SICOT Newsletter

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Training the Next Generation

Satish Kutty
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At a recent ceremony for the presentation of Diplomates at the Royal College of Surgeons of England, Prof Michael La Quaglia was granted Admission to the Honorary Fellowship of the College. Prof Michael La Quaglia is a Paediatric Surgical Oncologist, working at the world-renowned Memorial Sloan Kettering Cancer Hospital in New York. The first line of his citation read as “Michael La Quaglia is a gifted technical surgeon, a compassionate physician and an inspirational mentor [but only an average marathon runner!]”. To me the “inspirational mentor” struck a chord. His acceptance speech left a lasting impression on the audience. He wanted the next generation of surgeons to engage and seize opportunities, be innovative and lifelong learners. He could not emphasise enough though the importance of family life and work balance. These are life experiences and pieces of advice coming from a master.

I was quizzed recently as to my most treasured memory as a trainee and which trainer or trainers left their lasting mark. As I tried to gather my thoughts and move back in time, I was left to ponder over what sort of impression I left/leave as a trainer for my trainees? Am I doing my best in fulfilling my responsibilities? It is easy to forget that “Doctor” in Latin “Docere” is ‘to teach’! I was fortunate to be trained by some phenomenal trainers and key opinion leaders. Some of them certainly left a lasting impression. Abraham Maslow proposed a theory on motivation and developed a hierarchy of needs model (Figure 1). Basic needs in terms of education will have to be fulfilled first. Otherwise, the foundation of the pyramid will be affected. This brought back not so pleasant experiences during my own training. Noticing my unhappy demeanour, my mentor who was a senior surgeon pulled me aside and asked me to visualise my experience as a “Tour of Duty”. He was referring to the armed services compulsory duty that the American citizens had to perform during the war in Vietnam. He wanted to harness my unpleasant period as a learning experience. Vygotsky’s model on ‘the zone of proximal development’ (Figure 2) provided me with insight into pushing the boundaries of a trainee’s knowledge with engagement. This was certainly what my phenomenal trainers did subconsciously, pushing me beyond my comfort zone but in a pleasant way in order to reach “Self Actualisation”, the apex of Maslow’s pyramid. They wanted me to think like a consultant and a leader, even when I was a trainee. One of them casually mentioned of his reasoning behind this constant push of intellectual stimulation and hard work: “I want you to be better than me!”, he said. In a similar way, Sir Trevor Soar, a former Commander-in-chief of the Royal Navy, said: “People need to think like a Captain even if they are a young Sailor”.

It is not easy to be a trainer. For some this comes naturally but for others it is hard work. What is important is the need for trainers to understand trainees and their individual needs. This is indeed a challenge as it varies from trainee to trainee. Various methods have been described which trainers use. While most are fairly comfortable with a Didactic (the mainstay to provide theoretical knowledge) or a Socratic approach (the oldest and powerful way of fostering critical thinking by questioning), one needs to be more flexible introducing other approaches such as the Heuristic (method of discovery) or Counselling (feeling) approaches. The last two are underutilised. Dr Michael La Quaglia talks about the need to have humility (for trainers). This transcends into the ability to understand people (trainees) and problems. Sir Trevor Soar’s leadership skill set includes humanity. He says “We have to be able to understand people’s emotions, aspirations and perceptions, even if you do not agree with them. Understand what matters to people and listen to them. Not many people listen.” This statement is without doubt applicable to all trainers and current trainees who will go on to be the next generation of trainers.

To be a trainer is a privilege indeed. We have the opportunity to train the next generation of Orthopaedic Surgeons. Working practices have changed. We are governed even more by protocols, pathways and regulations. These are challenging scenarios putting service obligations at the heart of our duties. Very senior surgeons, mentors, trainers do feel the changing landscape is “not for me”. It may seem a selfish motive but I personally feel the need to invest in the next generation regardless of the challenges faced. This concept of investment is highlighted in Lave & Wengers’
“Communities of Practice”. It is a joint enterprise through apprenticeship with engagement in a meaningful activity – Training the Orthopaedic Surgeons of the future. After all, they need to slip into my “shoes” when I do hang mine up and of course be better than me (not that mine are big!).

