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SICOT

e-Newsletter



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Editorial by Kandiah Raveendran, SICOT First Vice-President



Education in SICOT: The role of the Education Centre

The primary goal and objective of SICOT is education. Today SICOT is at the forefront of orthopaedic education and training. The SICOT website itemises all the different fellowships available, e-learning, publications and the education and training resources including the SICOT Education Centre.

This editorial is an update of my first editorial about the Education Centres published in the [SICOT e-Newsletter \(Issue No. 39 - December 2011\)](#).

The SICOT Education Centre has many objectives but the main ones are to educate orthopaedic trainees and to continue the education of orthopaedic surgeons. It is also involved in the training of allied health workers.

SICOT has established guidelines to assist universities and/or hospitals that wish to set up Education Centres in their city. Applications to set up such a centre should be made through the [SICOT National Representative](#) and are welcome all year at hq@sicot.org. The requirements for application can be found [here](#).

The SICOT Education Centre provides a place for doctors to meet, learn, and conduct courses with access to journals, books and the Internet. SICOT will provide three fellowships annually – a three-month fellowship overseas in addition to two one-month SmS (SICOT meets SICOT) fellowships. SICOT will also send speakers if any courses or meetings are organised by the Education Centre.

On the SICOT website and in my first editorial, I have described the first three centres in Lahore, Pakistan, in Assiut, Egypt, and in Russia, Moscow. Another centre was approved in Tanzania but it is yet to become active.

Since then three more Education Centres have been approved and are at different stages of preparedness.

The first one was opened in Lagos under the direction of Dr Wahab Yinusa, the National Delegate of Nigeria. He is in the process of setting up a multi-purpose surgical skills laboratory.

The second one was approved in Mumbai, India, under the guidance of Prof Pradeep Bhosale and Dr Vijay Shetty. This is a private hospital and university partnership and is the first SICOT Education Centre in India. India, being a vast country, has potential for more centres.

The third centre was opened in Muscat, Oman, under the direction of Dr Mohamad Allami. They plan to hold an international conference in November 2013.

The establishment of multiple Education Centres worldwide not only enhances orthopaedic education, especially in the developing countries, but also promotes SICOT. The importance of the SICOT Education Centre will be even more evident in the future with the setting up of a special Education Centre sub-committee.

The First Vice President and the sub-committee will closely monitor the activity of the Education Centre and SICOT will not hesitate to close any non-functioning centre. The centre is obliged to give an annual report, take up available fellowships and organise courses and meetings.

SICOT Events

34th SICOT Orthopaedic World Congress (Hyderabad OWC 2013) 17-19 October 2013 * Hyderabad, India

- **Registration**

Online congress registration is open [here!](#)

- **Scientific Programme**

Don't miss the Instructional Courses held throughout the Congress. Registration is now open! [Read more...](#)

- **Social Programme**

Join us for the entertaining social programme and the chance to experience the rich culture of India. [Read more...](#)

- **Accommodation & Tours**

Hotel booking for SICOT 2013 participants at Hyderabad is on! We have secured attractive discounted rates for a number of rooms in different categories of hotels close to the Hyderabad International Convention Centre. Shuttle transportation will be provided between the Congress venue and the official hotels at fixed times in the morning and evening for only those delegates who have booked through the official website: [Online Hotel Accommodation Booking](#)

- **Exhibition & Sponsorship**

Hyderabad OWC 2013 is the premier unique opportunity to promote your products and services to leading international orthopaedic surgeons, traumatologists and specialists in related fields. There are also many value-creating sponsorship options available to highlight your organisation's support and contribution to orthopaedics and traumatology. We will help in customising the most suitable option. [Read more...](#)

Meetings by SICOT Members

- **SICOT Resident Training Programme in Nepal**

The Nepal Medical College Teaching Hospital in Kathmandu, Nepal, is organising, in collaboration with SICOT and the Nepal Orthopaedic Association, a SICOT Resident Training Programme and [SICOT Symposium](#) on Paediatric Orthopaedics in October 2013. [Read more...](#)

Articles by SICOT Members



To be or not to be an Orthopaedic Surgeon

Thamer Hamdan

SICOT National Representative of Iraq & SICOT Vice-President of Africa, Near and Middle East - Basrah, Iraq

Human beings were born with different abilities. Not even two are alike as regards mental, physical, social, and psychological capabilities. Some were born to be singers, dancers, writers, actors or doctors, while others were born to be out of any specification. So it is very vital for each one of us to be aware of this critical point.

