# Report on Tygerberg Hospital Orthopaedic Trauma Fellowship 30/06/14 - 27/06/15


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## Background:

At the time of undertaking this fellowship I was a Trauma & Orthopaedic Specialty Registrar Year 8 on the West of Scotland rotation. I attended the University of Glasgow Medical School and have undertaken all of my post-graduate medical training in the West of Scotland.

My main areas of sub-specialty interest are Lower Limb Arthroplasty and Orthopaedic Trauma. I have therefore focused my training on these areas. Although I have achieved all the competencies within the Orthopaedic curriculum, I felt that the experience I had dealing with complex trauma was not sufficient for me to be comfortable working as a Consultant managing such patients. For this reason I elected to undertake a Travelling Fellowship specialising in Orthopaedic Trauma.

Tygerberg Hospital is a government funded 1400 bed Level 1 Trauma Centre situated 11 miles from the centre of Cape Town, South Africa (fig 1). It has a catchment population of 3.6 million people within the Western Cape region and sees over 22000 trauma patients per year, with over 1500 of these patients being classified as 'Major Injuries' often arriving to the Accident & Emergency department already intubated and ventilated.

Fig. 1 – Tygerberg Hospital with view of Table Mountain from Orthopaedic floor

Dr. Jacques Du Toit is the Head of the Orthopaedic department at Tygerberg Hospital.

He came to Glasgow in October 2013 to deliver the Ian Kelly Memorial Lecture and it was during this visit that I had the chance to discuss a travelling fellowship to his department.

There are two reasons that I chose to go to Tygerberg Hospital rather than the more commonly frequented centres in the USA or Australia. Firstly, in South Africa I had the opportunity to register as a doctor with the Health Professional Council of South Africa (HPCSA) and therefore I would be able to operate on patients rather than simply be an observer, as happens in the majority of travelling fellowships. Secondly, there is a well established link between the Orthopaedic departments of Tygerberg Hospital and Glasgow Royal Infirmary (GRI), with several South African trainees undertaking fellowship training in Hip / Knee arthroplasty at GRI. I therefore wished to set a precedent, by becoming the 1st West of Scotland trainee to go to Tygerberg, in order to explore the possibility of establishing a reciprocal relationship where our trainees go to Cape Town to gain further trauma experience in exchange for their trainees coming to Glasgow for arthroplasty experience.

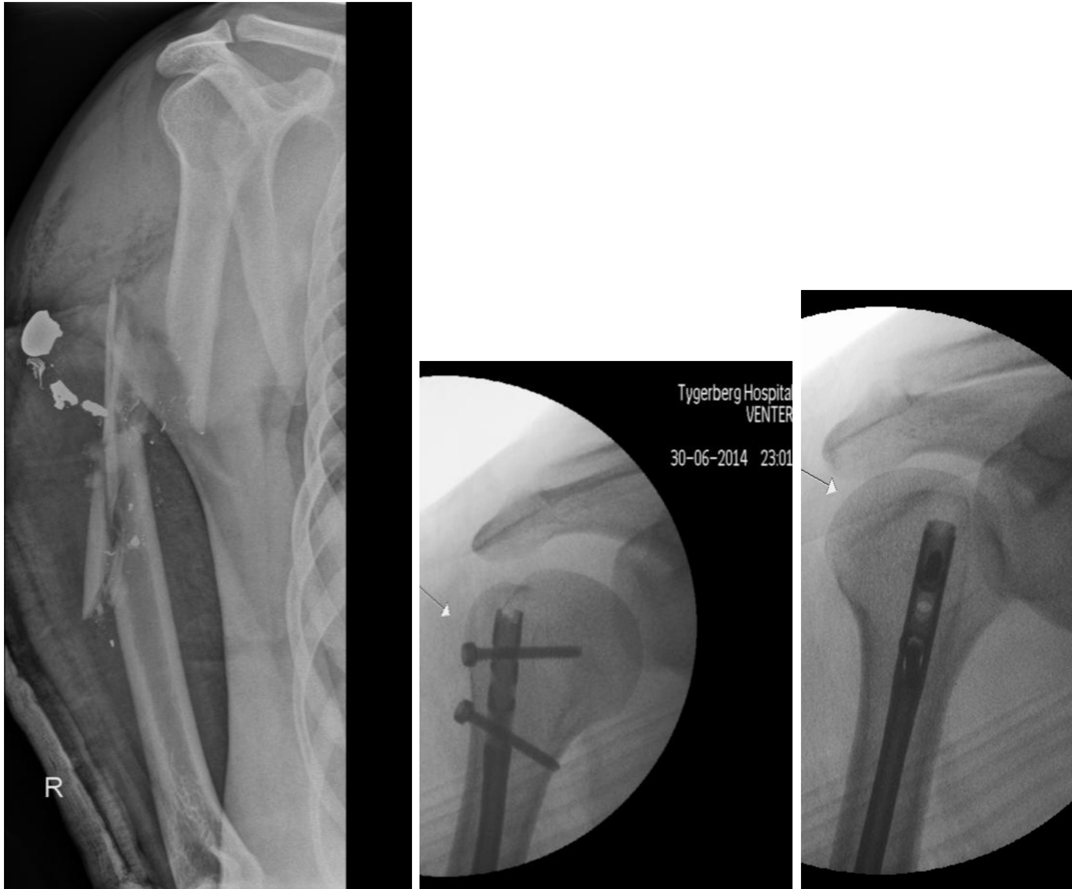
## General Experience:

