

Elective Report

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Introduction:

For my medical elective, I decided to visit the Oral and Maxillofacial Surgery Department at Tsurumi University. My interest in oral and maxillofacial surgery (OMFS) predates medical school, however, as a first-degree medical student, my exposure to OMFS has been relatively limited, as it does not form a core part of the undergraduate medical curriculum. Although I have been fortunate to carry out a research project in mandibular anatomy during my intercalated degree, until this year my experience of the clinical aspect of OMFS had only been the occasional clinic or operation. Hence, for my elective I was determined to find an OMFS department to embed myself within, in order to gain an appreciation for what the day-to-day job entails. Additional to this, I wanted to find a department with an interest in research, so that I would be able to see first-hand some of the cutting-edge techniques I had heard discussed at conferences.

I chose Tsurumi University Dental Hospital for a number of reasons. Firstly, I had become aware of Professor Hamada's department after having read several of his publications in the British Journal of Oral and Maxillofacial Surgery, particularly those focusing on novel methods of assessing flap viability during mandibular reconstruction, and I was keen to see these novel methods first-hand. Secondly, having researched the department on their website, it was clear that they had patients with a wide variety of conditions, including facial deformity, oncology, trauma and infection. This was important, as it allowed me to see the breadth that OMFS had to offer as a specialty, and enabled me to begin thinking about which area may suit me best. Finally, I was particularly keen to visit Japan due to the beauty throughout the country, as well as the unique culture, and to observe how aspects of this culture permeates into the healthcare provision.

The University and Hospital:

The University is located in Tsurumi, a town located around 15 minutes by train from Yokohama and 40 minutes from Tokyo, the two largest cities in Japan. The University was founded by and is run by the Buddhist monks of the Soji-ji temple, located within the University campus. As a part of my elective, I was able to visit the Soji-ji temple and partake in Zazen meditation, an experience that all undergraduates of the University undertake. The University consists of three main schools: The School of Literature, The School of Education, and The School of Dental Medicine. The Dental School is the only one in Yokohama, and produces around 100 qualified dentists each year.

Tsurumi University Dental Hospital is a teaching hospital providing care for patients with a range of dental pathologies. Departments within the hospital included OMFS, oral medicine and stomatology, dental anaesthesiology, orthodontics, general dentistry, prosthodontics and preventative dentistry. Around 1,000 patients are seen daily in the hospital, with some patients travelling large distances for the expert advice. I was based in the OMFS department, and so although I spent some afternoons visiting the other departments, the bulk of my 7 weeks was with the oral and maxillofacial surgeons.

Every day within the OMFS department began with a team meeting at 08:40. The most senior member of the team that day would say a few words about the day ahead, before inviting a member of the team to give a short presentation on a topic of their choice. One of the dentists would often

translate this for me, with topics of the speech ranging from a love of darts, to travel plans, to special recipes. This approach to a team meeting was alien to me, particularly ahead of a busy day, however it allowed members of the team to get to know each other and provided a source for further discussion, helping to strengthen the bonds within the team. Following the team meeting, on Monday, Tuesday and Thursday a general outpatient clinic would take place, running from 9:00-12:30, and then from 13:30-16:30. At 16:30, the oral and maxillofacial surgeons would convene to discuss all the new patients seen that day, and to discuss any questions they may have regarding management plans. On Wednesday and Friday, two full lists would run in the two operating theatres in the hospital. Following the completion of theatre on the Wednesday, there would be an MDT between the oral and maxillofacial surgeons, the oral medics and the anaesthetists, in order to discuss the patients scheduled for surgery in the next month. Additionally, dispersed throughout the week were minor operations, and appointments for the inpatients on the ward.

The OMFS team was made up Professor Hamada, Associate Professor Kawaguchi, Assistant Professors, Clinical Assistants and Graduate Students. The oral medicine team also worked in the same clinic, as did the dental hygienists, who often assisted the surgeons. Anaesthetists worked in theatre and in minor operations, whereas nurses worked in theatre and on the ward.

