficial and deep prospectively in patients undergoing TJA with a single dose of a second generation antibiotic Cefuroxime. Methods— A prospective study approved by the ethical committee of the hospital. One hundred and eighty five consecutive patients who underwent TJA with a single dose Cefuroxime as prophylaxis were evaluated prospectively. These patients did not have significant co-morbidities. The 185 patients underwent TJA between September 2012 to January 2013. All had a minimum of 6 weeks follow up. Results— All patients were evaluated by the Joint Replacement Nurse/Doctor at the out patient clinic. Two patients (1.08%) had superficial infection. This cleared with treatment of oral flucloxacillin for 7 days. There were no deep infections. Early results show that the use of a single dose Antibiotic in the form of Cefuroxime for prophylaxis in patients without significant co-morbidities is safe. We await our long term results including the ongoing retrospective study

**Abstract no.: 35846**

**VERTEBRAL FRACTURES – AN UNCOMMON COMPLICATION FOLLOWING FIRST EPISODE OF A CONVULSIVE SEIZURE**

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Background: Vertebral fractures occur in patients with convulsive seizures. It has been reported that the incidence of vertebral fractures associated with convulsive seizures is 0.95-16%. Fractures result from trauma due to fall or accident during seizures. These patients have associated osteopenia. Non-traumatic vertebral fractures that occur from violent contractions of the paraspinal muscles during a convulsive seizure is rare. Case Report: We present an 18-year-old male, not a known epileptic who experienced the first episode of convulsive seizure. He had been admitted for fever. There was no history of overt trauma. Next morning, the patient complained of mild back pain and chest pain. Musculoskeletal examination revealed paraspinal muscle spasm and tenderness in mid dorsal region. His neurologic examination was unremarkable. Plain radiographs and MRI scan confirmed compression fractures of D5, D6, D7, D8 vertebrae. Hormonal and metabolic profiles and BMD were normal. Detailed neurological work up revealed no organic cause for seizures. No further episode of seizures occurred for the next four years. Discussion: In 1907, Lehndorff was first to suggest strong muscle contractions during convulsive seizure can cause vertebral compression fractures. Vasconsoles suggests a rate of 15% of primarily asymptomatic fractures caused by seizures. Conclusion: Forceful muscle contractions during a single episode of convulsive seizure occurring for the first time, can result in vertebral compression fracture, even in a normal healthy individual. A high degree of clinical suspicion is needed whenever an epileptic patient complains of back pain. Such patients may be subjected to thorough radiological evaluation and managed accordingly.

**Abstract no.: 35849**

**ROLE OF HEMIARTHROPLASTY IN INTERTROCHANTERIC FRACTURES IN ELDERLY OSTEOPOROTIC PATIENTS**

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**Purpose:** Management of intertrochanteric fractures in elderly osteoporotic patients is a challenging problem. Cutting out of implant and varus malpositioning of fragments is often seen if early ambulation is allowed while prolonged bed rest leads to complications such as bed sores, pneumonia, and deep vein thrombosis in such patients. Purpose of this study was to assess the role of hemiarthroplasty in such subjects. **Material and Methods:** 25 patients were treated at tertiary care centre with hip hemiarthroplasty in intertrochanteric fractures. Mean age was 77.8 years. Young patients, stable fractures and patients with active infection were excluded. 72% patients in the study were osteoporotic and 84% had associated co morbidity. Preoperative ambulatory status of all patients was noted. If calcar was deficient, calcar was reconstructed with a cut autograft from the femoral neck. **Results:** Follow-up for one year and evaluation using Modified Harris Hip Score was done except one patient who expired in postoperative period. He had poor cardiopulmonary reserve preoperatively. Average period of full weight bearing was 5.5 days. Excellent/Good results were seen in 20 patients(80%). One of the patients developed decubitus ulcer on the back and was labeled as failure. Dislocation of prosthesis was not seen. One patient had shortening >1.5cm due to sinking of prosthesis. **Conclusion:** Although majority of patients with intertrochanteric fractures can be successfully managed with osteosynthesis, older patients with severe osteoporosis and associated co morbidity may benefit from prosthetic replacement. However large scale studies are required to prove it conclusively.

**Abstract no.: 35850**

**TUBERCULOSIS OF STERNO CLAVICUALR JOINT: A REPORT OF 6 PATIENTS**

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We here present clinical and radiological follow up of 6 patients with confirmed diagnosis of sternoclavicular joint tuberculosis. Patients age varied from 21 to 64 years. There were 2 female and 4 males. All patients presented to the outpatient department with pain and swelling over sternoclavicular joint. Four out of six patients had constitutional symptom. One patient had associated lytic lesion of ulna, one had pulmonary Koch's, one patient had chest wall abscess. Plain radiograph and CT scan was done for all the patient along with routine haematological investigation. The diagnosis was confirmed with the help of FNAC or histopathology. All the patient were started on standard category I DOTS antitubercular therapy. Patients were followed up at 1 month interval to evaluate clinical sign of healing and serial ESR monitoring. ATT was continued for total of 9 months. Tubercular lesion healed in all but one patient, who required drainage of the abscess. We conclude that sternoclavicular joint is an uncommon site for tuberculosis. Careful evaluation of the patient is of utmost important because if untreated this pathology can cause serious complication.

**Abstract no.: 35851**

**VERTEBROPLASTY FOR VERTEBRAL COMPRESSION FRACTURES-  
PRACTICAL TIPS TO REDUCE COMPLICATIONS**

Sanjeev Motilal BHANDARI

ASHWINI SAHAKARI RUGNALAYA, SOLAPUR (INDIA)

Vertebroplasty is a minimally invasive surgical technique performed under local anaesthesia by injecting bone cement into a vertebral body to lend it immediate structural support. It is very useful to relieve agonizing pain and disability associated with vertebral compression fractures, mainly osteoporotic fractures in elderly, as well as other pathologies like haemangioma, secondaries and other neoplasms. In suspected cases, tissue diagnosis using biopsy through the same needle is another major advantage. Though quite safe, fear of complications like nerve root or dural trauma during needle insertion and leakage of bone cement posteriorly causing root or cord irritation has restricted wide acceptance of this beneficial technique. After performing vertebroplasty in 96 patients of osteoporotic vertebral wedge compression fractures and 10 cases of vertebral body pathologies leading to collapse over last 8 years, a few technical tips have been learnt to perform the surgical steps smoothly and safely avoiding complications and this paper details these tricks at every step of the procedure.

**Abstract no.: 35852**

**OUTCOMES OF TRAINEES' EXPERIENCE OF COMPUTER ASSISTED TOTAL KNEE REPLACEMENT WITH MINIMUM FOLLOW-UP OF 5 YEARS**

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Introduction: Computer assisted total knee replacement (CATKR) has been shown to give reproducible and accurate alignment of components. We show our experience of CATKR performed by junior staff under supervision, looking at component alignment and patient reported outcome measures. Objectives: Assess radiological and clinical outcomes of Computer Assisted Total Knee Replacements performed by trainees. Methods: Pre-operative Knee Society Scores (KSS) were recorded and all patients underwent CATKR by a trainee who was supervised by the senior author. The Stryker navigation system was used and a Triathlon Total Knee replacement was implanted. Post-operatively patients had long leg Maquet views to assess component alignment and Post-operative Knee Society Scores at a minimum of 5 years were recorded. Results: Pre-operatively the KSS score was 45.6 (24-59) and function 54 (42-65) with post operative scores for KSS 80.0 (55-94) and function 81 (55-100). Post-operatively the average mechanical tibio-femoral angle for the CATKR group was 1.88 degrees varus, the tibial component angle was 90.63 degrees and the femoral component angle was 89.88 degrees. Conclusions: This is the first study of its kind looking at the medium term outcome of computer assisted total knee replacements performed by trainee surgeons. Our study demonstrates that satisfactory outcomes can be achieved by trainee surgeons undertaking Computer assisted TKR. Despite the learning curve associated with component positioning, trainees were able to achieve satisfactory alignment using the navigation system.

**Abstract no.: 35856**

**HOFFA FRACTURE ASSOCIATED WITH PROXIMAL TIBIAL FRACTURES- A CASE SERIES OF 10 PATIENTS**

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Coronal fractures of the femoral condyle are rare entities and were first described by Friedrich Busch in 1869, later named after Albert Hoffa in 1904. It is classified as a type 33B3 fracture according to the AO (Arbeitsgemeinschaft für Osteosynthesefragen) classification. A solitary Hoffa fracture is a rare occurrence, but the fracture is not uncommon when associated with supracondylar or intercondylar fractures of the femur sustained by high energy trauma. Their presence warrants a thorough workup for other associated injuries. Hoffa fracture associated with proximal tibial injury is extremely rare injury. We here report clinical presentation and follow up of 10 patients with such combination of injury, managed by standard operative treatment guideline and discuss in detail the mechanism of action and the management principles of these fractures. To the best of our knowledge, no such series has been reported previously. Etiology, prognostic factors, and treatment options are discussed, and the literature is briefly reviewed.