No doubt one can strengthen some characters by reading, practicing or imitating the champions in a particular specialty, but it is impossible to be like those who carry the personality trait for the said specialty.

To be one among few in any particular field of medicine you have to possess so many personality traits that help in this matter. The serious interest and the inherent capability are at the top of everything.

Personally, I feel it is impossible to be one among few if you don't have the required traits, the serious interest and if you don't work hard to achieve the goal.

Every specialty and subspecialty in medicine requires so many characters; to be a psychiatrist, physician, dermatologist, you have to have so many specifications and personality traits that match each specialty. It is basically your job to choose where to be located depending on your understanding of the requirement for that particular specialty or subspecialty.

One should also keep in mind that there are advantages and disadvantages in every field, but probably the worst motive is financial gain.

If your interest is to sleep well without trouble, then go to the specialty where you will never kill, never cure and never have a call at night. This is the most suitable career that fits your admirations, but remember that this intention will keep you out of the focus media. To live distinguished in a surgical specialty you should have the heart of a lion, the eyes of an eagle and fingers of a lady, but this will keep you not far away from a heart attack.

Probably the most demanding specialty is surgery. You have to have so many personality traits to be a good orthopaedic surgeon and to be a very good orthopaedic surgeon the demand is tripled.

Sadly, so many colleagues squeeze themselves in this honest career without a real estimation of their capabilities and the expected answer is failure for their outcome and a bad reputation for the career.

Orthopaedic surgery is a highly multidisciplinary field, tiring, and increasingly competitive. Both elective and traumatology can take much longer than anticipated which can affect home and family plans.

Orthopaedic surgery requires good manual dexterity, a problem-solving mind-set and a sense of responsibility.

Since there are different ways of treating the same pathology, it is vital to choose which is the best depending on solid experience. Probably the outcome of orthopaedic surgery is more obvious to the patient than any other surgical specialty, so meticulous work is always needed. A mechanical engineering mind is very useful, because so much mechanical work is faced in this specialty.

An orthopaedic surgeon should be confident, practical, focused, capable of solving unexpected problems and able to differentiate between more or less similar conditions. He should be aware of the co-morbidities which are frequently seen in this specialty.

An orthopaedic surgeon should be a devoted believer in the honesty of his career; he should try his best to raise his specialty to the highest level to keep it in the best possible shape. He must always make himself perfect in the specialty or subspecialty which he is practicing. His belief in his specialty should be manifested in his behaviour and attitude at professional as well as personal levels. He should be truthful when he speaks, writes or gives a testimony. He should be humble, modest and free from arrogance and self-glorification.

Due to the prolonged time usually required for healing, he needs to be kind, patient, comforting and friendly. His words should be soothing and his effort towards his patients' complaints should be prompt and caring.

He should provide medical care for the needy regardless of race, ethnicity, colour or religion.

His piety must restrain him from inappropriate physical or emotional feeling during the patient's care. Provisional security is mandatory.

He should work with dignity to avoid emotional involvement with his patient.

So, to be an orthopaedic surgeon, you should have an impressive personality, clean, tidy, meticulous and totally free from bad habits.

Surgery is a science and art that creates a wound to cure another wound, which means we need planning, doing and impacting.

For an orthopaedic surgeon to spare himself from a lot of troubles, he should know how to handle the odd patient, how to deal with colleagues' mistakes and how to keep good relations with his colleagues, the community and the staff.

It is vital to admit failure in order to plan how to avoid it in the future.

To achieve meaningful work, he should be an orthopaedic surgeon for today, tomorrow and even after tomorrow; capable of going hand in hand with the recent advances.

One very common mistake in our locality is the lack of proper written consent which is mandatory in European countries. Written consent protects the orthopaedic surgeon and spares him a lot of troubles. Potential complications must be discussed in advance. Patient screening is very vital; an orthopaedic surgeon needs to do a good screening before agreeing to operate on a patient. He should ask questions that help him to accurately ascertain the emotional state, the organic state and the expectations of his patient.

A high index of screening will certainly reduce or may even abolish the suffering of the orthopaedic surgeon and the patient to a great extent. Ethical aspect should always be considered as a priority. Surgery should only be performed for the patient's benefit and interest and is totally separate from the orthopaedic surgeon's financial or other gains. It is a surgical crime to think that the patient is a vessel of a disease. We have to believe seriously that the patient is a suffering human being and it is our prime job to help him. A successful orthopaedic surgeon is not noted for his skills but for having a caring attitude towards his patients and feeling their pain.