The Clinical Experience:

During my time at Tsurumi University, I was able to see around 275 patients; 40 in the operating theatre, 10 in minor operations and the remainder in the outpatient clinic or on the ward. I was able to see a great range of conditions and operations. This included common procedures such as teeth extractions, excisional biopsies and surgical management of odontogenic cysts, and common conditions such as temporomandibular joint disorder. Being able to see these cases in high volumes allowed me to gain an understanding of the various surgical approaches to each of these problems and how to select the most appropriate method, as well as the key stages during each procedure and the instruments required. Additionally, as Professor Hamada is a specialist TMJ surgeon, I gained a great deal of experience in the conservative, medical and surgical management of TMJ disorder. Other procedures I was able to see included surgical excision of an osteoma, excision of gingival and tongue squamous cell carcinomas, maxillary sinus floor elevation, excision of a pleomorphic adenoma of the parotid and open reduction internal fixation of a mandibular body fracture, to select a few. As well as these common procedures, I was able to see more complex and challenging patients. This included cases such as two-jaw surgery with a rotational element, requiring extensive pre-operative planning via lateral cephalograms, paper surgery and model surgery, a case of recurrent ameloblastoma requiring 12 hours in theatre, and the use of bilateral coronoidectomy in managing refractory trismus.

An unanticipated benefit of my time at Tsurumi University was that the oral medicine and OMFS teams shared a clinic space. This meant that I was able to see oral medicine conditions such as lichen planus, leukoplakia and infections such as herpes simplex, conditions which I have had less exposure to in the UK.

Being at Tsurumi University also enabled me to see several unique conditions and procedures, which I would not have been exposed to in the UK. An example of such a condition is masticatory muscle tendon-aponeurosis hyperplasia (MMTAH), a condition which limits opening of the mouth and is often incorrectly diagnosed as TMJ disorder. First described in Japan, it is a condition that appears to disproportionately affect Japanese people, however it has recently been described in European populations. As it was traditionally considered as being a condition exclusive to the Japanese population, practitioners outside of Japan are often unaware of it, and hence may miss the

diagnosis, preventing optimal treatment. Hence, having seen this condition and having an awareness of it may aid me in future clinical practice.

The most interesting part of my placement was learning about the novel approach to mandibular reconstruction at Tsurumi University. From my prior experiences of OMFS I was aware of the use of fibula microvascular grafts to reconstruct resected mandibles. However, research at Tsurumi University focused around reconstructions using a custom-made titanium mesh tray, filled with particulate cancellous bone and marrow (PCBM) harvested from the patient's tibia or ilia. A key issue with fibula flap reconstructions of the mandible is the difficulty establishing the contour of the mandible, from the multiple sections of resected fibula. Through the use of CAD/CAM software to manipulate the titanium mesh tray to fit the original configuration of the patient's mandible, and the use of the PCBM to fill this tray, the bony reconstruction is more anatomically acceptable, with a preserved intermaxillary relationship, making the later stages of dental reconstruction easier. Having the opportunity to spend time in the laboratory, where the titanium mesh trays are fabricated and the 3D models printed, allowed me to gain an appreciation for the importance of attention to detail while producing a prosthesis for the patient, in order to optimise the cosmetic and functional outcome. Additionally, I was able to learn about the techniques used where the configuration of the hemimandible has been severely distorted by a tumour, such as the 'mirror image' technique, using the healthy side to model the configuration of the reconstruction. Seeing patients with PCBM reconstructions was also useful, with a range of problems such as infections of the mesh tray, fracture of the mesh tray and partial absorption of the mesh tray presenting to the clinic. I was also able to look at the data for these patients, and compare the rate of complications, and the patient satisfaction rates to that of the other methods of reconstruction.