**Abstract no.: 35860**

**RESULTS OF ANTERIOR DEBRIDEMENT AND SPINAL COLUMN RECONSTRUCTION IN TUBERCULOSIS OF SPINE WITH THORACIC INVOLVEMENT**

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**Introduction** Surgical debridement and stabilisation is needed to decompress the cord and prevent progression of deformity in patients with tuberculosis of spine having neurological involvement. This prospective study was undertaken to determine the efficacy of anterior radical debridement and reconstruction in the management and neurological recovery at one year postoperative in patients with caries spine with neural deficit. **Methods** 47 patients of thoracic involvement, 35 male, 12 female, were included and followed up for 1 year after surgery. The mean age was 39.45 years. 27 patients had complete paraplegia and 20 patients had paraparesis. Objective of surgery was adequate debridement of diseased foci, decompression of cord and stabilisation of spine with correction of deformity. This was addressed with a titanium mesh cage filled with impacted bone graft and supplemented with 2 Moss Miami screws and a rod construct. **Results** 43 patients had complete and 4 patients had incomplete neurologic recovery. Neurological recovery started as early as first post-op week (range 3 days to 12 weeks). The ASIA motor score improved from 60.80 (60.80 +/- 20.206) before surgery to 73.55 (73.55 +/- 13.828) at 1 month and 95.30 (95.30 +/- 11.934) at 12 months after surgery. All 18 patients with bladder and bowel involvement recovered normal bladder and bowel functions at 6 months. There was no recurrence of infection. Bony fusion was achieved in all patients and there were no implant failures. **Conclusion** Anterior debridement, decompression, stabilisation and anti-tubercular chemotherapy resulted in neurological recovery in the majority of the patients.



**Abstract no.: 35863**

**ULNAR STYLOID FRACTURE IN DISTAL RADIUS FRACTURES  
MANAGED WITH VOLAR LOCKING PLATE- TO FIX OR NOT??**

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**INTRODUCTION:** Ulnar styloid has attached radioulnar ligaments and is potentially capable of causing distal radioulnar joint(DRUJ) instability. In presence of associated DRUJ instability, literature suggests that these fractures should undergo ORIF. However, in absence of DRUJ instability, effects of ulnar styloid fractures are debatable. We evaluated the effect of associated ulnar styloid fracture in distal radius fractures, without DRUJ instability, managed with volar locking plate. **METHODS:** We did prospective study of 47 patients with unilateral distal radius fractures, without DRUJ instability, managed with volar locking plate. Patients were divided into two groups depending on presence (Group A, n=28) or absence (Group B, n=19) of ulnar styloid fracture. Group A had 12 females and 16 males. Group B had 7 females and 12 males. At final follow up, the two groups were compared clinico-radiologically and outcome assessment was done on basis of Demerit point system of Saito. **RESULTS:** At final follow up distal radius fracture healed in all patients, but only two patients in Group A attained union of ulnar styloid fracture. When the two groups were compared, the difference in the functional parameters viz wrist movements and grip strength was insignificant. In Group A, Demerit point system of Satio yielded excellent results in 78.5 % and in group B results were excellent in 78.9%. **CONCLUSION:**Non-union of the ulnar styloid fracture does not necessarily lead to ulnar sided wrist pain. Irrespective of the presence or absence of an ulnar styloid fracture volar locking plate provides good functional and radiological outcome.

**Abstract no.: 35873**

**LIMB SALVAGE FOR MALIGNANT PROXIMAL FEMORAL TUMOURS :  
OUR EXPERIENCE OF A TERTIARY CARE CENTRE**

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Introduction: Proximal femur is a common site for primary malignant and metastatic lesions. The resection and reconstruction at this site is challenging. Endoprosthetic reconstruction is now widely accepted for skeletal defects following resection of bone tumours. This study was done with the aim to assess the clinical and functional outcomes following proximal femoral tumour prosthesis reconstruction in these patients. Methods: We treated 18 consecutive patients with metastasis to/ primary sarcomas of proximal femur with endoprosthetic reconstruction from June 2006 to May 2009. The cases were Chondrosarcoma (n=8), Osteosarcoma (n=5), Ewings Sarcoma (n=1) and metastasis (n=4). At the time of final follow-up functional outcome was assessed using Toronto Extremity Salvage Score (TESS) in addition to factors like patient survival, implant survival, local control of disease and complications. Results: There were 10 male and 8 female patients. The mean age was 46.2 years (range 23.7 to 62.6 years). The mean follow up was 4.8 years (range 0.2–3.4 years). Ten patients expired leaving a total of 8 patients at the time of final follow up. There was one dislocation following surgery and one patient developed deep infection which was managed with hip disarticulation. The mean TESS score was 63% (52%–80%). Conclusion: Endoprosthetic reconstruction is a good option with low complication rate and acceptable function which outlives the life expectancy of the patients with primary bone tumours/metastasis of the proximal femur.

**Abstract no.: 35874**

**FUNCTIONAL OUTCOME OF MPFL RECONSTRUCTION IN RECURRENT DISLOCATION OF PATELLA**

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Introduction: Recurrent dislocation of the patella can follow a violent initial dislocation, but it occurs more often in knees with one or more underlying anatomical abnormalities that predispose the patella to dislocation or subluxation. The main factor that results in recurrent patellar dislocation is incompetence of the medial patello-femoral ligament which is extra synovial. Aim: The aim of surgery is to stabilize the patella, prevent further episodes of dislocation and allowing the patient to renew his day today activities. If the MPFL is no longer attached to the medial epicondyle, simply tightening the retinaculum is not usually sufficient and the retinaculum subsequently loosens again. At the time of doing a medial plication, it is important to check that there is some attachment to the medial epicondyle, and if not, a graft can be used to reconstruct the medial patello-femoral ligament. MPFL can be reconstructed by using semitendinosus or the inner edge of the lower end of the quadriceps tendon or the strip of loose retinaculum that is excised. Materials & Methods: A prospective study was done in 20 patient with Recurrent dislocation of patella treated by MPFL reconstruction using medial retinaculum strip as a graft and the functional outcome was assessed. Result: Out of 20 patients we have 18 patients with a follow up with full range of motion and no episodes of recurrence of dislocation in all.

**Abstract no.: 35888**

**SURGICAL TREATMENT OF SCHEUERMANN'S KYPHOSIS - CLINICAL RESULTS OF SURGICAL TREATMENT -**

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Scheuermann's disease is defined as a thoracic hyperkyphosis that occurs during childhood. The incidence has been estimated at 0,4% to 8,3% of the population. The deformity treatment is mostly nonoperative, however, surgery is the only one that allows an effective correction of the deformity, indicated in kyphosis greater than 65/75<sup>0</sup>. Retrospective review was conducted between 2004 and 2011, on 13 patients with a mean age of 16,5 years (min-12;max-23), who underwent surgical correction of Scheuermann Kyphosis. Three of these patients had also an average scoliosis measured 29.2<sup>0</sup>. Nine patients who underwent with a posterior approach (PSF) and four with anterior/posterior fusion (A / PSF). The last instrumented vertebra was the first lordotic disc (PDL) in 5 cases, PDL +1 in 3 cases, neutral disc (DN) in 2 and DN-1 in also 2 cases. With 60% implant density were performed 7 hybrid instrumentation and 6 pedicle screw instrumentation. Average kyphosis measured 72<sup>0</sup> before surgery and 41<sup>0</sup> at a mean follow-up of 49 months (min-11;max-84), which correspond to 43% kyphosis correction (44% PSF;42% A /PSF), with a loss of correction measured 3<sup>0</sup> (11%PSF; 3%A /PSF). The values were independent on the type of instrumentation or implants density. The average functional score SRS-22 was 4.3 (min-3, 4;max-4, 9) in five possible points. Two cases developed proximal junctional kyphosis, requiring extension of instrumentation. The results presented in this series are consistent with those presented in the literature. The anterior release did not contribute to a significant improvement of clinical outcomes.

**Abstract no.: 35891**

**CERVICAL EXTRACRANIAL VERTEBRAL ARTERY ANEURYSM IN NEUROFIBROMATOSIS TYPE 1**

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The Neurofibromatosis Type 1 (NF1) is known to be associated with vascular lesions. Association with extracranial vertebral artery aneurysms is very rare. The authors present a case of a cervical extracranial vertebral artery aneurysm in a patient with NF1. In this case, the patient was referred to our hospital because neurologic compromise. The imagiologic findings demonstrated a huge mass compressing the spinal cord, that were interpreted as a neurinoma plexiform. Intra-operatory was observed an abnormal vascular morphology. Additionally, angiography diagnosed the lesion as a vertebral artery aneurysm. The lesion was successfully treated by endovascular occlusion and coils with a gradual resolution of the neurologic deficits. This cases serves as a reminder of the importance of ruling out a vertebral artery aneurysms with a previous angiography when managing cervical lesions in patients with NF1.

**Abstract no.: 35894**

**SIMPLE TECHNIQUE FOR PERCUTANEOUS SCREW FIXATION OF  
DISPLACED TALAR NECK FRACTURES**

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We present a simplified technique of percutaneously fixing closed talar fractures by a system of following standard landmarks and putting in 2 to 3 cannulated screws to hold the fracture stable. We have followed 10 cases using this method from fixation to union in 3 months time. We believe the chances of getting the screw position is minimal by this technique.