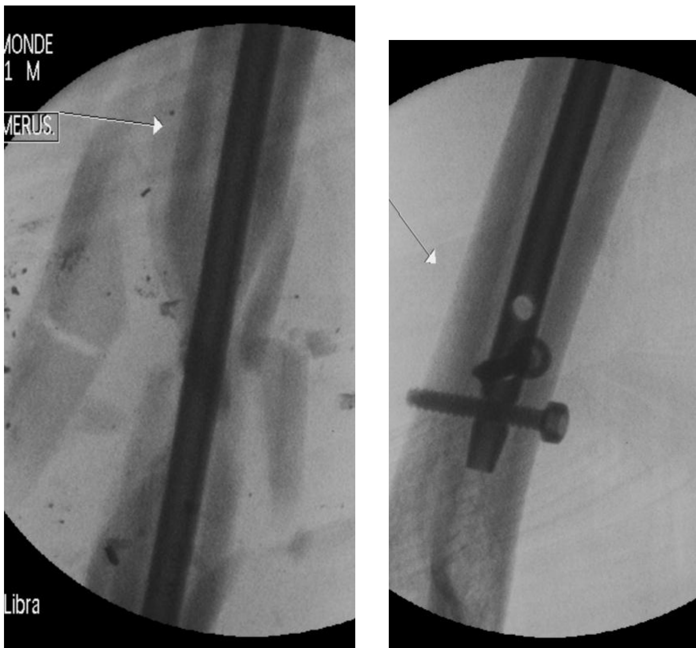
As expected, this is a very busy hospital and so the trauma theatre runs 24 hours a day, 7 days a week. on my 1st day there were over 18 admissions. Following presentation of the new patients they then presented another 20 or more patients that were still waiting for surgery including open long bone fractures, hip fractures, etc. At the end of the trauma meeting, the Consultants make a list of the 4 - 5 cases that are a priority for that 24 hour period and apart from that it is the responsibility of the registrar in theatre to get through as many cases as possible. Due to the shear volume of cases, patients often waited several days to go to theatre for injuries that would be treated as an emergency in the UK, such as open Tibial fractures.

As I am at the end of my Orthopaedic Registrar training, my aim was to get hands on experience dealing with complex trauma independent of Consultant supervision but also to get some expert tips and tricks for dealing with these cases. This fellowship was therefore perfectly suited to my needs as the registrars operate independent of supervision on the general trauma list but if there are cases that they need Consultant help with they can be added to the Consultant's weekly cold trauma list. This allowed me to pick and choose which lists I went to in order to get the best experience possible during my 4-week attachment.

