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Report: SBNS-funded Clinical Attachment in Neurosurgery

From May 27th to June 13th, I had the pleasure of shadowing various neurosurgeons at St. George's Hospital, a busy trauma centre in South-central London. I organized the visit with the help of two kind surgical trainees—Mr. Visagan Ravindran and Ms. Teresa Scott—who I met at the NANSIG conference in February 2023.

Though officially attached to the team of Consultant Neurosurgeon Mr. Simon Stapleton during my elective, I was given the freedom to shadow various other consultants and NCHDs based on who was working, and what cases I wanted to see. I appreciated this independence, and feel it allowed me to maximize the educational value of my attachment. I spent most of my time in the neurosurgical department, but briefly saw the A&E and interventional neuroradiology (stroke) services in action as well – in all, the experience exposed me to many facets of neurosurgical practice within the framework of the NHS. I saw many things that were completely new to me, in addition to various pathologies and procedures I had encountered during prior clinical attachments in Ireland. This allowed me to see familiar situations approached with treatment methods or care philosophies different to what I knew and took for granted.

Structure:

Each day began with a morning teaching session, which are a brilliant opportunity for both students and surgical trainees. The sessions followed a consistent format, with trainees presenting recent or upcoming patient cases—discussing symptoms, investigation findings, and outcomes—upon which, senior staff would offer feedback, constructive criticism, and advice regarding the nuances of diagnosis and patient management. One or more consultant surgeons would then provide teaching based on topics highlighted over the course of the case discussion, which I found invaluable in helping to build my clinical understanding. There was even an impromptu visit by the legendary neurosurgeon Mr. Henry Marsh, who delivered a thorough lecture on the mechanics of punctuality.

The rest of the day generally included a mixture of theatre lists, inpatient ward rounds, and outpatient clinics. The schedule was demanding, especially on days with multiple long surgeries, and highlighted the stamina and focus required of neurosurgical staff. I challenged myself to stay for as many full-length procedures as possible, so that I could better understand the lifestyle associated with a career in neurosurgery. Speaking honestly, I struggled to adapt at first: for instance, breaks were few and far between, and I soon realized I would have to be strategic in terms of the timing and nutritional content of my meals so that I could maintain consistent levels of energy throughout the day.

Involvement:

My clinical involvement was mostly observational. I attended at least 16 surgical procedures, of varying duration, scrubbing in whenever possible. However, the elective terms restricted direct patient contact, preventing me from assisting directly with procedures or conducting physical examinations. I tried to make the most of my time by taking neurological histories and presenting them to both junior and senior trainees for feedback. I attended outpatient clinics with Mr. Ravindran as well, and accompanied doctors of varying seniority during their daily tasks to get a feel for the differing duties and levels of responsibility among neurosurgical team members. In terms of surgical involvement, my role remained largely observational, however I was able to assist in minor capacities with several procedures, including burr-hole craniotomy for evacuation of a chronic subdural hematoma, trepanation and intracranial pressure monitor insertion for a gentleman with idiopathic normal pressure hydrocephalus, emergency multilevel decompressive laminectomy for an elderly patient with cervical myelopathy secondary to epidural haemorrhage, and ventriculoperitoneal shunt replacement for a young man with Dandy-Walker syndrome.

I encountered several complex cases and procedures that were particularly interesting, including the painstaking removal of an ependymoma located in the central canal of a patient's cervical spinal cord, and the endoscopic resection of a bizarre semi-cartilaginous tumour located in the pineal gland of a young man which was thought to be a teratoma. These intricate procedures highlighted equally the level of precision required in neurosurgery, and the exceptional skill of the surgeons. Seeing their careful and controlled operative technique inspired me to start working on improving my fine motor control through various means, such as learning to write with my left hand, creating very finely detailed art (using a cheap pair of loupes I bought online), and regular practice tying surgical knots with the smallest gauge of suture I can find. Many of the surgeons were happy to provide practical advice on simulating tissues for suturing practice. While these activities are challenging, they serve the dual purpose of improving my fine dexterity and providing me with creative outlets that help relieve the stress of medical school.

Insights:

In all, my experience at St. George's elective gave me ample opportunity to learn about common neurosurgical pathologies, identify relevant findings on imaging, clinical examination, or laboratory investigations, and see various treatments and management strategies in action. The friendly and teaching-oriented attitudes I encountered among the surgeons and theatre staff facilitated substantial learning, both in terms of clinical knowledge and career advice. My interactions with patients pre- and post-op were emotionally impactful and helped me to appreciate the profound impact of neurosurgical pathologies, as well as their treatments, on the lives of patients and their families.

Comparing the NHS with the Irish healthcare system provided me with valuable insight into the operational differences between the two systems, and the way in which medical practice is influenced by cultural nuances, in addition to broader social values. I had many conversations with staff about working conditions, which highlighted positive aspects of the NHS in addition to the areas that need improvement.

I gained exposure to some of the many advanced technologies used to aid or augment the effectiveness of neurosurgical treatment, such as neuronavigation guidance systems, operating microscopes, 5-ALA fluoroscopy, endoscopic instruments, intraoperative ultrasound, and assistive robotics. Seeing how regularly these technologies were applied by the surgeons at St. George's, which is subject to the pragmatic nature (and financial constraints) of the NHS system, gave me the chance to gauge the clinical value of these technologies outside of the biased context in which I have previously encountered them—ie., at conferences or demonstrations organized by manufacturers.

Throughout the elective, I was impressed by the stamina and focus of the neurosurgical teams, who maintained concentration while standing for hours without breaks. Adapting to this demanding environment, though challenging, helped emphasize the importance of being organized and efficient in my daily activities while working in such a demanding profession, which will no doubt help me adapt to the stresses of working as a junior doctor.

I also received lots of useful advice from surgeons regarding the structure of surgical training in the UK, common pitfalls to avoid, and strategies to excel in such a competitive field. These insights, along with personal advice about life in general, were invaluable at this stage in my career. As one surgeon said, "if anything else interests you—anything at all—do that instead."

In conclusion, this elective did not deter my interest in neurosurgery—rather, it cemented my commitment to pursue it as a future career. Though it made me more aware of the demanding and time-consuming nature of their work, my time spent with the neurosurgical staff at St. George's hospital was a great experience which only served to solidify my fascination with this field.

Acknowledgements:

I would like to offer a warm thank you to everyone I encountered during my visit to the neurosurgical department at St. George's Hospital.

"Bye corona(l)"

Original painting representing the view of a recently-extubated patient immediately after leaving the neurosurgical theatre at St. George's. This sunset took place on June 6th, 2024, following an 8-hour long operation involving excision of a large left-sided parafalcine meningioma.

Oil on canvas + post-varnish tie-dye
10cm x 10cm