Case of the Month

Non-traumatic low back pain

Mikalai Chumak & Pavel Volotovski
Minsk, Belarus

History

A 36-year-old man suffered from pain in the lumbar spine, periodically radiating to both legs. The pain was present for about 4 months, then spontaneously resolved for 4 months and resumed again after exercise. Palpation of the lumbar spine was painful in the projection of the L3 vertebra. There was no neurological deficit. X-ray of the lumbar spine in 2 views showed changes in the shape of the L3 vertebra. A complete blood count revealed an increase in ESR to 18 mm per hour.

Q. What is your provisional diagnosis for this patient?

To read more, please go to: www.sicot.org/enewsletter-85-signel-case
I have the pleasure of announcing that on 11 January 2017 SICOT was honoured by the National Academy of Surgery of France. Historically called the Royal Academy of Surgery, this Academy was founded in 1731 by King Louis XV at the request of Georges Maresch, Head Surgeon at the “Hôpital de la Charité” in Paris.

It had two objectives:
- to have surgeons recognised as equal to doctors, who considered them “clerks and servants” and kept them away from University;
- to have a place to study, discuss, and disclose new surgical methods.

Mareschal was its first President and the Academy was set up in an amphitheatre which was built in 1694 by the architect Joubert and still exists today at 5 Rue de l’École de Médecine.

Its reputation spread rapidly and its publication, “The Memoirs of the Academy”, was read throughout Europe. In view of this success and at the King’s request, the architect Gondouin built a new amphitheatre in 1774, still on Rue de l’École de Médecine, which was to become a Faculty of Medicine under the First Empire. In 1793, the Revolution suppressed all the Academies. The Academy of Surgery did not regain its title of Academy until 1935 and became National in 1997.

It is managed by a Bureau, elected by a Board of Directors, currently of 24 members. Associate and Full Members are elected by the General Assembly according to their CV and upon application. There are about 350 members. From 70 years of age onwards, they may apply for Honorary membership. In addition, there are currently 166 foreign Associates and Honorary Members, who have been chosen for their exceptional reputation.

The Academy holds a meeting once a week, on Wednesdays. The meetings include papers with discussions on technical, institutional, legal or organisational topics related to Surgery. They are published in the form of electronic dissertations (over 1 million consultations per year) and are fully recorded and transmitted via video on the fully accessible website of the Academy (www.academie-chirurgie.fr) with 800 consultations per day.

The Academy wishes to bring together the best surgeons of all specialties, namely those who have honoured our profession through their work and their innovations. Guardian of history, guarantor of ethics, rigorous evaluator of technical developments, integrating all modern aspects of surgery, associated with institutional reforms, attached to the training of young students, and attentive to legal developments, the Academy can present itself as the “House of Surgeons”.

During the solemn session on 11 January 2017, the Academy Medal was awarded to SICOT by the then President of the Academy, Henri Judet. The medal was awarded to Maurice Hinsenkamp, Past President of SICOT, with a large delegation composed of Jacques Caton, Jean-Pierre Courpied, Jacques Duparc, Philippe Hernigou, Dominique Poitout and Thami Benzakour, all of them members of the Academy and SICOT. The Secretary General of SICOT, Jochen Eulert, was also present.

This recognition bears witness to the strong links that exist between the Academy and SICOT ever since the foundation of the latter. Already in October 1929, at Hotel Crillon, two of the founders of SICOT were Presidents of the Academy: Louis Ombredanne and Etienne Sorrel. Two of the Academy members were also Presidents of SICOT: Louis Ombredanne and Robert Merle d’Aubigné.

The Academy and SICOT share the same objectives for the improvement of science, research and education in Orthopaedics and Traumatology.

Photo on the cover:
The SICOT delegation: Philippe Hernigou, Maurice Hinsenkamp, Jacques Caton, Thami Benzakour, Henri Judet, Jean-Pierre Courpied, and Jochen Eulert
Orthopaedic surgery training in Singapore has undergone significant changes over the past few years with the introduction of the residency system modelled after the American Residency Program. The first intake of this new system which consists of a rigorous and structured programme started in 2010. There are currently 3 Sponsoring Institutions (SIs): National Healthcare Group (NHG), SingHealth Group, and the National University Health System (NUHS) Group each offering about 5 to 8 slots per year. These SIs work closely with the American Accreditation Council for Graduate Medical Education (ACGME) to obtain accreditation for their residency programme.