Having a good sense of humor without being crude or rude is also helpful. Honest thinking, honest telling of the lesion and the outcome of surgery is a necessity. The orthopaedic surgeon/patient relationship has a contractual basis and is based on confidentiality, trust and honesty. Both the patient and the orthopaedic surgeon are free to enter or discontinue the relationship. An orthopaedic surgeon has an obligation to render care only for those conditions that he is competent to treat.

It is up to each orthopaedic surgeon to call upon his experience, training, and his theoretical background to make the decision of when to operate and when to refer the patient to other qualified medical professionals.

It is probably a good practice to sit down every night to write and ruminate on the experience of daily work.

Exchanging ideas with colleagues whether seniors or juniors is mandatory, very useful and beneficial to the orthopaedic surgeon and the patient.

Expected and unexpected complications may occur at any time so the orthopaedic surgeon should take this into account, guard against them and be strongly capable to solve them very quickly.

He should be ready and capable to say 'No' for what is unknown to him and it is better to avoid a compromise as a solution.

An orthopaedic surgeon should have the power of quick and perfect decision for the odd and unexpected operative findings. His scope of work should be within his available facilities.

An orthopaedic surgeon is not allowed to make trails or alterations without a scientific basis. It is preferable to submit his suggestion for any alteration to a scientific committee to be based on consensus.

The pressure effect of the beneficiaries should be rejected.

Communication skills are very vital. It should be well known to every orthopaedic surgeon. Working as a team or group will help to give support and confidence and also reduce the chance of making mistakes; it is well known that two brains are much better than one.

One vital message an orthopaedic surgeon should carry is to look after his junior colleagues; it is impossible for them to build experience without his or her assistance. The art and tricks of surgical practice can never be gained by reading, writing or simply observing. They should be amidst the scene and this is not possible without a faithful and caring escort. Another message is identifying the distinguished junior colleague, and then guiding him to improve his capabilities, hoping to raise the flag after his senior. Also, advice should be given from the start to those who are unfit for surgical practice to find another specialty that matches their capability and personality. I think this should be done to reduce harm on the patient and to preserve the good reputation of surgery. Considering the patient and his suffering as a source of financial gain is not only unethical but also a surgical crime, because the patient's benefits should be the top priority. Commercialization of one's career should be resisted in all directions. Sadly, some medical representatives convey information which is far from real.

The dream of every society is to have a twelve-star orthopaedic surgeon, who has the following specifications:

1. Up-to-date reader
2. Care provider
3. Decision maker
4. Good dissector

5. Problem-solver
6. Active thinker
7. Innovator
8. Communicator
9. Community leader
10. Ethics-holder
11. Hard worker
12. Tolerator

After reading the words above, it is time for every orthopaedic surgeon to ask himself or herself whether he or she corresponds to the above character. How far is he or she from the ideal? And how many stars does he or she hold? Can he or she work hard to reach the optimum? If not, it is preferable to stay away from surgical practice and seriously look for a substitute, so that no harm will reach our dear patients. By having a high quality orthopaedic surgeon (12 stars), surgical practice will be smooth and quite trouble-free, have a good reputation, and will be a successful specialty.

SICOT Global Network for Electronic Learning - SIGNAL

Article of the Month

July 2013

Patterns of isotope uptake in sequential postoperative bone scan in undisplaced femoral-neck fractures

Byung Ho Yoon, Young Woong Kim & Hyung Ku Yoon

Purpose We aimed to investigate the changing pattern of isotope uptake in the sequential bone scan test for the prediction of osteonecrosis of the femoral head in patients with an undisplaced femoral-neck fracture.

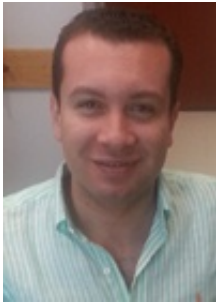
Methods Fifty-four cases of sequential bone scan for non-displaced femoral-neck fracture treated by internal fixation with cannulated screws between 2000 and 2009 were retrospectively studied. The mean follow-up period was 4.2 years. The first postoperative bone scan was performed two weeks postoperatively in all patients. Second, third, and fourth follow-up bone scans were performed at one to six months, 12–18 months, and 18–24 months postoperatively.

