SCOT / Zimmer Travelling Fellowship Report

Ottawa Comprehensive Knee Fellowship 2023

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I first considered a fellowship in Canada after Alan Getgood provided a session in our regional teaching regarding his lead role in the STABILITY trial. This was a large RCT evaluating the use of a lateral extra-articular tenodesis (LET) to augment hamstring ACL reconstruction. The methodology was excellent and highlighted Canada as a pioneer for soft tissue knee surgery, the speciality I wanted to develop most. Another attraction to a Canadian fellowship was their publicly funded health service. As such they suffer similar financial constraints as the NHS and hence any procedures or pathways should be transferable to my working life back home. I chose the Comprehensive Knee Fellowship in Ottawa as it was approved by the Canadian Orthopaedic Association, had an excellent reputation and combined my main interests of soft tissue, arthroplasty and trauma of the knee.

The Ottawa Hospital General on my first day

The healthcare service in Canada is regulated differently in each providence. In Ottawa it is governed by the Ontario Health Insurance Plan (OHIP) with a budget per capita marginally less than NHS Scotland. All hospital appointments, operations, and medications are free. There are some exclusions however, such as physiotherapy, splints (including casts) and outpatient medications. Most patients have additional insurance to cover these, but not all. This means some patients cannot afford clinically indicated treatment, such as a ROM brace after surgery to the extensor mechanism, making some aspects of healthcare a challenge. Splints are easily available and even sold in the main shopping mall. This creates additional problems as some patients self-medicate

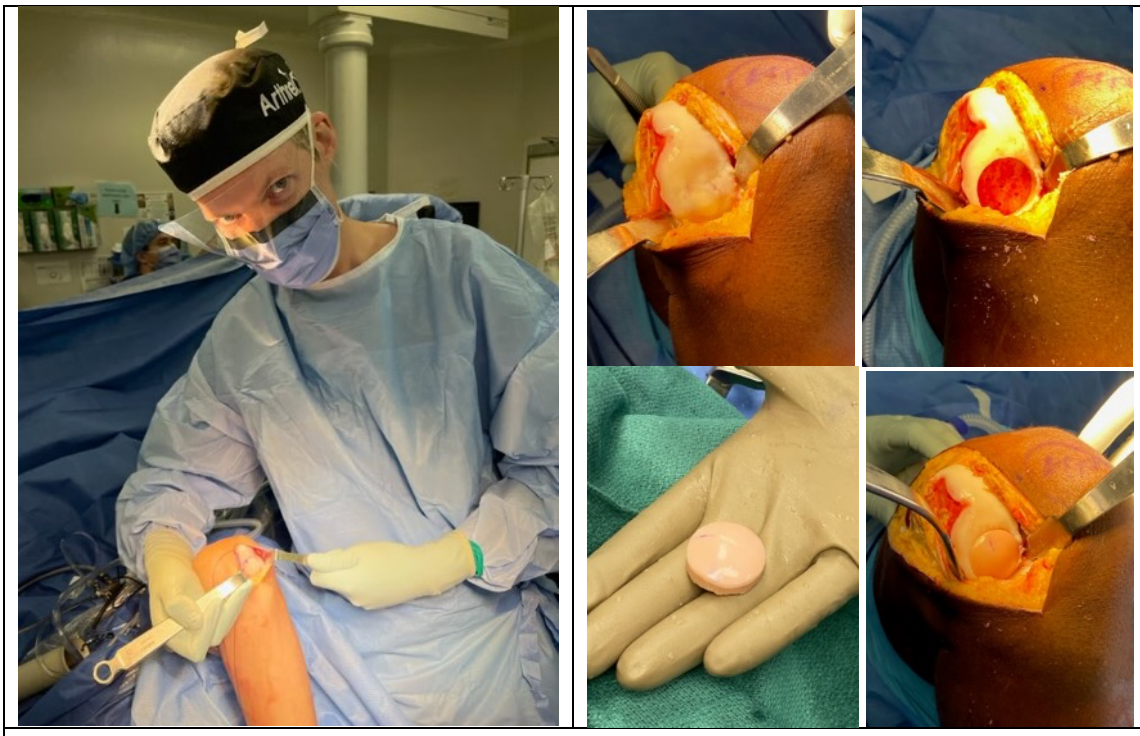
rather than seeking professional advice. This was most evident in a case where a patient had worn a patella stabilization brace for almost two years in an effort to avoid medical advice. They subsequently had remarkable wasting of vastus medialis and lateralis muscles making any long term solution a much greater challenge. Contrary to this there are some benefits as patients expect to pay a little towards their care, giving clinicians a little more freedom with their management plans. For example their standard knee surgery post operative care includes the use of a Game Ready ice and compression pump. Patients loved this and you could see in follow up who had paid for this and who had not. They appeared to have lower opiate use, less swelling, less bruising and a better range of movement in the early phase of recovery. However the machine is $500 to rent for 2 weeks, a cost I think I will have difficulty justifying in the NHS where I cannot ask my patients to arrange this privately.

The working day in Canada feels more pleasant. The main difference on a regular working day is most things are more efficient. An elective operating list runs from 07:30 – 15:30 yet achieves more operating time than our regular 08:00 – 17:00. Clinics never feel busy yet they are able to follow up post-operative patients regularly rather than patients being discharged to physio or nurse led follow up, allowing you to monitor your post-operative results. They have automatic typing for dictations so you can verify letters immediately, these are uploaded to a patient accessible platform so they can read your note, revisit your consultation and revise the management plan. MRI runs day and night, so patients get their scans within a few days (they don't mind a 1am appointment for this). Nevertheless their surgical waiting lists are still long, approximately 2-4 months for ACLs and 10-18 months for arthroplasty. However surgeons have a greater access to theatre time (2 or 3 lists per week) meaning you can expedite the care of your high priority patients.