**Abstract no.: 35896**

**CLINICAL OUT COMES WITH CORMET HIP RESURFACING ARTHROPLASTY FROM AN INDEPENDENT CENTRE-AT A MEAN FOLLOW-UP OF 5 YRS.**

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Abstract Background: Hip resurfacing with metal on metal bearing has been used as an alternative to traditional total hip arthroplasty, especially in young and active patients. Although, there are specific risks associated with hip resurfacing. These include the risk of femoral neck fractures, metal ion release, and various adverse reactions to metallic debris. Methods: One hundred and ten patients had 116 cormet hip resurfacings under the care of the senior authors between Mar 2002- Jan 2009. Data was collected retrospectively from the case notes, theatre operation notes and radiographs. Pre and post operative Oxford hip score and SF-12 scores were recorded. Results: Between March 2002 and January 2009 a total of 116 consecutive cormet hip resurfacings were implanted in 110 patients at our centre. There were 76 males and thirty four females, with 60 right sided, 44 left sided and 6 bilateral procedures. The mean age was  $60 \pm 7$  (49-72) years. The main indication for surgery was primary osteoarthritis. Overall survival was 93.1 % at average follow-up of  $5.0 \pm 1.49$  years, with eight revisions, 5 in women and 3 in men. There were 3 femoral, 2 acetabular failures, 1 femoral neck fracture, 1 revision for groin pain (Pseudo tumour) and one for psychological reasons. Conclusion: The result from our study is comparable with published data on cormet HRA device, but in mid or long term when compared with THA the results are unsatisfactory. Further, senior authors are of a opinion that hip resurfacing arthroplasty is not an acetabular bone preserving procedure.

**Abstract no.: 35897**

**DISLOCATION AFTER TOTAL KNEE ARTHROPLASTY – AETIOLOGY AND MANAGEMENT IN 4 CASES.**

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Introduction: Dislocation following total knee arthroplasty (TKA) is a major complication reported rarely. We analyse the patterns of dislocation with factors related to each of them. Methods: Four patients of dislocation, three following primary TKA, (2 cruciate retaining and one posterior stabilised) and one following revision knee arthroplasty with Rotating Hinge Knee (RHK) are reported. The causes for the dislocations were an imbalance of the flexion gap (n=1), high BMI patient in extreme flexion causing posterior impingement leading to increased anterior jump and dislocation (n=1), loose tibial component with posterior tilt of tibial prosthesis leading to dislocation (n=1), and breakage of hinge pin of RHK with dislocation (n=1). 2 patients had prior pain, giving way, joint effusion and difficulty in climbing stairs while other two patients presented acutely with dislocations. All four patients suffered posterior dislocation. An urgent closed reduction of dislocation was performed under general anaesthesia in 3 patients and was managed at a later date by revision knee arthroplasty. Two patients had a posterior stabilised TKA designs and one had RHK. The fractured Hinge pin of RHK patient was revised using new hinge pin. Results: Outcomes were considered good in three cases and fair in one, using Knee society scores. Two patients had minimal residual lag of active extension. Fortunately no patient had neurovascular complications. Conclusion: Further episodes of dislocation or instability will be prevented by identifying and treating the cause of instability. The increase in the level of constraint and correction of previous technical mistakes is mandatory.



**Abstract no.: 35899**

**STRUCTURAL-FUNCTIONAL STATE OF BONE IN POSTMENOPAUSAL WOMEN WITH HIP OSTEOARTHRITIS**

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Osteoarthritis and osteoporosis are the common diseases in postmenopausal women. The aim was to study the particularity of structural-functional state of bone in postmenopausal women with hip osteoarthritis (HOA). Material and Methods. 69 women in postmenopausal period aged 50-79 years old with HOA were examined (mean age -  $65.0 \pm 2.3$  years, weight -  $74.0 \pm 5.4$  kg, height -  $164.0 \pm 3.7$  cm, duration of postmenopausal period -  $16.0 \pm 5.3$  years). The control group consisted the 60 healthy women without HOA. A diagnosis of osteoarthritis was performed due to the ACR criteria's. Women with primary knee osteoarthritis were excluded from the study. Bone state was measured by Dual-energy X-ray absorptiometry "Prodigy"(DXA) and calcaneus's quantitative ultrasound (QUS) densitometry "Sahara". Results. In women with HOA some indices of X-ray absorptiometry were significantly higher compared with healthy women (bone mineral density (BMD) of Trunk:  $F=7.71$ ,  $p=0.006$ ; Spine:  $F=6.32$ ,  $p=0.01$ ; Neck:  $F=4.08$ ,  $p=0.04$ ; Wards area:  $F=4.69$ ,  $p=0.03$  and Total BMD:  $F=5.61$ ,  $p=0.02$ ). Indices of ultrasound densitometry in women with HOA also were significantly higher compared with healthy women (Est BMD:  $F=6.49$ ,  $p=0.01$ ; BUA:  $F=9.8$ ,  $p=0.002$ ; SOS:  $F=3.45$ ,  $p=0.05$ ). In postmenopausal women we did not found significant relationship between some indices of DXA (L1-L4, total hip and radius) and presence of hip osteoarthritis. Also we found some differences in indices of ultrasound and X-ray densitometry in depend of stage of HOA. Conclusion. Presence and stage of HOA had significantly influence on ultrasound densitometry and DXA indices. It is important in assessment of bone state in women in postmenopausal period with hip osteoarthritis.

**Abstract no.: 35900**

**RESULTS OF MODULAR BIPOLAR HEMIARTHROPLASTY FOR FRACTURE NECK OF FEMUR: A COMPARATIVE STUDY OF CEMENTED VERSUS UNCEMENTED PROSTHESIS.**

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**Background:** The intracapsular fracture neck of femur in elderly population is associated with rise in mortality and morbidity after the fracture. The primary goal of treatment is to return the patient to his or her pre-fracture functional level. The evidence in the literature for comparative study of functional outcome in cemented and uncemented type of hemiarthroplasty prosthesis are limited. **Material and Methods:** We performed the study in thirty patients of age group 55 – 90 years with intracapsular fracture neck of femur who underwent bipolar hemiarthroplasty, comparing a cemented (19) with uncemented hydroxyapatite-coated prosthesis (11), both with modular bipolar head for the period over 2 years. (2010 – 2012) **Results:** The operative blood loss & percentage of blood transfusion was found to be more in case of cemented type of prosthesis used by 50.62 ml and 74 % respectively. The mean difference in the operative time was 10 -11 minutes less in uncemented prosthesis. We had good results in all the patients in terms of return to pre-fracture level of activity, independent ambulation. Patients treated with cemented prosthesis had average HHS 82.96 and uncemented prosthesis average HHS 79.63. **Conclusion:** In case of uncemented prosthesis the operative time and blood loss was less as compared to cemented prosthesis, but the type of prosthesis did not show any difference in the final functional outcome. The rate of complications and mortality were similar between both the groups.

**Abstract no.: 35901**

**SIMULTANEOUS CORRECTION OF COMBINED FOOT DEFORMITIES AT TWO LEVELS BY TWO ORTHO-SUV FRAMES**

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Introduction: Since 2000 the correction of complex foot deformities is produced in external fixation devices on the base of passive computer navigations. This is due to the simplified method of correction and gives more accurate results. We investigated the possibility of simultaneous correction of combined deformation of foot by two Ortho-SUV Frames (<http://www.rniito.org/download/ortho-suv-frame-eng.pdf>). Methods and materials: the investigation was carried out by fixing the two Ortho-SUV Frames on a plastic model of a complex of foot and ankle. One apparatus was fixed to the tibia and forefoot, the osteotomy was performed at the level of the tarsus. The second apparatus was fixed to the tibia and calcaneus, the osteotomy was performed at the level of the calcaneus. The maximum range of motion in these layouts was studied. There were used such movements as dorsiflexion / plantoflexion, adduction / abduction, supination / pronation. The results: in the frame that is fixing the forefoot we have the following amplitude of the movements: dorsiflexion - 52, plantoflexion - 76, adduction - 48, abduction - 53, pronation - 43, supination - 51. In the frame fixing the heel bone fragment of the range of motion is as follows: dorsiflexion - 47, plantoflexion - 58, adduction – 20, abduction - 35, pronation - 28, supination – 31. Correction of combined foot deformities at 2 levels with 2 software-based Ortho-SUV Frames together reduces the number of surgical interventions and reduce treatment time.

**Abstract no.: 35902**

**THE USE OF RECOMBINANT MORPHOGENIC PROTEIN-2(RHBMP-2) IN CHILDREN UNDERGOING REVISION SURGERY FOR PERSISTENT NON-UNION**

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The purpose of the study was to evaluate the safety and efficacy with the use of BMP-2 for treating persistent non-unions in children with underlying complex conditions. Between Oct-2006 and Nov-2010 in our unit, 15 patients were treated with rhBMP-2 to enhance bone union. There were 9 females and 6 males with a mean age of 13 years (range 4-17) at time of surgery. 75% of the patients required revision of internal fixation with insertion of rhBMP-2 to the non-union site and the remainder had freshening of the non-union site with rhBMP-2 application. Patients had undergone a mean of 2 (1-5) operations prior to implantation of rhBMP-2. All the patients in the study group were available for review with a mean follow-up of 44 months (Range 21-70). The mean time to union was 16 weeks (Range 10 – 28 weeks). No adverse events related to BMP-2 application were noted in our study group. Healing was observed clinically and radiologically in 16 of the 17 sites. Our study demonstrates that, BMP-2 enhances the healing of persistent non-unions in children without any adverse events.