Interested applicants can apply for the residency programme from the final year of medical school but due to the limited intake applicants with less experience and sparser curriculum vitae (CVs) have a lower chance of getting in. Even if they do get in, they can only start after completing their Housemanship or Post-Graduate Year 1 (PGY1). The selection process includes submission of their CVs as well as referees and an interview with members of the Core Faculty which consists of 4 scenarios testing the candidates’ communication, decision-making, ethical and clinical abilities.

After getting through this first round, successful candidates are then given the option of ranking their SIs of choice. Usually they would have worked at the hospitals which come under the SIs and have also been in contact with the Program Director (PD) and Core Faculty members in order to decide which ones are their top options. The final selection is decided again by the staff of the SIs that they have chosen after reviewing their academic, clinical and extra-curricular records as well as their interpersonal skills.

Once they have gained entry into the programme, residents start a 6-year programme with the first year consisting of ‘external’ rotations in Anaesthesia, General Surgery and Emergency Medicine to provide a thorough and holistic training programme. From year 2 to year 5 (R2 to R5), residents go through 2- to 4-monthly rotations in all the orthopaedic subspecialties (Trauma, Adult Reconstruction, Foot and Ankle, Spine, Hand, Sports, Oncology, Paediatrics). For the final year of the programme, residents can choose to spend more time in the subspecialty of their interest as well as being allocated time for research and even community work.

The teaching schedule is structured over 2 years based on the programme curriculum with residents coming together each Friday afternoon for dedicated teaching led by Core Faculty members. This can consist of didactic teaching, case discussions, workshops or seminars. Senior residents who have completed the 2-year run-through of the curriculum are expected to contribute more of their added insight and also use these sessions to reinforce their knowledge.

As the current programme is an integration of the previous system which is more United Kingdom-based and the American residency system, residents undergo evaluations from both. Residents are expected to clear their Member of the Royal College of Surgeons (MRCS) exams in their first 2 years and are also assessed yearly with the online Orthopaedic In-Training Examination (OITE) organised by the American Academy of Orthopaedic Surgeons (AAOS). There is no set passing mark for the OITE which is meant to be formative but residents are expected to show improvement year on year. They are also regularly assessed by their mentors in the different rotations that they go through with a combination of Direct Observation of Procedural Skills (DOPS) and mini-CEX (Clinical Evaluation Exercise). Year 3 residents have to undertake a viva examination combined with a written thesis as part of their Master of Medicine (Orthopaedic Surgery) which is a prerequisite to becoming Senior Residents (or Registrars in the previous system).

R6 residents have to undergo their final assessment in the form of the Fellow of the Royal College of Surgeons (Orthopaedic) examination which is held locally. In order to attain specialist status, residents also need to fulfil other requirements set by the national Residency Advisory Committee (RAC) which includes research publications and presentations.

References can be found at: www.sicot.org/enewsletter-83-training-around-world
How I do a Hexapod Circular Frame

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Introduction

Although circular frames were widely used in Soviet Russia in the 1960s, they only reached the west in 1981. Carlo Mauri, an Italian adventurer, suffered with an infected non-union of his tibia despite multiple surgeries [1]. He subsequently travelled to Kurgan in Russia and underwent surgery by Prof Ilizarov achieving tibial union with resolution of the infection. He in turn introduced the Ilizarov technique to Italian surgeons, who visited Kurgan and invited Prof Ilizarov to Italy to demonstrate the Ilizarov technique.

In the western world, the results reported from Soviet Russia were initially looked at with complete disbelief. However, the circular frame was gradually adopted by a group of surgeons who used it as a last resort for selected cases.

Indications for using a circular frame include leg length discrepancies requiring leg lengthening, non-unions, deformity corrections and bone infections, all of which come under the concept of limb reconstruction surgery. Deformity correction using the circular frame provides the flexibility of ensuring that the limb is perfectly aligned (Figures 1A, 1B, 2A and 2B) to the mechanical axis along with leg lengthening, if required.

