BOA Singhal Travelling Fellowship 2016 (Executive Summary 1000W)

I began my travelling Fellowship at the Rizzoli Orthopaedic Institute in Bologna, Italy. I was based within the Orthopaedic Oncology unit which is run by Professor D Donati. I was attached to both Professor Donati and Professor Manfrini.

Bologna is a beautiful historic city in North Eastern Italy. The Rizzoli Institute is a large academic teaching hospital specialising in Orthopaedic care first established in the 19th century on a the site of a Monastery. This certainly made an impression as I arrived to the hospital on my first day.

Although my Italian was very poor, all the surgeons in the department spoke perfect English and guided me though the hospital and cases.

Professor Donati's unit specialises bone and soft tissue sarcoma in adults in children and are a tertiary referral unit accepting cases from across Italy as well as from overseas. During my time in Italy one patient came from as far as Ukraine.

The Rizzoli Institute has an extensive bone bank. This was really phenomenal to see. This is particularly important for the Oncology unit as one of the preferred reconstruction techniques for long bone segmental excision is to use an allograft in Rizzoli. Cases are planned preoperatively so that size and shape matched allografts are made available for surgery.

Gaining further experience in allograft reconstruction was one of key techniques I wanted to gain further experience in by attending the Rizzoli Institute.

Operating days started at approximately 7am and finished at about 7pm. The Oncology unit had a full theatre operating Monday to Friday all day except on Tuesday.

Tuesdays involve a review of inpatient cases with the whole team, and a Professorial ward round. Followed by a multidisciplinary meeting, where all complex cases are discussed and management plans formed.

Theatres are very well staffed; each case had one Professor, one Consultant and two residents.

The case-mix was very diverse. The first list I saw started with a revision excision of an incompletely excised extra-articular sarcoma performed elsewhere. This was followed by a revision proximal femoral replacement. Next was the removal of a large (greater than 20cms) liposarcoma from a thigh, and an excision of a synovial sarcoma from the anterior tibia in a patient who had previous radiotherapy. At the end of the day a segmental resection of a low grade osteosarcoma and reconstruction with an intercalary allograft.

During my time at the Rizzoli I saw several intercalary allograft reconstructions. The bone bank did fantastic job of providing perfectly sized grafts for each case. The choice implant for fixation in all cases was a stainless steel blade plate. Professor Donati explained to me that they had previously used titanium plates but had plate failures and that they required the increased stiffness of the stainless steel plate of which they had not had any plate failures.

Another interesting case which I saw when was the case of a young main with a 16 cm midshaft femoral osteosarcoma. This gentleman required a combined case with the Plastics Microsurgery team. They are not based at the Rizzoli and therefore were visiting surgeons. The plan was for a wide resection of tumour with intercalary allograft reconstruction augmented by a free fibula graft.

One of the complications seen with intercalary allograft reconstructions is a late fracture risk. In this young active gentleman it was thought to augment the allograft with a free fibular autograft which improves the local vascularity of the allograft and reduces the late fracture risk.

One rare case that I was fortunate enough to see during my time at the Rizzoli was a paediatric tumour case. A 9 year old boy had an osteogenic osteosarcoma of the tibia. This required a 23 cm resection of tibia including the proximal tibial joint surface. A reconstruction was performed using a size and shape matching tibial allograft which was fixed with a blade plate as in the other allograft reconstructions. However on the proximal side of the tibia, the tibial component of a cruciate retaining type of knee replacement was cemented into the allograft. The collateral ligaments and patella tendon from the allograft we sutured to the resected ends of the patients and the soft tissue envelope was closed. This is known as an allograft prosthetic composite (APC).

The second part of my travelling fellowship was visiting the Leiden University Medical Centre (LUMC) in the Netherlands. Leiden is a beautiful old city in South Holland. The university dates back to 1575. I was met on my first day by the head of the Orthopaedic Department, Professor Rob Nelisson. Everyone was incredibly helpful and once again my lack of language skills was not a problem.

I was hosted by Prof M van der Sande who heads the Bone & Soft Tissue tumour service at the LUMC. LUMC is a very academic unit and there were several PhD students within the department who showed me some of the projects that they were working on.

The department at the LUMC has an interest in massive endoprosthetic reconstruction. From their unit they have designed the LUMiC prosthesis which is manufactured by implantcast. It is a partial pelvic replacement which can be used in pelvic reconstructions.

I was able to be involved in several massive endoprosthetic reconstruction ranging from those requiring LUMiC prostheses to proximal tibial replacements.

Another interesting case which I was involved in was the use of a intramedullary lengthening nail to perform distraction osteogenesis to correct a leg length deformity in a patient previously treated for a malignancy.

One thing that did stand out for me was that the theatre environment was fantastically disciplined with careful monitoring of traffic in an out of theatre during cases.

I am very grateful for this opportunity to visit these excellent centres. It allowed me to experience some unique techniques at high volume bone tumour units.