**Abstract no.: 35904**

**DOES FRAX SCORE CO-RELATES WITH DEXA SCAN RESULTS?**

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Since the induction of Osteoporosis Specialist Nurse to Worcester Royal Hospital it was decided to use FRAX score as preliminary screening tool which patients to be investigated further with DEXA scan. Prior to this National Audit for Falls and bone health reported zero percent participation at our Trust. During the time period 1st October 2011 to 1st January 2012 336 patients attended the fracture clinic with possible fragility fracture of lower or upper limb other than hip fractures. FRAX scores were sent to all patients above the age of 65 years. There were 281 male patients and 55 female patients in the study. There were 75 patients above the age of 75. 247 patients returned the FRAX score. We analysed last 59 patients in one month and co-related the results of DEXA scan. Results:- 54 patients out of 59 returned the FRAX score. Everyone with red and amber score had DEXA scan requested. FRAX results was green for 12% and amber for 42 % and red for 46%. Dexa scan confirmed osteoporosis in 23% and osteopenia in 51% and 26% were reported as normal. 81% of patient with osteoporosis had previous history of fracture. Conclusion:- FRAX screening is simple tool for assessment of patient suspected of fragility fractures. This tool is useful for highlighting the high risk group though is not 100% sensitive.

**Abstract no.: 35908**

**THE ROLE OF FUSION IN THE MANAGEMENT OF BURST FRACTURES OF THE THORACOLUMBAR SPINE TREATED BY SHORT SEGMENT PEDICLE SCREW FIXATION**

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The purpose of this study was to determine whether patients with a burst fracture of the thoracolumbar spine treated by short segment pedicle screw fixation fared better clinically and radiologically if the affected segment was fused at the same time. A total of 50 patients were enrolled in a prospective study and assigned to one of two groups. After the exclusion of three patients, there were 23 patients in the fusion group and 24 in the non-fusion group. Follow-up was at a mean of 23.9 months (18 to 30). Functional outcome was evaluated using the Greenough Low Back Outcome Score. Neurological function was graded using the American Spinal Injury Association Impairment Scale. Radiological outcome was assessed on the basis of the angle of kyphosis. Peri-operative blood transfusion requirements and duration of surgery were significantly higher in the fusion group ( $p = 0.029$  and  $p < 0.001$ , respectively). There were no clinical or radiological differences in outcome between the groups (all outcomes  $p > 0.05$ ). The results of this study suggest that adjunctive fusion is unnecessary when managing patients with a burst fracture of the thoracolumbar spine with short segment pedicle screw fixation.

**Abstract no.: 35909**

**UNUSAL CAUSES OF HEMIARTHROPLASTY DISLOCATION-**

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Dislocation after hemi-arthroplasty of hip ranges from 3 to 7%. The commonest cause is poor surgical technique, poor compliance of patient and poor soft tissues around the hip. We report 3 unusual cases of dislocation/subluxation of hemi-arthroplasty for displaced intra-capsular fracture of the hip. The first case involved an 89 year old female who sustained a subcapital fracture to her left hip following a mechanical fall. The second case involves a 96 year old female who sustained a similar oblique sub-capital fracture. Our patients subluxated hips had failed closed manipulation of the dislocated hemiarthroplasty. Despite sitting in front of the acetabulum the hip could not be reduced. Both patients underwent open reduction. The open reduction confirmed a tight band /fold of posterior capsule obscuring the 30 to 40% entrance hence preventing the hemi-arthroplasty head reduction into acetabulum. The fold was excised along with ligamentum teres to clear the entrance of acetabulum. Both patients hip hemi-arthroplasty remained stable after 2nd operation and patient made satisfactory recovery. 3rd patient has also similar picture with ligamentous fold obstructing the entry of hemi head into the joint. We recommend careful inspection of the acetabulum at the time of reduction and visual inspection of the hip before start to close the hip joint.

**Abstract no.: 35910**

**IMPORTANCE OF WEIGHT BEARING LINE**

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Introduction: The true weight bearing line has been described by Skinner(1914) which is a midline along the long axis of tibia. This is when it is carried down through the talus, bisects the body of talus into two equal halves. Talar shift can be calculated from this weight bearing line. Material and Methods: We have taken xrays of 20 volunteers of both ankles Right & Left AnteriorPosterior view in neutral & 15 degree internal Rotation. Observation: We have been able to determine various parameters of lateral and medial Malleolus in an Indian context. The most important observation from our study has been the use of a perpendicular drawn on the weightbearing line at the level of inferior articular surface of tibia. This gives an exact line to use along with line joining the tips of the medial and lateral malleoli for calculation of talocrural angle. Using this, perpendicular line we could diminish inter-observer differences as the inferior articular surface of tibia is not straight but wavy. Conclusion: We recommend to use this perpendicular line for measurement of Talocrural angle(83.4deg.).



**Abstract no.: 35911**

**FAT EMBOLISM SYNDROME AND FRACTURE LONG BONES- A REVIEW  
ON PATHOGENESIS AND CLINICAL FEATURES**

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**Aim:** To study the pathogenesis and clinical features of Fat Embolism Syndrome in long bone fractures. **Introduction:** Fat Embolism Syndrome(FES) refers to a constellation of clinical features which mainly includes pulmonary and neurological features. Eventhough it is a specific and a well recognized entity which develops after fracture long bones and in other conditions, many aspects of Fat Embolism Syndrome remain poorly understood. Great deal of confusion and disagreement persists regarding its pathogenesis and clinical features. **Material and Methods:** This is a prospective study of 12 patients with Fat Embolism Syndrome associated with fracture long bones between June 2001 and April 2012. Chest X-rays were studied in all the patients and autopsy of the lungs is conducted in the fatal case. Clinical features were analysed. **Discussion:** Fat Embolism Syndrome Clinical Features found to be invaluable and subtle for the diagnosis. Chest X-ray shows exactly an ARDS(adult respiratory distress syndrome) picture in all the patients. Autopsy lungs consistent with ARDS. **Treatment and outcome :** Treatment is mainly supportive with oxygenation by a facial mask. Mechanical ventilator was reserved for a few patients. Recovery was possible in 90 percent of the patients. **Conclusion:** Literature regarding fat embolism syndrome and ARDS is not clear in differentiating them. Our little experience has shown that all patients with FES have shown the radiological picture of ARDS. Further research has to be carried out to clarify the above said terms. **Keywords:** Fat embolism syndrome

**Abstract no.: 35912**

**COMPARISON OF SHORT TERM RESULTS OF SINGLE INJECTION OF AUTOLOGOUS BLOOD AND STEROID INJECTION IN TENNIS ELBOW: A PROSPECTIVE STUDY**

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**Background** It has been recently reported that local injection of autologous blood in tennis elbow offers a significant benefit by virtue of various growth factors contained therein. The objective of our study was assessment of efficacy of autologous blood injection versus local corticosteroid injection in the treatment of tennis elbow. **Methods and Trial Design** A single blinded, prospective parallel group trial was undertaken. 50 consecutive patients of untreated lateral epicondylitis were enrolled. Randomisation was done on alternate basis and two groups were constituted, first one receiving steroid injection and second one injection of autologous blood. Both groups were evaluated at 2 and 6 weeks for pain relief and stage of disease. **Results** Baseline evaluation showed no difference between the two groups (chi square test,  $P > 0.05$ ). Between group analysis at 2 weeks showed no difference in pain relief and Nirschl stage (unpaired t test,  $P > 0.05$ ). Evaluation at 6 weeks demonstrated a significant decrease in pain levels and stage of disease in blood group (unpaired t test,  $p < 0.05$ ). **Conclusions** Autologous blood injection was more effective than steroid injection in the short term follow up in tennis elbow.

**Abstract no.: 35915**

**ISOKINETIC MUSCLE STRENGTH EVALUATION BEFORE AND AFTER ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING SEMITENDONOSUS AND GRACILIS TENDON. ONE YEAR FOLLOW –UP.**

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Introduction: Reconstruction of the anterior cruciate ligament (ACL) is one of the most commonly performed orthopaedic procedures in the technologically advanced countries. Isokinetic measurements are often used to assess function following knee ligament reconstruction using the opposite limb as a control. The purpose of this study was to evaluate the results of anterior cruciate ligament (ACL) reconstruction with doubled hamstring tendon graft in a selected group of 16 patients. Method: Forty subjects between the ages of 18 and 44 were bilaterally tested on Contrex-MJ isokinetic dynamometer. The average age at the time of surgery was twenty-seven and all of them had attended a supervised rehabilitation program after the surgery. Isokinetic testing was performed on the operative and nonoperative legs at 60 degrees/sec before surgery, at 6 and 12 months postoperatively. ANOVA with repeated measures were conducted in order to determine any differences in the muscle force production between the operated and contralateral healthy knee before surgery, at 6 and 12 months postoperatively. A P-value of <0.05 was considered statistically significant. Results: Statistically significant differences were detected between the operated and contralateral healthy knee for quadriceps peak torque at 6th month postoperatively. Isokinetic evaluation showed a significant improvement on peak torque both in extension and flexion on comparison between pre-surgery, at 6- and 12-month measurements. Side-to-side differences of time to peak torque showed a significant delay in muscle activation that remained up to 6 and 12 month measurements. Isokinetic testing showed normal hamstring peak torques at 6 & 12 months.