In this article, the technique of applying the hexapod circular frame for deformity correction in the tibia is discussed (Figures 4A to 4E). Introduction of the hexapod in the late 1990s allowed deformity correction simultaneously in all 3 axes, which has made deformity correction surgery extremely simple.

Procedure

Understanding the principles of deformity correction is critical [2]. Preoperative planning is essential and can be undertaken either traditionally using a pen-and-paper or using commercial softwares like Trauma Cad. Surgeons must also analyse the secondary effects of deformity correction. Preoperative analysis should cover the following 3 categories:

- Local anatomy – previous surgeries, soft tissue status/scarring, current or previous infection. Local soft tissue often dictates the level of the corticotomy.
- Patient factors – smoking, co-morbidities, psychosocial status, medication and family support.
- Deformity personality – level of deformity, uni/multi-apical deformity, plane of deformity, translation and any leg length discrepancy.

Midshaft deformities are traditionally treated using a 4-ring frame. However, the number of rings and fixation are determined by a multitude of factors such as the type of fractures for trauma, the simplicity or the complexity or the amount of correction in need.
Any type of anaesthesia can be suitable but the patient should not be paralysed during the surgery. At the preoperative team brief, postoperative pain control should be discussed with the anaesthetist. At our unit, we use ultrasound guided regional blocks and indwelling catheters (which continue postoperatively for 48-72 hours) for pain relief, but an epidural or patient controlled analgesia (PCA) are also suitable.

In our unit and under tourniquet control, a fibular osteotomy is performed, which can be oblique or transverse depending on the direction of the tibial deformity correction and lengthening. At the planned tibial corticotomy site 2, transverse incisions are made, each about 1-2 cm at the edge of the tibia. As a guide, and subperiosteally a vicryl suture is passed but the corticotomy is performed only after the application of the fixator.

The tibial deformity can be divided into proximal and distal segments. 1-2 rings are aligned perpendicular to each deformity segment (Figures 4B and 4C). A transverse olive wire is then placed as a reference wire. The proximal ring is aligned to the proximal segment in the anteroposterior (AP) and lateral planes, ensuring that the master tab is in the centre of the tibia (Figure 3).

Similarly, the distal ring is aligned to the distal segment in both AP and lateral planes. Struts are then placed connecting both rings. Further hydroxyapatite coated Schanz pins are placed: one in the proximal segment and 2 in the distal segment. In this example 3 wires and one half pin were placed in the proximal segment and 2 wires and 2 half pins were placed in the distal segment. The fibula is usually fixed at both ends with a plain wire or sometimes the proximal tibiofibular joint can be stabilised with a half pin. Fixation can be increased in severe deformities, heavy patients, and where large forces are expected to be counter balanced.

The two/three anterior struts are then removed and a Gigli saw (pulling by the vicryl) is passed at the site of proposed corticotomy [2]. Protecting the skin, soft tissue and periosteum, a low energy corticotomy is performed using the Gigli saw; cooling with alcohol all the time. Image intensifier is used to confirm that the osteotomy is complete, and only then the anterior struts are placed back to connect the rings. The corticotomy can also be performed using a drill and osteotome technique.

Pin sites are released, and sponges are placed with compression.

Postoperatively foot splint is applied as soon as possible to prevent equinus contracture. First dressing is performed at 48 hours while the nerve catheter is running, ensuring there is minimal pain. First dressing is the most painful to change due to drying and crusting of blood. Patients must be also observed very closely for compartment syndrome.

Full weight bearing is commenced on day 1 and most patients go home in 4 or 5 days. Corrections are usually started on day 10. Lengthening is done at a maximum of 1 mm per day. However, angular corrections can be done much faster depending on patient and local factors such as the compliance of the patients, the age and health.
Surgical Technique

- Deformity
- CORA

- Proximal wire perpendicular to proximal segment
- Proximal ring

- Distal wires perpendicular to distal segment
- Distal ring block

LATERAL VIEW
Proximal and distal rings are also parallel to posterior border of tibia

- Further fixation
- 2 half pins in proximal segment

- Stabilization of proximal tibia-fibular joint

- Further fixation
- 2 half pins in distal segment

- Strut placement

- Further fixation
- Stabilization of distal tibia-fibular joint
Outcomes

Despite the initial concerns about once a day corrections and stiffness, the healing index has been similar to the standard Ilizarov frame in elective and trauma surgery [3,4,5,7].