Results Mean femoral-head ratio (FHR) in the first postoperative bone scan was 0.99. Although it was under 1.0 in 38 patients (70.4% of the 54 patients), only one patient developed osteonecrosis of the femoral head. The others showed hot uptake in their second follow-up bone scan. Mean FHRs in the second, third, and fourth postoperative bone scans were 1.69, 1.29, and 1.05, respectively, and there were significant statistical differences in each follow-up period ($P=0.035$). In addition, there were unique patterns of isotope uptake with the passage of time, such as cold uptake in the early stage, hot uptake in a couple of months, and iso-uptake in the late stage.

Conclusions Early postoperative bone scan results should not be over interpreted when predicting osteonecrosis of the femoral head.

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Fellowship News



Report of the SICOT meets SICOT Fellowship at CHOP, United States

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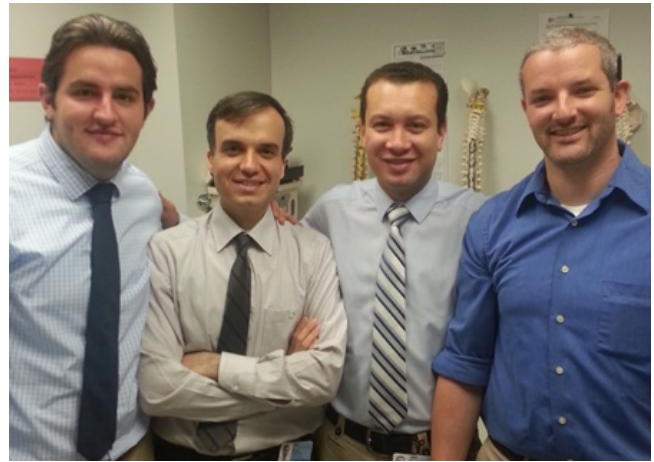
I had the honour of being selected by SICOT for the "SICOT meets SICOT" (SmS) Fellowship Programme at the Children's Hospital of Philadelphia (CHOP) during May 2013.

Philadelphia is a pleasant city located in the eastern region of the United States. CHOP is the main paediatric hospital of the University of Pennsylvania. In 2012, CHOP was selected the best children's hospital in the United States. The division of Orthopaedic Surgery in CHOP is always busy in terms of providing quality patient care, training of medical staff and doing research work.

My experience in CHOP was really great, starting from the hospital set-up to the detailed surgical techniques. The team of the Orthopaedic Division is wonderful. They provide integrated care to their patients.



With Prof John Dormans



Prof Dorman's team

Prof John P. Dormans, Chief of the Orthopaedic Surgery Division, is a great mentor and leader. My experience with him in the fields of limb salvage surgeries and spine surgeries was awe-inspiring. Since his clinic always has a high flow of patients, I had the chance to see some rare cases with him. I was also able to learn from him how to approach patients effectively in the clinic, how to teach them about their diseases and how to manage time.



With Prof Campbell



VEPTR

I also got more experience in early onset scoliosis, thoracic insufficiency syndrome and Vertical Expandable Prosthetic Titanium Rib (VEPTR) with the inventor of the VEPTR, Prof Robert M. Campbell, starting from decision making to surgical techniques. I was able to better understand the management of thoracic insufficiency syndrome. It was my first experience with (VEPTR II) which has improved a great deal compared to the older VEPTR version. Prof Campbell taught me to think of the thorax as much as I think of the spine or more when I insert the VEPTR.

In the operating rooms I observed many spine and tumour surgeries using different surgical methods. O-arm

navigation is used by many surgeons in pedicle screws insertion. I also had good discussions on growing techniques for management of early onset scoliosis and choosing the level of lower instrumented vertebra in Adolescent Idiopathic Scoliosis.

On weekends I visited some other American cities such as Atlantic City, Baltimore and Washington DC. The National Mall in Washington DC is a great place for tourists.

I returned to Egypt after the one-month fellowship and I discussed what I had learned in CHOP with my colleagues to spread and maximise the benefit.

Controversies in Orthopaedics



Femoral neck fractures: Evidence Based Medicine

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Introduction:

Femoral neck fractures are common and occur in 3% of young adults and this incidence rises to 97% above 60 years of age. However, many aspects of treatment are debatable. It has been reported in the literature that the incidence of AVN in young adults ranges from 0-86% and non-union 0-45% (1), hence careful attention should be given to those injuries that present frequently in our orthopaedic department. In a trial to answer these debates we conducted an Internet search and found thousands of reports.