**Abstract no.: 35918**

**HIGH FAILURE RATE OF LOCKED PROXIMAL FEMORAL PLATE**

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The AO syntheses plates were marketed 5 years ago. The implant was recommended for complex proximal femoral fractures by the company. We report the results of proximal femoral plate and experience at our institution. There were 15 patients who underwent this procedure for the complex intertrochanteric and subtrochanteric fracture during the time period January 2011 to June 2012. We report 5 failures in the group. All patients with failures were offered further surgery which either consisted of further fixation or replacement depending on the femoral head damage during failure. All patients with failures were managed successfully. The implant failure was highest in older population with osteoporotic bone. We recommend that locked plates do/not offer any advantage used in fixed angle device.

**Abstract no.: 35921**

**KNEE OSTEOCHONDRAL LESIONS TREATED WITH 3-LAYERED BIOMIMETIC SCAFFOLD. PRELIMINARY RESULTS.**

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**PURPOSE:** To demonstrate our early results in using a multilayer biomaterial for the treatment of cartilage lesions at the knee. **MATERIAL-METHOD:** We treated 10 weekend athlete, with a mean age of 27, suffering from chondral defects at the knee. The mean size of the lesions was 6.4 cm<sup>2</sup>. 4 of them had been previously treated for ACL rupture and 3 of them had undergone meniscus suturing due to rupture during athletic activity. Successful treatment was achieved for all, in one stage procedure via mini arthrotomy, using a biomimetic bioactive scaffold. All patients followed a specialized rehabilitation protocol. **RESULTS:** We assessed the patients at 6 and 12 months post-op. The IKDC score improved significantly while there was a great progress in Patient Outcome Function. Pain significantly reduced in VAS. MRI evaluation showed adequate filling of the defect without significant subchondral bone oedema and a hyaline-like signal of the implant. All patients were pain free, had full ROM and returned to their previous athletic activities with no reduction in performance. **CONCLUSION:** Results using the above described method seem to be promising. The main advantages are that, there is no need for specialized instrumentation, it is an one stage procedure and the surgeon's learning curve is short. For sure, longer follow-up and greater number of cases, are needed to prove the efficacy of the method.

**Abstract no.: 35922**

**UNUSUAL CASE OF LIGAMENTOUS DISLOCATION OF THE ANKLE**

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Where ankle fracture and ligamentous injury of the ankle are common, isolated Ligamentous dislocations of the ankle are extremely rare. The management of such injury hence causes management dilemma to either be treated non-operative or operatively. We report a case of similar injury dealt in our institution treated with early repair of the lateral and medial ligaments of the ankle. The patient made satisfactory recovery and early mobilisation was possible at 3 weeks in air cast boot. Patient has been followed up for year to assess ankle stability. We recommend early repair for quicker rehabilitation in younger and fit population with such an injury.

**Abstract no.: 35927**

**NOTCH TRIAL: TOTAL KNEE REPLACEMENT WITHOUT FRACTURES**

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Introduction: We hypothesised that independent Notch Trial is as essential as other Component Trials - Femoral, Tibial and Patellar - in posterior stabilised total knee arthroplasty and evolved Notch Trial to visually ascertain adequacy of intercondylar resection and particularly eliminate the possibility of femoral intercondylar fractures. Methods: We undertook a retrospective study to evaluate Notch Trial by frequency of need to remove osteophytes or file uneven surfaces during intercondylar resection by using detachable box of trial femoral component, assess occurrence of distal femoral intercondylar fractures and demonstrate Notch Trial in posterior stabilised total knee replacement. We studied 206 patients, 113 females and 93 males, who underwent consecutive primary posterior stabilised total knee replacements applying Notch Trial between 2000 and 2008. Outcome Measurements were 1) frequency of removing osteophytes or filing uneven surfaces during intercondylar resection and 2) distal femoral intercondylar fractures intraoperatively or on postoperative radiographs. Results: We had to remove osteophytes and file cut surfaces in 183 (88.88%) patients after Notch Trial. We had no distal femoral intercondylar fractures. Conclusions: Notch Trial allows direct visualisation to ascertain adequacy and precise fit of femoral notch cut with cam part of femoral component to ensure press fit femoral component in condylar posterior cruciate substituting total knee replacement. Notch Trial prior to Femoral Component Trial pre-empts intraoperative distal femoral intercondylar fractures. We recommend that Notch Trial should become part of protocol for cruciate substituting total knee replacement. Implants of all companies should have option of detachable box component for Notch Trial.

**Abstract no.: 35929**

**SHORT TERM RESULTS OF NEEDLE FASCIOTOMY FOR DUPUYTREN CONTRACTURE.**

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Introduction: Needle fasciotomy is a recognised, recommended by NICE, outpatient procedure done under local anaesthetic for Dupuytren flexion contracture in fingers. Method and result: We are reporting 4 year result of 200(hands) needle fasciotomy done as an outpatient procedure under local anaesthesia. All of our patients were male with an average age of 73. 27 patients had the contracture in both hands. 40% of our patients had multiple fingers affected by the disease process. The ring finger was affected most commonly followed by little and middle finger. All of our patients had MPJ contracture with 47% had concomitant PIPJ contracture in the same digit. The central cord release in the palm produced consistently near complete correction of the MPJ contracture. PIPJ flexion contracture was not corrected completely in all cases, although vast majority of the patients had satisfactory correction of the deformity. So far, only 4 patients have required formal fasciectomy for recurrence, one patient had superficial infection requiring a course of oral antibiotics and one patient had transient paraesthesia in the finger. The patient selection is very important and the main benefits of this procedure are; quick recovery, suitability for the very frail patients who cannot undergo more extensive surgery, improvement of the skin condition in case of severe contracture prior to major surgery, and low risk of complications.



**Abstract no.: 35930**

**A NEW GENERATION AFFIXUS HIPS FRACTURE NAIL: EARLY RESULTS OF MANAGING UNSTABLE HIP AND FEMUR SHAFT FRACTURES**

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Introduction: Cephalomedullary devices have proven their efficacy in treating unstable proximal femoral fractures. Affixus (Biomet) hip fracture nail offers several new design features compared to its predecessors. We intend to study the results and share our experience of Affixus hip fracture nail system. Methods: Seventeen consecutive patients who had undergone 18 Affixus intra-medullary nailing procedures over a period of 14 months period in a tertiary level 1 trauma centre in central London were included. Electronic patient records and radiographs were accessed to collect patient data. Tip-apex distance, neck shaft angle and fracture reduction were assessed. Results: The mean age of the patients was 51 years. The average duration of follow-up was 6 months. 7 patients had other major bone injuries. The implant was used in managing range of injuries including complex intertrochanteric fractures (4 patients), sub trochanteric fractures (5) , femur shaft fractures (4) and distal third femur shaft fracture(1). 50% patients were independently mobilising and 5 (27.7%) patients had complete healing of fracture at the time of final follow up. There was no complications and no revision surgery in the study group. Discussion: Affixus nail provides a range of anatomical options of 125° and 130° neck angles and 10° of proximal anteversion built into the nails. Preloaded set screw provides the option of locking proximal hip screw and the antirotation screw converting this into a fixed angle device. Our early results of Affixus hip fracture nail suggest this system as a potentially useful device to treat unstable proximal femoral fractures.

**Abstract no.: 35931**

**HAWKINS GROUP I FRACTURE OF NECK OF TALUS AND SALTER HARRIS TYPE III TIBIAL EPIPHYSEAL INJURY OF MEDIAL MALLEOLUS**

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Introduction: Fractures of talus in children are extremely rare and account for 0.008% of paediatric fractures. Fractures of neck of talus in adults are associated with fractures of medial malleolus in 16%, mainly with Hawkins Group III fractures of neck of talus. We are presenting an unusual combination of Hawkins Group I fracture of neck of talus with Salter Harris Type III distal tibial epiphyseal injury of medial malleolus in a child with cerebral palsy and hemiplegia of contralateral limbs. Methods: An 11-year old boy ran in front of a car and hurt left ankle. He had swelling and tenderness on dorsal and medial aspects of ankle with no neurovascular problems. Radiographs showed undisplaced fracture of neck of talus (Hawkins Group I) and undisplaced Salter Harris Type III tibial epiphyseal injury of medial malleolus. As both components of injury were undisplaced and tibial articular surface was congruous with no gap, he was monitored with below knee non-weight-bearing plaster in mild equinus. Plaster was removed after seven weeks. Unrestricted weight-bearing was resumed three months. Results: At 15 months, he was asymptomatic with no radiological evidence of avascular necrosis of body of talus or growth disturbance of distal tibial epiphysis on MR imaging. Conclusions: Fracture of neck of talus with Salter Harris Type III tibial epiphyseal injury of medial malleolus demands critical evaluation and attention to both aspects of this paediatric injury. Articular congruency, gap at fracture site, non-union, avascular necrosis and growth disturbances are vital considerations and demand judicious monitoring.