Despite feeling more efficient, the service also feels more cost effective. Theatre teams are smaller, particularly nursing staff. There is one scrub nurse who covers every case that day, and two circulating staff (one of which is also cross covering anaesthetics). To compensate for this there are additional rotating staff who cover theatre between cases to clean and set up trays for the next case, hence turnover time is quicker and all staff are rested between cases rather than theatre delays for staff breaks. There is minimal single use equipment. I wasn't allowed a radiofrequency wand for my arthroscopic procedures (except on one occasion when it made a significant difference) or use of water pressurization for basic arthroscopy as the tubing costs $20 more than a gravity set up. They use standard plates for fracture fixation rather than anatomic locking plates which has become the norm in most centres back home. These operative costs are actually audited. As consultants bill each operation for their income it is easy to monitor use of single use devices. If your operative costs are significantly higher than your colleagues with a similar practice then you will be called up about it. I did not appreciate how unnecessarily expensive healthcare in the UK was until I worked in Canada.

Of course surgical experience was the main focus of my fellowship and we were fortunate enough to have multiple operating lists each week. I performed more ACL reconstructions in six months of fellowship than six years of registrar training (albeit my training was significantly hampered by the Covid pandemic). I am now comfortable harvesting hamstring, BTB and quads grafts and have rationale for when to utilize which, a big change from my experience in training which was very much hamstrings focussed. I performed osteochondral and meniscal allograft transplants, two excellent operations that are relatively uncommon in Scotland. I would be very keen to perform these locally, however funding and logistics may prove challenging. I performed a number of different osteotomies using techniques very different to those I had used before and I will definitely be implementing these on my return. We also performed a number of other soft tissue procedures including patellofemoral stabilization and meniscal repairs. I was surprised how infrequently extra-

articular stabilizations were performed in ACL surgery considering their rise in popularity in the UK subsequent to the STABILITY trial. The centre recruited a high number of patients for that study and was recruiting patients for STABILITY 2 during my time there, in fact I randomized and operated on a handful of cases for this trial which I enjoyed. It was useful to hear their interpretation of outcomes and indications for performing LET which differed from those back home.



Osteochondral allograft transplantation

Along with sports medicine I had exposure to arthroplasty including TKR, UKR and revisions. I already had good experience of these through training and their operative techniques were not too dissimilar to practices back home. The main contrast here was theatre efficiency where four or even five arthroplasties are performed over a shorter time than our conventional three joint list at home. This is largely due to shorter anaesthetic times, use of a block room, and quicker theatre turnover thanks to the cleaning crew. Patient selection was also different. We operated on younger patients, heavier patients, and patients with milder arthritis than what I had experienced in the UK. This early progression to primary arthroplasty resulted in a differing patient population for revision surgery. We performed a third time revision TKR on a man in his late 50's, a distal femur periprosthetic fracture fixation for an obese 49 year old patient, and a first time revision for a 42 year old patient with BMI 49.8 for anterior knee pain. All of which are likely have relatively poor outcomes. That being said the majority of young arthroplasty patients were happy with their results and maybe I am being a little too stringent back home.

In addition to elective work we also provided a general trauma on call and subspeciality knee trauma lists. Unfortunately these did not have as many high energy tibial plateau fractures as I had hoped, largely because there is a second hospital in the city which acts as the major trauma centre with the trauma fellows taking most of these cases. Nevertheless we had a few complex periarticular and periprosthetic fractures to keep us busy. The set up for general on call was very different to the UK and I definitely prefer the UK model for this. There were no trauma meetings and decision making was generally resident led. The majority of trauma operating was done out of hours, and fellows

were often left with a resident performing cases overnight. I do think this correlates to poorer outcomes and I am pleased this is something we have progressed from in the UK.

Outwith the hospital environment I had an excellent time. Ottawa is a beautiful city, the capital of Canada. Whilst the winter was a challenge (-30^{o}c and daily snowfalls up to 2 or 3 feet deep) the summer was stunning. One of my supervisors was a team doctor for the Ottawa Senators NHL ice hockey team so I was able to join him and attend a number of games. I attended AAOS in Las Vegas and two Arthrex lab sessions, one at the international headquarters in Florida and the second at the national base in Toronto where we also went to watch the Blue Jays baseball team. Attending conferences and courses in the United States gave insight into their working life and healthcare system, which was enlightening.

Visits to AAOS and Arthrex Headquarters.

Whilst consultants are generously paid in Canada, earning 3 – 5 times as much as their UK counterparts, fellows are not. This bursary resulted in a significant pay increase and allowed us to live in a nice two bedroom apartment which made our life looking after a new born baby much easier, I cannot thank you enough for this!

Overall the Comprehensive Knee Fellowship in Ottawa provided me with an excellent set of skills to help initiate my consultant practice in the UK. They take sport a lot more seriously in North America, and my clinics were often full with high level athletes over a large variety of sports. As such the exposure to sports injuries was excellent. I have not only learnt a number of surgical techniques, which I will build on through my career, but the experience of a different healthcare system will hopefully help me implement changes at a higher level.