By the end of my 1st trauma session I had removed a low-calibre bullet from an open fracture, nailed a humeral fracture (fig 2), nailed a Tibial fracture through the supra-patellar approach for the 1st time and fixed a 2-week old comminuted proximal Ulna fracture.

<u>Fig. 2 – Pre-op radiograph of Grade 3A Open Humeral # and Intra-op Images during Humeral nailing</u>



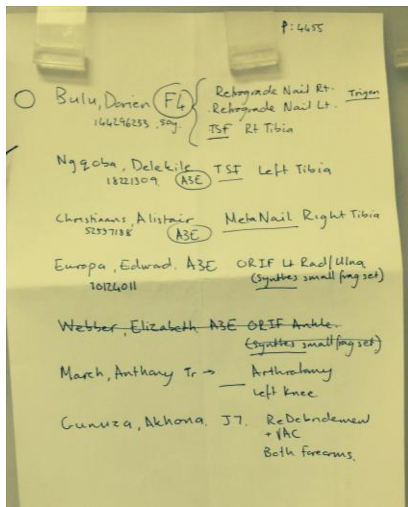




Overall I operated on over 100 cases in 1 month. This included: femoral/tibial nails, ankle fractures, external fixators, Taylor Spatial Frames, tibial plateau ORIF, distal femoral ORIF, etc. This was the best trauma operating experience I have had during my

Orthopaedic training.

On the general trauma list, myself and the oncall registrar planned the cases for the day (fig 3), the running order of the list and what equipment we would need (fig 4). This allowed me take on a more Consultant role prior to taking up a Consultant post in the UK.

Fig. 3 – 24 hour trauma list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Bulu, Dorien (F4) 144296233 50y. — Retrograde Nail Rt. / Retrograde Nail Lt. — Trigen / TSF Rt Tibia

Ngqoba, Delekile 18221309 (A3E) — TSF Left Tibia

Christiaans, Alistair 52537188 (A3E) — MetaNail Right Tibia

Europa, Edward. A3E 10124011 — ORIF Lt Rad/Ulna (Synthes small frag set)

~~Webber, Elizabeth A3E ORIF Ankle. (Synthes small frag set)~~

March, Anthany Tr → — Arthrotomy left knee

Gunuza, Akhona. J7. — ReDebridement + VAC Both forearms.

Fig. 4 – Stock room at 2 am selecting equipment trays and implants

The fractures we were dealing with were also often complicated by bone loss (fig 5), soft tissue injury (fig 6), and delayed treatment. This also allowed me to utilise techniques that I have read about in Trauma textbooks but never employed, such as: poller blocking screws to aid and maintain reduction (fig 7), supra-patellar entry point tibial nailing, Trochanteric plate attachment on a DHS, Fibular nails, Taylor Spatial Frames for trauma (fig 8) and use of a femoral distractor to aid reduction.

Participation in Consultant cold trauma lists also allowed me to get expert tips and gain experience in dealing with complex peri-articular fractures such as: calcaneal fractures, pilon fractures and complex tibial plateau fractures.

Fig. 5 – Pre-op radiograph of Grade 3A Open Femoral # with comminution resulting in bone loss following debridement