**Abstract no.: 35935**

**EVALUATION OF OSTEOPOROTIC FRACTURE'S PROBABILITY, PAIN SYNDROME AND QUALITY OF LIFE IN PATIENT WITH HIP FRACTURES**

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Hip fractures are the most important osteoporotic fractures. Risk of other osteoporotic fractures including next hip fracture in these patients is very high. Rate of the mortality and disability is also high. The aim of our study was to determine ten-years probability of osteoporotic fracture, dynamics of pain syndrome and quality of life in patient with hip fractures. Object. It was examined 28 patients aged of 51-84 years old (mean age  $71.3 \pm 1.6$  years, weigh  $77.5 \pm 2.6$  kg, height  $167.4 \pm 1.5$  cm) with hip fractures. Patients were divided into two groups. Hip replacement was performed to the first group (n=13) and osteotomy to second one (n=15). Methods. We used X-ray method, measurement of anthropometrical characteristics (height, mass, body mass index) and questionnaires for evaluation of the different risk factors, ten-years probability of osteoporotic fracture, pain syndrome and quality of life (FRAX® tool, VAS scale, EuroQol-5D, determination of health self-assessment). Patients were examined three times (the last week before fracture (retrospective), at first and 10 day after surgery). Results. We did not found any differences in indices of the fracture's risk, intensity of the pain and quality of life in the patients of both groups before fracture and at first day after surgery. Ten-years probability of osteoporotic fracture for all osteoporotic fractures and hip fracture was  $11,7 \pm 2,1$  and  $7,8 \pm 2,1$  before injury and  $19,4 \pm 3,0$  and  $12,7 \pm 3,2$  after one accordingly. The intensity of pain significantly decreases after surgery from 1st to 10 day and was less in patient after hip replacement compared with patient after osteotomy.

**Abstract no.: 35936**

**PSEUDOMONAS OSTEOMYELITIS OF PROXIMAL HUMERUS AFTER ARTHROSCOPIC ROTATOR CUFF REPAIR**

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Introduction: Arthroscopic interventions are considered as safe procedures with low incidence of infection. Although some infections are reported after arthroscopic procedures, to our knowledge a pseudomonas osteomyelitis of humerus has not yet been reported before. Material and Method: A 59 year-old male patient presented with right shoulder pain and limited motion. The CRP and ESR levels were elevated with a normal WBC. The radiographs and MRI were consistent with chronic osteomyelitis. Open debridement and pressured irrigation was performed with the removal of the remaining 2 anchors (1 PEEK, 1 Titanium). Gentamicin and teikoplanin loaded cement beads were placed. In his medical history, he was operated with arthroscopic double row rotator cuff repair two years ago. He had had an arthroscopic debridement of the joint with the removal of 2 anchors in early postoperative period with positive cultures of P. Aeruginosa. After Ciprofloxacin treatment for 3 months his CRP and ESR levels had returned to normal. Result: No microorganism was isolated from specimens. The pathological diagnosis was chronic osteomyelitis. Intravenous Piperacilin and tazobactam was started empirically. At the fourth postoperative week CRP was at normal range. The patient's shoulder pain subsided though a full range of motion has not been achieved yet. Conclusion: Surgical site infections may be related to surgical instrument contamination with P. Aeruginosa during instrument reprocessing. Retained tissue in inflow/outflow cannulae and shaver handpieces could have allowed bacteria to survive sterilization procedures. Although an early infection can be managed arthroscopically and satisfactory results can be expected, there are instances like this case where the patient suffered a chronic humerus osteomyelitis so a more radical approach was undertaken.

**Abstract no.: 35948**

**ANATOMIC SINGLE ANTERIOR INCISION REPAIR OF DISTAL BICEPS TENDON RUPTURES WITH ENDOBUTTON AND BIOTENODESIS SCREW**

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Theories of hypovascularity and mechanical impingement have been put forward to explain distal biceps ruptures, although etiology is not known. They have been historically quoted to involve about 3% of biceps injuries but recent literature suggests 10% involvement. Management of these injuries have evolved over time with better understanding of the distal biceps anatomy. Nonsurgical treatment can result in 40% decrease in supination and 30% in flexion strength. We report a case series of 17 patients who had anatomic single anterior incision repair with endobutton and biotenodesis screw with follow-up upto 1 year. Our series had mainly middle aged males involving the dominant extremity. Repair was done using endobutton and biotenodesis screw. Post-operative assessment with quick DASH and flexion, pronation, supination range demonstrates excellent clinical function in these patients with good strength. Complications were minimal and it is a safe, successful technique.

**Abstract no.: 35951**

**PSEUDO CLAW HAND DUE TO WASP STING**

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Introduction: Wasp stings can result in a wide spectrum of clinical presentations, ranging from mild self-limiting inflammatory response to life threatening anaphylaxis, myocardial infarction and even death. Claw hand after wasp and bee stings is extremely rare. While transient full-blown claw hand due to bee sting was described, early transient clawing following wasp sting hasn't been published. We are presenting transient early clawing of hand following wasp sting. Methods: A 35-year old man presented with wasp sting on left wrist two days ago. He was afebrile with no signs of anaphylaxis. He had moderate swelling and redness of left forearm and hand on both dorsal and volar surfaces with a mark of sting on dorsolateral aspect of wrist. Both wrist and fingers including thumb were held in slight flexion and little finger in abduction. He could not make a fist and adduction of little finger was weak and limited with altered sensation over hand. Passive stretch of fingers was not painful. He was treated with ice packs, elevation, antihistamines, non-steroidal anti-inflammatory medication and antibiotics. Results: Symptoms and signs markedly improved in two days and clawing resolved. Conclusions: It is important to bear in mind the early and intermediate stages of clawing following a wasp sting. Neurological manifestations of clawing and sensory impairment are self-limiting and resolve in about 48 hours. The transient early clawing of hand represents a separate entity and is best described as pseudo claw hand on the same lines as pseudolocking in orthopaedic literature.

**Abstract no.: 35954**

**BILATERAL NECK OF FEMUR FRACTURES WITH MALABSORPTION SYNDROME AND PANCRATIC INSUFFICIENCY**

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Introduction: Pancreatic insufficiency is one of the features of malabsorption syndrome. The effects of osteoporosis and osteopenia in these patients is poorly understood. It is postulated that it is related to chronic negative calcium balance caused by loss of villous surface area, binding of calcium to fatty acids in the intestinal lumen and impairment of active intestinal calcium transport mechanisms. Aim: We report a case of bilateral neck of femur fractures with known pancreatic insufficiency in a 30 year old patient who presented following a fall. The initial radiograph was reported to have one neck of femur fracture on the right side only. Subsequent MRI showed the occult insufficiency fractures namely undisplaced fracture of the neck of femur fracture of the opposite side (left side), left sided vertical sacral fracture and fracture of the left superior pubic ramus. Result: Patient went onto have right total hip replacement and insitu fixation of the left neck of femur fracture. Conclusion: We would like to highlight the combination of insufficiency occult fractures with malabsorption syndrome and the need for further imaging such as MRI as initial radiographs may miss occult fractures.

**Abstract no.: 35955**

**STAGED REVISION OF INFECTED TOTAL KNEE ARTHROPLASTY USING ANTIBIOTIC LOADED SPACER- A DISTRICT GENERAL HOSPITAL EXPERIENCE AND PROTOCOL**

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**INTRODUCTION:** Management of infected total knee arthroplasty can be a difficult and costly problem. Two stage revision procedures has been a standard practice. Timing to second stage can pose a dilemma at times. Proper protocols and guidance is essential for management and salvage. **OBJECTIVES:** The purpose was to analyse the clinical results of two stage revision implantation of an infected total knee arthroplasty using antibiotic loaded cement spacer at first stage **METHODS:** Retrospective analysis of all two stage revision total knee arthroplasties done over last 10years by two senior authors. 37 patients were identified. Data collection included index diagnosis, associated co-morbidities, time to infection diagnosis, classification of infection type (duration since index) organisms isolated,antibiotics used,approaches used,protocol followed & followup results. **RESULTS:** Infection was successfully eradicated in 34 patients. Mean range of motion(knee flexion) improved from 62 degrees to 95 degrees. 72.9% patients were very satisfied following the operation. Four patients with quadriceps turndown for exposure developed extension lag of 20-30degrees.**CONCLUSIONS:** Two stage revision of infected total knee arthroplasties using an antibiotic spacer and our protocol achieved 91.2% infection control with good patient satisfaction. Extension lag and stiffness can be a problem in some cases.



**Abstract no.: 35956**

**3 YEAR EXPERIENCE OF 250 PATIENTS TREATED WITH AN ANATOMIC & REVERSE PLATFORM SHOULDER REPLACEMENT SYSTEM**

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**Aim:** To assess the clinical and radiological outcome of patients treated with the Vaios total shoulder replacement system. **Methods:** We have performed 250 shoulder replacements using the Vaios Shoulder System up to March 2013. Results of the initial 87 patients are reported with an average follow up 32 months (24 – 41 months). 23 were primary total shoulder replacement, 26 primary inverse replacement, 9 primary hemiarthroplasty, 29 revision replacements, 9 of which was revised to an anatomic and 20 to inverse replacements. The average age was 69.9 years. There were 15 men and 30 women (34-89 yrs). At follow up Constant and Oxford shoulder scores, visual analogue pain scale, patient satisfaction and complications were recorded. Radiological analysis was performed with particular attention to glenoid and humeral radiolucency, scapular notching and spur formation and stem subsidence. **Results:** The mean Oxford scores improved from 16.5 to 35.5 following primary anatomic shoulder replacement and from 17 to 29.7 following primary inverse replacement. The active forward elevation improved from 53.5 preoperatively to 102.5 after surgery. The external rotation improved from 13.7(-5 to 50) preoperatively to 30.2(5-70) post surgery. Three glenoid dome disassemblies occurred during the initial stages which required a design modification. Radiological analysis revealed two component mal-positions, two inferior scapular spur and three grade 1 scapular notching. **Conclusion:** The early results are promising and good clinical and radiological outcome was observed but it is important to monitor the medium and long term outcomes.