The following review covers the evidence based answers for the options of treatment available, the implants, timing of treatment, whether to perform a capsulotomy or not, to do open or closed reduction and the choice of prosthesis in case arthroplasty was the chosen method of treatment.

What are the treatment options?

The treatment options available for femoral neck fractures include non-operative, internal fixation and different forms of arthroplasty.

When can we use non-operative option? This treatment is nowadays reserved for non-ambulators, patients with prohibitive medical comorbidities that absolutely contraindicate surgery, and patients who are neurologically impaired. This concept is supported by a report of 247 undisplaced fractures showing 16% complications and 20% displacement in non-operative group compared to 3% and 0% consecutively in operative group (2).

Undisplaced fractures showed a variable incidence of non-union and AVN amounting to 6.4% and 5.8% in many studies. In 2011 the Norwegian Hip fracture registry published the clinical outcome of 4,468 undisplaced fractures with 89% implant survival at 1 year (3). Since failure rate is only 10%, and the technique is safe, simple and can be done percutaneously, internal fixation is considered the best option for undisplaced fractures (4). The second parameter to be considered is stability, valgus impacted are considered stable and are treated by percutaneous fixation.

Internal fixation; how and when? It can be performed *percutaneously* and is indicated in undisplaced, valgus impacted, and in cases of displaced fractures after success of closed reduction. It is considered a reliable option in displaced fractures in the young but has a high failure rate in older patients. Alternatively, irreducible displaced fractures are treated by *open reduction* and internal fixation, as the quality of reduction is the single most important factor affecting the result (5-6).

In 2004 Upadhyay et al conducted a RCT of 102 patients between 15-50 years comparing the results and complications of closed versus open reduction in displaced and found no significant difference between the groups in terms of union and AVN (7).

What is the best timing for fixation?

Many reports were published supporting early fixation before 12 hours and others that contradict this factor as being valuable (7-10). Damany et al performed a meta-analysis of 18 studies in 2005; found conflicting evidence and concluded that the difference in the incidence of non-union and avascular necrosis for early versus late surgery was not statistically significant (1).

Literature does not support the fixation as being an emergency procedure and *Davidovitch et al 2010* recommended that femoral neck fractures in young should be addressed surgically in an urgent as opposed to emergent fashion (5). However, as there does not seem to be any increased morbidity associated with operating earlier rather than later, a widely displaced fracture is likely best treated within 12 hours after injury or as a first priority in the next day's operative schedule (5).

Should a capsulotomy be done?

There is no evidence base for doing a Capsulotomy, results showed no significant difference in many studies RCT (1,7,11). However since it theoretically relieves intracapsular hematoma, it can be performed closed using image intensifier, it is simple, and adds no morbidity, then consider it in young patients with undisplaced fractures as they still have a reported incidence of AVN (5,12).

What is the choice of implant?

To choose screws or DHS is another debate, generally cannulated screws are preferred, Bhandari and 14 other

authors conducted an international survey asking about preference of 442 surgeons and found that for undisplaced fractures: 92% preferred fixation (90% screws vs. 10% DHS) and in displaced only 25% favoured fixation (out of whom 68% screws vs. 32% DHS) (13).

Cannulated screws: 3 parallel screws in an inverted triangle or base down configuration (8,14) with one screw in AP view close to calcar to prevent varus displacement and another screw in the lateral view close to posterior cortex to prevent retroversion. In fractures with *posterior comminution* some authors recommended a fourth screw (8,15). While biomechanically there is some benefit to a fourth screw placed for posterior comminution. Those with severe posterior comminution generally are better treated with a dynamic hip screw (DHS) (5,16).

DHS: remember to use an anti rotation screw in cases of femoral neck fractures. Baitner et al found less femoral head displacement, less shearing displacement at the fracture site, and greater load to failure using DHS (16). Others found increased non-union rate, and higher AVN incidence (17). A meta-analysis of 25 RCT including 4,925 patients with femoral neck fractures found no significant difference between screws and DHS (18).

What factors affect the outcome of fixation?

Quality of reduction is the most important factor for a good outcome (6), so aim at anatomical reduction, if not possible less than 10° angulation antero-posterior, 10° valgus can be acceptable but no varus is allowed. Immediate weight bearing can be allowed (8).