Hexapods are far less complex frames and are ideal for multiplanar corrections. Accuracy of corrections has improved [6] and 3-plane simultaneous correction has simplified the surgeon and patient experience.

Conclusion

Circular frames have gained popularity due to the principles of preserving biology, functional loading and stable fixation achieving excellent results.

Limb reconstruction has evolved significantly in the last 25 years. Patient-centred outcomes have become the primary focus in evolution of limb reconstruction. Therefore, understanding the biomechanics whilst improving the patient’s experience of pain and ability to mobilise postoperatively have become an essential goal to achieve [3,6].

References can be found at:
www.sicot.org/enewsletter-82-expert-corner
It gives me great pleasure to report on my experience at König-Ludwig-Haus in Würzburg, Germany. I would confidently say that this opportunity has positively influenced me and left a wonderful impression that will stay in my memory forever.

It is indeed a hard job to put together my impression in a short report. So, I would rather go through different headings to be able to cover various points and reflect on all sides of my experience.

**Getting inside the powerful German system**

In König-Ludwig-Haus, you will be immediately considered a valuable member of the big family. People here are accustomed to receiving guests and integrating them smoothly in the daily work routine. From my humble point of view, the German system is a strict, well organised and structured one, which appears to be difficult to grasp in the first instance. Here comes the role of the wonderful personnel, who start teaching you every piece of information you need to be integrated into the work environment. I have learned from the Germans how to be attentive to detail and to stick to the system. I am really grateful for the help of the nursing staff and young doctors in this hospital. They strive to guide you through your first steps and even teach you the German names of the instruments!

**Broadening my scientific knowledge**

Prof Maximilian Rudert, the Chief of the Hospital, made it clear to me, and to everyone at the morning meeting during my first minutes at the hospital, when he said “ask everyone about everything; everyone knows English!” I have enhanced my basic knowledge on various types of arthroplasty. With such a high volume of hip, knee and shoulder replacement surgeries, both primary and difficult revision cases, one can fill the gaps in one’s knowledge and broaden one’s view. I would especially mention a totally new experience for me in the anterior approach of the primary hip arthroplasty, which is a landmark for König-Ludwig-Haus Hospital.

A considerable number of foot and ankle cases and arthroscopies added also to my orthopaedic knowledge. I am grateful to the young surgeons for the help provided in the outpatient clinic and for clarifying how to deal with the pre- and post-operative issues.

Prof Rudert is keen to keep the young surgeons educated and broad-minded. I therefore attended a cadaveric course for approaches to the hand and forearm for the first time. I am also thankful for the opportunity to attend the scientific meeting and the SICOT Trainees’ Meeting held during the 100-year celebration of the hospital’s foundation.

All in all, I can say that I had a well concentrated and up-to-date dose of orthopaedic practice, which will improve my future way of thinking and patient care.

**Chance to visit two hand surgery centres**

I am deeply thankful for the support given to me by Prof Rudert to join two outstanding centres for hand surgery. The first was the Hand and Plastic Surgery Department with Prof Meffert and the outstanding Jakubietz twins. No words can express my gratitude to the Jakubietz brothers, Prof Rafael and Dr Michael, for all the knowledge and skills they provided me with. I consider myself lucky to add such talented surgeons to my network, and I plan to keep a lifelong relationship with such wonderful twins!

The second invaluable opportunity was to join the Hand Surgery Campus in Bad Neustadt. This renowned centre performs over 6,000 operations per year and manages over 15,000 patients in its clinic. I was impressed with the hard-working chief surgeons, Prof Prommersberger and Prof van Schoonhoven. I had the honour of seeing how they decide for patients, how they operate, and how they actively run such a huge institute, not to mention the variety of cases I was exposed to in both the clinic and the operating theatres.