Myself with members of the oral and maxillofacial surgery, and oral medicine team

Comparison To The UK:

The most striking difference between Tsurumi University and the UK OMFS Departments where I have been based, was the 'open-plan' nature of the clinic. The clinic consisted of a large room with approximately 30 dental chairs, with a reception at the front, and a table adjacent to this with all the surgical tools required. The surgeons would often bring a patient in, check their details, and if an

extraction was required, they would collate the equipment required, give the local anaesthetic and then see another patient whilst waiting for the anaesthetic to act. The open-plan clinic made this straightforward and allowed the clinic to run efficiently. It was also common for senior surgeons to call over juniors and students to see patients with interesting intraoral pathologies.

Additional differences at Tsurumi University included the limited space in operating theatres, with only 2 theatres available, both without a separate anaesthetic room. Hence, this often slowed down the list, as patients required intubation and extubation on the surgical table. Furthermore, post-surgical management differed, with two-jaw surgery patients requiring up to 2 weeks inpatient stay following surgery due to the use of intermaxillary fixation.

In Japan, OMFS is a dental specialty, with the dental surgeons undertaking a 6 year undergraduate dental degree, followed by 1 year as a trainee dentist, and a doctoral programme in OMFS of at least 4 years. Several of the surgeons in Japan commented on the training pathway in the UK; expressing concern at the length, however appreciating the benefit of the additional medical training, especially when managing complex patients. Interestingly, the dental course in Japan is 1 year longer than the standard dental course in the UK, with patients only being seen in the final 2 years. Those I spoke to suggested that this allowed them to learn about general medical conditions as well as dental, as the aging population in Japan means that dentists must be comfortable managing those with multiple co-morbidities. The scope for specialising following a dental degree also differs in Japan, with pathways such as anaesthesia training available after completing a dental degree.

Organising The Elective:

My elective was made very easy to organise due to the hard work of Professor Nagasaka, who is in charge of international exchanges. I found his email on the Tsurumi University website, and he replied promptly. After sending a letter of recommendation from the Dean of my university, and discussing the dates of my elective, Professor Nagasaka was able to confirm the visit with the OMFS department and the president of the university.

On arrival in Tsurumi, Professor Nagasaka was able to pick me up from the train station, and take me to the university guest house, where he had arranged for me to stay for the duration of my elective. The accommodation was a very clean and spacious studio apartment, including a kitchen and bathroom. I was able to meet the president of the university, who presented me with a gift (see photo). Throughout the elective members of the OMFS team, as well as students of Tsurumi University were incredibly welcoming, and I was able to share dinner with them on many occasions and learn about their experiences. I was also asked to give a presentation about my experience of studying at Cambridge University, which was followed by a welcome party at a local *ekonomiyaki* restaurant.



Professor Nagasaka (left), myself (centre), President Oyama (right)

The Country:

Japan is an incredibly unique and beautiful country, with almost countless places to visit. The team were very keen to recommend must-see areas, and so I spent every weekend travelling, allowing me to gain an appreciation for the Japanese culture. Highlights included: seeing the deer roam free in Nara, climbing to the top of Mt Fuji for sunrise, witnessing the annual Pokémon festival in

Yokohama, watching the Yomiuri Giants win in the Tokyo Dome and seeing the magnificent Shinto shrines in Kyoto and Kamakura, to name a few.



A glimpse of sunrise from Mt. Fuji



Todaiji Temple, Nara



Kinkakuji Golden Pavilion, Kyoto



Sunny day in Atami

Summary:

I had a brilliant experience at Tsurumi University, which met and greatly exceeded any expectations I had prior to arriving. I was able to see a large variety and volume of conditions and surgeries, which I otherwise would not have been able to see until much later in my training, if at all. I have been able to learn a great deal about OMFS, and supplement this clinical experience with reading around the conditions, allowing me to accrue knowledge and experience which I hope will be vital during my career.

Acknowledgements:

I would like to thank the OMFS team at Tsurumi University for welcoming me into the team, taking the time to teach me, primarily about OMFS but also about Japanese culture. The hospitality I experienced was unparalleled, and I am extremely grateful for the friends I have made and the experiences I was able to share.

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