Does arthroplasty have a role? The indications for arthroplasty are primarily in the elderly, low demand, and osteoporotic patients and secondarily in failed fixation, non-union, and AVN after femoral neck fractures. The options are unipolar fixed or modular, bipolar hemiarthroplasty, and total hip prosthesis (THA), whether to do cemented or uncemented prosthesis. Endless publications compared internal fixation and arthroplasty, different forms of arthroplasty, and cement fixation versus use of uncemented prostheses. We will try to summarise the conclusions of those publications.

Internal fixation or arthroplasty? Several prospective RCT's were performed with no clear overall advantage of either method. So a meta-analysis by Bhandari et al 2003 (19), and a database systematic review by Masson et al 2003 (20) were performed and found a higher reoperation rate 35% and 33% (consecutively) with internal fixation compared to 11% with arthroplasty. Another meta-analysis of 14 RCT involving 2,289 patients by Rogmark and Johnell in 2006 (21) showed the rate of failure of internal fixation to be 21-57%, a reoperation of 14-53% in contrast to 7% after arthroplasty. In 2010 Gjertsen et al (22) compared fixation with bipolar HA for 4,335 displaced fractures in elderly >70 years old, fixation in 1,823 and HA in 2,512 patients. After 1-year reoperation rate was 22.6% for fixation vs. 2.9% for HA. The pain score, patient satisfaction and quality of life were all in favour of arthroplasty (19-23). THA should be considered in any fit older patient with a displaced femoral neck fracture. Patients with concomitant osteoarthritis, rheumatoid arthritis, or renal failure do badly with other forms of treatment and should also have a THA. Randomized trials have shown THA to be a cost-effective treatment with lower complication rates than reduction and fixation. It also appears to be better than hemiarthroplasty, but larger trials are needed to confirm this observation (24).

Bipolar or Unipolar? Cochrane systematic review by Parker & Rajan 2001 included 4 trials with 391 patients and another by Parker & Gurusamy in 2006 with 6 trials and 549 patients found no significant difference in incidence of dislocation, acetabular erosion, wound infection, reoperation rate, DVT, mortality, walking or functional outcome. The only difference was that Bipolar is more costly, and they even thought that it becomes unipolar within months (25-26). Considering the higher cost of bipolar hemiarthroplasty and the potential consequences of polyethylene wear debris on implant fixation in bipolar hemiarthroplasty, many authors advocated reserving the use of a bipolar implant for the younger, more active patient, discouraging its use in the elderly (27-28).

Should we do cemented or cementless prosthesis? The same two Cochrane reviews showed good evidence that cementing the prostheses in place will reduce post-operative pain at one year and lead to better mobility (25-26). Cement disadvantages include increased operative time by 15 minutes, cost, arrhythmias, and cardio-respiratory collapse (29). Whether to cement or not should be determined by whether a stable prosthesis will result. Many older patients have very wide proximal femoral canals and are best managed with a cemented stem and this statement was supported by 14 references in an editorial in the Injury journal (23).

Is Total Hip Arthroplasty (THA) indicated? We will try to summarize the most recent evidence here. Some authors recommend consideration of primary total hip replacement in the elderly patients with a displaced femoral neck fracture who are independent, physically healthy, mentally lucid, and active so that they engage in recreational activities beyond simple walking (30). The criteria defined by Blomfeldt et al seem most appropriate and can be considered to be evidence-based: acute (less than 48 hours) non pathologic fracture, good cognitive function, non-institutionalized independent living status, and pre-injury independent walking capability with or without aids (31). In 2008 a prospective, multicenter, RCT of 40 out of 114 patients; 17 with THA and 23 with HA; Macaulay et al found at 2 years follow-up that the SF-36 score was significantly better with THA, WOMAC also was significantly better with THA, and pain much less with THA, however complications showed no significant difference (27). There is some evidence that a total hip replacement leads to better functional outcome than a HA in a series of 400 patients (32). When comparing internal fixation to unipolar, bipolar, and total hip, a study in 2004 showed that at 2 years, the best result from a pain standpoint is a total hip replacement. The best result from a functional standpoint is a total hip arthroplasty, and that survivorship is also higher with a total hip arthroplasty (33). Another series in 2006 comparing total hip replacement to internal fixation in 298 healthy patients aged 60 and above, found it is 8 times more likely that there will be a need for revision in the ORIF group. The best function is with total hip replacement, and long term is more cost effective (34). The same results were confirmed by a meta-analysis of 407 patients in 3 trials published in 2009 (35). In March 2011; the orthopaedic trauma directions

published an update to an older report from April 2007 including 5 studies comparing THA with HA and concluded: more dislocation with THA, more mobility with THA, more revision with HA, no difference in the mortality rate and difference in pain was inconclusive (36).