**Enjoying learning the German language**

I would quote the clever saying of Nelson Mandela: “If you talk to a man in a language he understands, that goes to his
head. If you talk to him in his language, that goes to his heart”.

These brilliant words are true. And when it comes to the German people, it is a golden piece of advice for visitors of Germany to know even basic phrases. Germans are proud of their language and are impressed when you try to speak it. Moreover, they help you in this hard task! I hadn’t realised that a 6-month stay would allow me to jump from A1 level to B2/C1 level!

The German scientific and social literature is full of wonders and treasures that lose their original taste after translation! I would also emphasise the dialogue with German kids, which enables you to realise how these amazing people raise their children to be extremely polite, organised and clever!

**Developing my personality**

Exposure to such a variety of people and to three different working groups allowed me to strengthen my extrovert attitude and trained me to be tolerant, while working with a totally new system and language. This experience was a real challenge that tested my ability to integrate myself into a totally new atmosphere and culture and to live in harmony with all the surrounding variables. This fills me with a lot of passion and trust in having a rich and successful career.

**Long-lasting relations and a wider network**

There is a German quote that says: "Das größte Geschenk des Lebens ist Freundschaft, und ich habe es erhalten" which means: “The greatest gift of life is friendship, and I have received it”.

I am really glad to have such a large number of friends, in both my professional and private lives, who will be there, ready to provide advice and support whenever needed. My close friend, Martin Lüdemann, the consultant of arthroplasty, is a good example of a sincere friend. He is a classic model for what a moral and successful surgeon should be. The treasure of getting to know people is really priceless!

**Final remarks**

It gives me the utmost pleasure to appreciate the support provided by SICOT to make this progress in my life a true story. The support and encouragement from Prof Rudert is invaluable. Despite being preceded by ten fellows, I felt like I was the first and only guest! I would like to extend my gratitude to all those working in König-Ludwig-Haus for their hospitality and generosity.

Last but not least, I am deeply indebted to the original founders of this opportunity: Prof Jochen Eulert, Prof Hatem Said, and Prof Galal Said.

I hope I have met their expectations and been a good representative to my country and my beloved Department of Orthopaedic and Trauma Surgery at the Assiut University Hospital.

I am full of hope that I can propagate what I have learned to my colleagues, and to be the best candidate for the best mentors.

*More photos can be found at: [www.sicot.org/enewsletter-83-fellowship-news](http://www.sicot.org/enewsletter-83-fellowship-news)*
The needs of orthopaedic residents, fellows and practising orthopaedic surgeons around the world are evolving constantly. At the same time, evidence-based knowledge in orthopaedics is expanding at a rapid rate. Moreover, all the residents around the world need to take exams at some stage in their career to mark completion of training and/or demonstrate competency. Also, practising orthopaedic surgeons do have to undergo some form of appraisal and/or revalidation at regular intervals to demonstrate fitness to practice. In both these scenarios, acquiring and updating knowledge in a short span of time is essential. The SICOT Educational Day was conceived with this purpose in mind.

The aim of this day is to provide a comprehensive review course for the residents and an evidence-based update for the practising surgeons on a specific theme at each SICOT Congress. The format of the day consists of four to six short lectures in each section followed by ample time for case discussions and debates and ample breaks. The first Educational Day was held in Prague with the theme of “The Hip”, and subsequent to this we have had 5 more of these days at each SICOT Congress and the response has been overwhelming with an excellent feedback. We have trained over 750 surgeons in the past 6 years and completed a whole cycle of the syllabus required to sit the SICOT Diploma Examination.

We commence our cycle again in Cape Town, South Africa, and the theme for this year is “The Hip”. As in the previous years, the day will focus on all the elements of hip surgery right from anatomy and surgical approaches to complex case discussions. Dedicated faculty along with key opinion leaders from around the world will be lecturing on the day. So, if you wish to learn, share, debate and discuss ideas and surgical techniques in an exciting environment with a group of international surgeons in one room, the Educational Day is the place for you. We look forward to seeing you there!

Vikas Khanduja  
SICOT Educational Day Chairman

For more information, please visit www.sicot.org/cape-town-educational-day