**Abstract no.: 35957**

**PREDICTING THE UNDERESTIMATION OF FEMORAL OFFSET IN ANTEROPOSTERIOR RADIOGRAPHS USING 'LESSER TROCHANTER INDEX'**

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Background: Femoral offset measurements in anteroposterior (AP) radiographs can be grossly underestimated due to the rotational position of the femoral neck. We attempted to develop an accurate and reproducible method to predict the underestimation of femoral offset in AP radiographs. Methods: Computerised tomographs of 40 hips were used to create simulated radiographs in rotational projections of 100 increments from 300° internal rotation to 400° external rotation of the hip using computer software. At each projection, the reduction in the radiographically measured femoral offset as compared to the true offset was calculated. We measured the distance between the most prominent part of the lesser trochanter to the lateral edge of the calcar and its proportion in femoral width, which was defined as the lesser trochanteric index (LTI). Correlation between LTI and underestimation of offset was assessed. Results: Relation between hip rotations and underestimation of offset was variable among all hips due to variable anteversion angles (-40° to 290°). Relation between LTI and offset underestimation was consistent. An LTI value of less than 33 predicted an offset underestimation below 5% of true offset (predictive value 94%). LTI more than 33 predicts significant reduction of radiographically measured offset by more than 5% (predictive value 92%). LTI value above 33 showed a linear relation with the offset underestimation ( $r=0.51$ ). Discussion: Lesser trochanteric index serves as a useful guide to determine whether the measured femoral offset in the AP radiographs is close to true femoral offset or not. LTI can be a valuable guide for surgical templating and for biomechanical analysis of the hip.

**Abstract no.: 35960**

**ASSOCIATION OF CHOPART AND LISFRANC DISLOCATIONS: ONE CASE REPORT**

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The Chopart medio-tarsal and Lisfranc tarsometatarsal joints are "lines of weakness" of the foot during traumas. At high energy, they may be the seat of subluxation or dislocation. We report an exceptional case of Chopart dislocation associated to fracture dislocation of Lisfranc. It's about a 21st years old patient, victim of a work accident by crushing the foot in plantar flexion under a fork lift truck causing blunt trauma with edema and ecchymosis. The Xray objectified calcaneocuboidian dislocation associated to a Lisfranc columnar dislocation and fracture of two cuneiforms. The treatment consisted on closed reduction under general anesthesia. The midfoot is stable after reduction, we opted for orthopedic treatment. Chopart and Lisfranc injuries are considered as midfoot serious lesions because of rupture of the medial column of the foot which is essential for propulsion and lateral column which is involved in the stabilization of the foot. Radiological screening requires profile, dorso-plantar and three-quarters projections. The prognosis is quite dark because of the risk of developing chronic instability, a collapse of the arch and osteoarthritis in the longer term. The initial treatment should rapidly restore the anatomy. A perfect reduction is required, followed by fixation with Kirschner wires or screws if the reduction is too unstable. In case of irreducible dislocation, open reduction is necessary because of the interposition of a piece of bone and / or tissue. We reported a rare case of midfoot lesion association. A significant decline and more cases are needed to assess our therapeutic attitude.

**Abstract no.: 35961**

**THE SAUVÉ-KAPANDJI PROCEDURE: REPORT OF 30 CASES**

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Distal radio-ulnar injuries occur serious damages on the hand and wrist function. Many authors proposed surgical solutions for these lesions, especially Darrach in 1912 and Lefort in 1921. It's on 1936 that L. Sauve and M. Kapandji have proposed the arthrodesis of the distal radio-ulnar joint associated to creation of voluntary non-union of the ulna. Authors are reporting 30 cases operated between 2003 and 2012. The mean etiology was trauma of distal radius. We realized radio-ulnar arthrodesis using two titan screws and voluntary non-union of the distal ulna. Some rare complications were reported. They were dominated by the ossification of the resection zone. Results were analyzed according to etiology. It was based on the rate of pain, mobility and grip strength after one year of follow up. We reported 80% of excellent results in post-trauma injuries. Distal radio-ulnar dislocations have had good results and rheumatoid arthritis have had the worst results because of their destructive evolution. In conclusion, the Sauve-Kapandji procedure allowed us to obtain good clinical results provided a correct indication and rigorous technic.

**Abstract no.: 35963**

**A STATISTICAL MODEL FOR PREDICTING LENGTH OF HOSPITAL STAY FOLLOWING OSTEOPOROTIC FRACTURES OF THE PROXIMAL FEMUR**

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An osteoporosis-related hip fracture represents a significant burden on any healthcare economy. Length of hospital stay is often considered a surrogate for resource consumption in such instances. We aimed to develop a statistical model for predicting length of stay in patients with fall-related hip fractures. A two-component Gamma mixture regression model was developed to enable the identification and assessment of variables affecting short-stay and long-stay patient subgroups. We retrospectively reviewed medical records of 184 consecutive patients admitted with a hip fracture to the Leicester Royal Infirmary from January 2009 to July 2009. Data collected included, pre-injury independence and mobility, medical co-morbidities, American Society of Anesthesiologists (ASA) grade, time to surgery, intra and post-operative complications, discharge destination and hospital length of stay. The mean age of patients was 81.1 years, and 68.2% were community dwellers. Twenty-one patients (11.4%) died during their in-patient hospital stay. With multivariable analysis, length of stay was predicted by six independent variables: ASA grade, time to surgery (less or greater than 48 hours from admission), intra-operative complication, urinary tract infection, deep venous thrombosis and discharge destination. For the short-stay patients, all six variables were significant. The only significant variable for long-stay patients was the presence of a urinary tract infection. The determination of these variables would benefit both clinicians and hospital administrators to manage length of stay and expenditures more efficiently. However, these statistical models need to be refined and validated further using larger number of patient data from multiple institutions, and including other possibly important variables.

**Abstract no.: 35967**

**ARTHROSCOPIC 360-DEGREE CAPSULAR RELEASE FOR CHRONIC, RECALCITRANT, IDIOPATHIC ADHESIVE CAPSULITIS OF THE SHOULDER: A LONG-TERM OUTCOME STUDY OF 33 PATIENTS**

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Introduction: The purpose of this study is to describe our surgical technique, and to report the long-term clinical outcomes of arthroscopic 360-degree capsular release for patients with refractory, idiopathic adhesive capsulitis of the shoulder. Methods: 33 patients (24 women and 9 men; 37 shoulders) with chronic, recalcitrant, idiopathic adhesive capsulitis of the shoulder underwent arthroscopic 360-degree capsular release. Their mean age at the time of operation was 53 years (range, 34-78 years). Preoperatively, all patients had shoulder pain (pain at rest, activity-related pain, or night pain), stiffness, and limitation of motion in all directions. All patients had failed a course of supervised and/or home-based physical therapy for at least 6 months. Results: The mean follow-up was 7.3 years (range, 4.1 to 9.7 years). The mean preoperative Constant and Murley score was 34 points (range, 18-63 points) and the mean postoperative Constant and Murley score was 86.5 points (range, 27-100 points). The mean preoperative Visual Analogue Scale (VAS) score was 7.6 (range, 6 to 10) and the mean postoperative VAS score was 2.4 (range, 0 to 7). At latest follow-up, the mean forward flexion was 167°, the mean abduction was 163°, the mean external rotation was 62°, and the mean internal rotation was T9 spinous-process level. All gains in ROM of the shoulder were statistically significant ( $p < 0.01$ ) compared with the preoperative ROM values. There were no neurologic or vascular complications. Conclusions: Arthroscopic 360-degree capsular release is a safe, effective, and reproducible surgical technique.

**Abstract no.: 35969**

**AWARENESS OF COMPARTMENT SYNDROME AMONG NURSING STAFF IN A TERTIARY LEVEL HOSPITAL**

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Introduction: Compartment syndrome (CS) is an emergency condition that requires prompt recognition and treatment. Delay in prompt management may lead to irreversible complications, which may be loss of limb. Complications may arise as a result of delayed diagnosis, which included missed symptoms by nursing and junior medical staff or delay in treatment and inappropriate management. The aim of this study was to assess the understanding of CS among the nursing staff working on Orthopaedics Wards (OW) and Acute Surgical Ward (ASW). Methods: A questionnaire was distributed among the nursing staff of the OW and ASW. This questionnaire assessed the knowledge of compartment syndrome including signs and symptoms and the appropriate management. Results: 27 nurses completed this questionnaire – 17 from OW and 10 from ASW. 4% on the nursing staff were not aware of CS, 22% weren't aware of the signs and symptoms of CS and 89% weren't aware of the initial management of suspected CS. Only 11 nursing staff had any training on identification and management of CS. Conclusion: Our data shows that although a majority of the nursing staff is aware of CS there still are areas of improvement. Regular workshops and teaching sessions especially to new staff members is necessary for the nursing staff to identify CS and highlight the issue to the doctor incharge.