Conclusion:

Careful choice of the line of treatment should be based on age, function, and the evidence we have available and which we tried to gather in this chapter. In young patients <55-60 years; fixation is the treatment of choice, from 60-80 years treatment is still debatable THA being considered, and >80 years HA preferably cemented is used. However, trials with enough power and methodological rigour are needed to answer the questions that are still inconclusive (37).

Institutional recommendations:

- In young patients <60 years; fixation is the treatment of choice.
- Internal fixation for impacted, young (3 screws Percutaneous) or displaced (CR or ORIF Watson-Jones 3-4 screws/DHS).
- Timing: within 48 hours or first case in the operative list next morning if possible.
- Outcome: accurate reduction, screw placement & posterior comminution affect AVN > delay.
- Capsulotomy: theoretical, young, un- or minimally displaced, fluoroscopy assisted.
- 60-70 years; fixation, HA or THA can all be used according to the activity level of the patient and pre-existing OA of the hip.
- >70 years cemented HA is used.
- Non-operative treatment is reserved for non-ambulators, and patients with prohibitive medical comorbidities that absolutely contraindicate surgery.

Acknowledgement:

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Worldwide News

Open reduction and internal fixation of acute intra-articular displaced calcaneal fractures: A retrospective analysis of surgical timing and infection rates

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Comment by Ahmed M. Khedr - Cairo, Egypt (revised by Ahmed H. Abdel-Azeem)

Abstract

The choice of surgical timing in open reduction for calcaneal fractures has been proposed to be associated with soft-tissue complications and infection. This study analysed the correlation between surgical timing and postoperative infection rates. We performed a retrospective single-surgeon single-facility study (Kaohsiung Medical University Hospital, KMUH) between January 2006 and January 2010. Fifty patients with 53 close intra-articular calcaneal fractures were included. They received open reduction and internal fixation via the extensile lateral L-shaped approach. We assessed the duration between heel trauma and operation from the medical records and sorted our patients into early (within 3 days), intermediate (from 3 to 10 days) and delayed (over 10 days) surgical groups. The mean follow-up period was 13 months. Only one of the 50 patients, a 74-year-old female with diabetes mellitus, developed deep infection requiring hardware removal and serial debridement. Overall, we did not find a statistical difference in postoperative infection rates in the different timing groups. Our conclusion is that in experienced hands, surgical timing may not affect postoperative infection rates in calcaneal fracture among strictly selected patients who do not have potential risk factors for wound complication. Therefore, early operation may be helpful to these patients.

Comment

Wound-healing problems and infection continue to plague the surgical treatment of calcaneus fractures. With a reported incidence between 10 and 30%, wound edge necrosis is the most common complication of open treatment of calcaneus fractures¹. The incidence of wound edge necrosis has declined with the popularization of the extensile lateral approach, an approach that respects the lateral angiosomes about the foot and ankle. In 2003, Howard et al reported 20.8% infections among 226 patients treated by lateral approach². In 2004, Zwipp and colleagues reported a 6.7% prevalence of wound edge necrosis in 553 operatively treated calcaneus fractures via a lateral extensile exposure³. In 2005, Koski reported 8% rate of wound edge necrosis⁴. Despite the development of new approaches and surgical techniques, wound infection is still a concern. In 2011, Tomesen et al reported 13% infection rate among 39 patients treated by closed reduction and percutaneous fixation⁵. Although there is a consensus that soft tissue swelling and edema negatively affects the outcome of surgery, the decision of "when to operate?" is still controversial.

This retrospective study shows that selected patients could probably benefit from early surgery without wound related complications. The study strengths include that all patient were operated upon by the same surgeon in the same institute and in the five-year interval. This minimises the bias from different operation teams, hardware, treatment protocols and the institutional antibiotic-sensitivity spectrum. The limitation of the study is the small sample size which the author confessed to be "insufficient to provide significant statistical power between the three surgical-timing groups". However, this study can provide a clue to determine the optimum timing for operating upon this fracture. It also highlights the importance of tailoring this decision according to the patients' individual factors and co-morbidities.

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