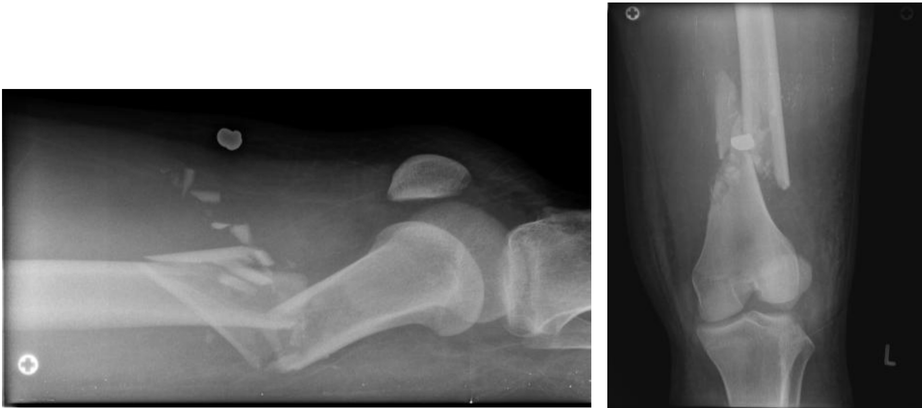



Fig. 6 – Pelvic Radiograph with Bilateral Grade 3 Open Proximal Femoral # resulting from a shotgun blast at close range with post-debridement VAC dressing to right buttock

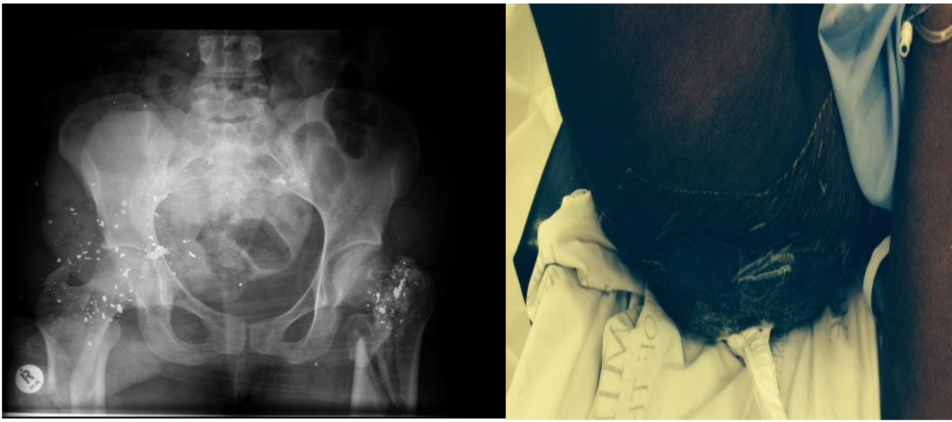


Fig. 7 – Comminuted distal 1/3 Tibial diaphyseal # with Poller screws to maintain reduction

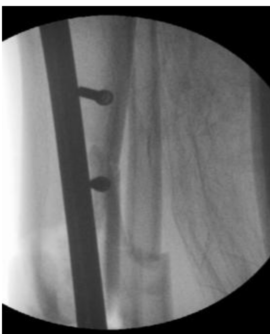
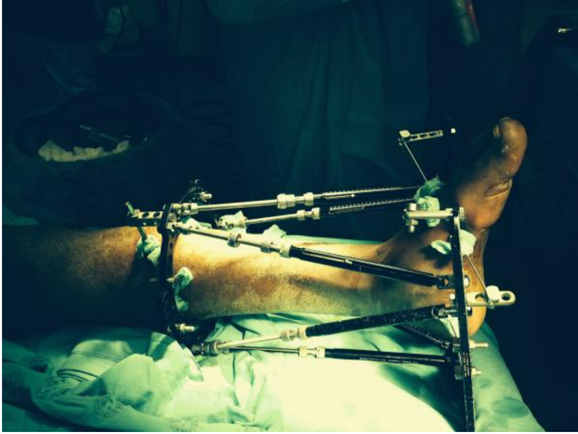


Fig. 8 – Taylor Spatial Frame for a Ruedi-Allgower Type 1 Open Grade 3B Pilon #



## In Conclusion:

I thoroughly enjoyed my time in Tygerberg Hospital. The department is very friendly and the Consultants / Registrars were all very keen to pass on their expertise. During this attachment I found that my trauma operating skills rapidly improved and my understanding of the principles of trauma surgery and specialist techniques employed also grew exponentially.