**Abstract no.: 35972**

**FUNCTIONAL OUTCOME OF SURGICALLY MANAGED OPEN DISTAL FEMORAL FRACTURES**

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Open fractures of the distal femur are associated with considerable morbidity. Problems with respect to fracture fixation, wound management, loss of reduction, extensor mechanism injury and infection influence the final functional outcome. We reviewed patients with open fractures of the distal femur treated surgically in our unit between the years 2006-2010. There were 58 men and 9 women. AO C-2 injuries accounted for majority of the fractures. Most patients had more than two surgical procedures. Patients were assessed for their functional outcome using the HSS score and Neer scores. The minimum follow up was 24 months. The average HSS score was 85 and Neer score was 76. The causes for poor outcome were identified as extensor mechanism injuries, multiple surgical procedures, ipsilateral limb injuries and delay in mobilization of the knee joint.



**Abstract no.: 35973**

**BONE HEALING IN OLDER CHILDREN AND ADULTS WITH HYPOPHOSPHATEMIC RICKETS**

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**Purpose :** Vitamin D-resistant hypophosphatemic rickets (HPR) is an X-linked dominant genetic condition associated with short stature, lower limb deformities and hypophosphatemia. Corrective osteotomy is indicated for deformities in older children and adults, but role of medical therapy before and after surgical treatment is less well defined. We conduct this study to evaluate duration and rate of union of HPR patients with no medical therapy following surgical intervention. **Methods :** From 2002 to 2010, 8 HPR patients (6 females and 2 males) were surgically treated for lower limb deformities, mostly in several stages. The mean age at surgery was 26.5 years range (range 10 to 41 years), and mean PO<sub>4</sub> level before surgery was 0.7 mmol/L (0.5 – 1.0). Follow up were more than 2 years, and no fixations were removed. **Results :** Thirty osteotomies were performed on 17 long bones (9 femurs and 8 tibias). Fourteen diaphyseal osteotomies were fixed with reamed interlocking nail fixations, while 3 metaphyseal osteotomies were fixed with K wire/blade plate fixations, with no bone grafting. Mean time to union was 14.2 weeks for femur and 23.1 weeks for tibia osteotomies. For multiple level osteotomies, mean to union for proximal osteotomy was 20.1 weeks, for distal osteotomy was 17.5 weeks. **Conclusion :** In older children and adults with HPR, corrective osteotomies can be expected to unite without bone grafting and medical therapy. Femur osteotomy healed faster than tibia ( $p < 0.01$ ), but no difference in union rate was noted comparing proximal and distal osteotomy with interlocking nail fixation ( $p = 0.36$ )

**Abstract no.: 35981**

**CLINICAL OUTCOME OF DOUBLE BUNDLE ACL RECONSTRUCTION USING CROSSPIN & APERTURE FIXATION**

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Background: Double Bundle Anterior Cruciate Ligament (DBACL) reconstruction has become method of choice for ACL reconstruction in young athletic individuals. Different fixation methods have been used for DBACL reconstruction most common being Aperture fixation on tibial side and Cortical suspensory fixation on femoral side. Different methods have different advantages and disadvantages especially in terms of strength of fixation and tunnel dilatation. We hereby present a new technique of femoral side fixation of Anteromedial Bundle (AM) with Crosspin and Posterolateral bundle (PL) with aperture fixation. Material and Methods: Prospective study involving 100 patients of isolated ACL injury were treated using ipsilateral hamstring autograft using DBACL reconstruction technique. Anteromedial (AM) bundle was fixed using transfix (Arthrex,Naples,FL) on the femoral side and Biointerference screw (Arthrex,Naples,FL) on the tibial side. Posterolateral (PL) bundle is fixed on femoral and tibial side with Biointerference screw (Arthrex,Naples,FL). The patients were then evaluated for functional results using KT-1000 arthrometer for anterior laxity, Lysholm score, IKDC score and Isokinetic muscle strength testing postoperatively for at least 1 year. Results: There were 64 males and 36 females. At the end of 1 year, the total anteroposterior translation (KT-1000 manual maximum) showed improvement of mean of 6.4mm (range 3-9mm) (p value <0.001) postoperatively compared to the normal side. The Lysholm score too showed statistically significant improvement from 52.4(32-76) pre-operatively to a post-operative score of 89.1+ 3.2(range, 67-100). According to the IKDC score maximal patients had normal (Group I-54%) or nearly normal (group II-36%) results.

**Abstract no.: 35982**

**CONTROL OF HAEMORRHAGE IN PELVIC FRACTURES**

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Introduction: Haemorrhage accounts for about 40% mortality in pelvic fractures which occurs in high velocity injuries like RTA, fall from height, leading to unstable haemodynamic and shock stage. Haemorrhage is from (i)Fracture site (ii)Iliolumbar artery or sacral plexus vein (iii)From intra-pelvic organ or (iv)From liver and spleen. Patient received in casualty in shock stage (haemodynamic and mechanical instability) is addressed immediately. Investigation like haematocrite value, coagulation time, radiograph, CT-pelvis, ultrasonogram (FAST) for trauma, peritoneal tap etc. done and resuscitation starts. 1st step is to replace blood loss and 2nd to stop bleeding from source. Whole blood, plasma, FFP and blood substitutes should be used. Average blood replacement – LC-3.6, AP-14.8, CMI-8.5, VS-9.2 units. Bleeding is stopped from source by different modalities like (i)External stabilization - MAST application, pelvic binder PCCD, anterior external fixator and C-clamp, (ii)Angiography and embolisation, (iii)Retroperitoneal packing. Operative intervention for intra-abdominal bleeding is the vital stage. Bleeding from associated injury also to be diagnosed and controlled directly. Conclusion: Haemorrhage in pelvic fractures carries a significant mortality and morbidity. There should be institutional guidelines to deal with such a dreadful situation. Replacement of blood loss is of paramount importance. Emergency external fixator should be applied to reduce the volume of the pelvis, thereby decreasing the osseous bleeding areas. FAST, Angiography and embolization, is to be instituted as emergency procedure if suspected intra-abdominal haemorrhage. Retroperitoneal packing is advised, as a salvage technique, following angiographic embolization.

**Abstract no.: 35985**

**SINGLE STAGE ACETABULAR RECONSTRUCTION AND TOTAL HIP ARTHROPLASTY FOR FAILED COMPLEX ACETABULAR FRACTURES**

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Delayed total hip arthroplasty is a well established treatment for failed or neglected acetabular fractures with secondary arthritis. THA in such situations can be quite complex with less satisfactory outcomes depending on the complexity of the defects. Records of 16 patients; mean age 54 years ( 39 - 71 years) with failed acetabular fractures who underwent uncemented THA were analysed at a mean follow up of 38 months (25 - 51 months). Reconstructive procedures done include posterior wall reconstruction with iliac strut grafts in 4, posterior column plating and grafting in 3 and impaction grafting in 5 patients. Primary THA components were used in 13 patients and a cup-cage construct was used in 3 patients. Radiological and functional outcome were assessed using validated methods. 15 patients were available for follow up. All acetabular components were placed at the true hip center. All components were stable with no evidence of loosening, subsidence or migration. There was no evidence of osteolysis. The mean Merle D'Aubigne score was 16 ( 14 -18) with excellent scores in 4 patients, good in 10 patients and fair in 1 patient. Total hip arthroplasty along with proper acetabular reconstructive procedures following failed acetabular fracture treatment can give excellent results with respect to component survival and functional outcomes.

**Abstract no.: 35987**

**WOULD PROCEDURE SPECIFIC CONSENT FORMS IMPROVE THE CONSENTING PROCESS? A PROSPECTIVE STUDY OF CURRENT METHODS IN CONSENTING FOR LOWER LIMB ARTHROPLASTY.**

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**Introduction** The aim of this study was to examine our methods in obtaining and documenting an informed consent for surgery and discuss methods of improving the process of consenting. **Methods** Prospective analysis of the documentation of the serious complications of primary total hip and knee arthroplasty surgery by the consenting surgeon in the consent forms of 100 patients. **Results** In THR, the risk of DVT achieved 94% documentation, bleeding 96%, neurovascular damage 94% and infection 98%. However the documentation of other risks such as fractures (40%), leg length discrepancy (62%), PE (84%), prosthesis wear/loosening (76%) and dislocation (68%) was not as comprehensive. In TKR, the risk of DVT was documented in 90%, bleeding 92%, neurovascular damage 90% and infection 96% while other risks such as fractures (22%), leg length discrepancy (4%), nerve injury (70%), PE (80%) and dislocation (4%) was not as comprehensive. **Conclusions** Frequent and serious complications of surgery were incorrectly or insufficiently documented which may result in the surgeon being held liable for a negligent failure to inform and leave the door open to litigation. This study proposes improving the consenting process through adopting procedure specific consent forms that can be accessed easily through the website endorsed by the British Orthopaedic Association <[www.orthoconsent.com](http://www.orthoconsent.com)>.