Anaesthetics at the Amrita Institute of Medical Sciences in Kerala, India: a research elective

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I spent my medical elective at the Amrita Institute of Medical Sciences (AIMS), Kerala, India. AIMS was founded by Sri Mata Amritananadamayi Devi (known as Amma), an Indian guru with a worldwide following. She envisioned a hospital where high quality healthcare was not reserved for the wealthiest of society. In 1998 AIMS was a 115 bed specialist hospital but has since grown to a 1450 bed super-specialty tertiary referral and teaching hospital spread over 125 acres of land (Amrita Hospitals 2018). At AIMS a third of all medical treatment provided is free, a third is subsidised and a third is provided at a standard cost. As I am interested in pursuing a career in anaesthetics or intensive care medicine, I was keen to focus my elective in these areas. Given the 210 intensive care beds and 25 operating theatres AIMS provided a suitable hospital in which to pursue my aims and objectives. Furthermore, the hospital is well equipped with modern technology and I hoped that the skills and knowledge gained in Kerala would be transferable to my future training in the UK.

My time in Kerala was split between an anaesthetics attachment and conducting a re-audit of the management of sepsis at AIMS according to the surviving sepsis campaign guidelines. These different experiences provided varied opportunities for learning and required working in many hospital departments which allowed me to gain an understanding of the patient population and the provision of healthcare in Kerala.

Anaesthetics attachment:

Time spent in the operating theatres provided many learning opportunities. Anaesthetists and surgeons were happy to teach and involved me in the clinical aspect of their work where possible. I was able to improve my clinical skills, including airway management under close supervision, and deepen my knowledge of anaesthesia and its pharmacology. There were very few differences with regards to the anaesthetic process and the pharmaceutical agents used when compared to the UK but I did notice a number of differences with the day-to-day job of being an anaesthetist. I had not been prepared for the variety of operations in a single theatre list: a paediatric bone marrow biopsy, a nephrectomy and kidney transplant to a tracheostomy. In contrast to in the UK where a theatre list tends to focus on a single specialty, in Kerala the anaesthetist is required to adapt their skills on a case by case basis. Additionally, in contrast to the UK, cases are rarely cancelled, even when theatre lists overrun. The anaesthetist and theatre staff were expected to stay at work until the theatre list was finished and often ended up working into the evening. Another major difference I noted was the lack of induction rooms. The induction of anaesthesia took place within the operating theatre. I imagine that this not only has an impact on the patient; operating theatres can appear intimidating,

further adding to the anxiety of surgery, but also on the anaesthetist. The operating theatre is a busy environment, particularly when being prepped for surgery. I thought that this may pose a challenge to the anaesthetist particularly at times where increased concentration is required, for example during intubation.

At AIMS the theatres were modern and equipped with the latest technology, including the Da Vinci Robotic Surgical System, and complex surgical procedures such as organ transplants were commonplace. I had the opportunity to observe procedures that I would not ordinarily meet as a medical student in the UK; a paired liver transplant from mother to son and a paired kidney transplant from wife to husband for example. It was interesting to learn about the different anaesthetic considerations and post-operative intensive care, particularly with the liver transplant. I also observed a nephrectomy of a very large polycystic kidney (Figure 1). This was a fascinating procedure to observe and I realised that I was encountering clinical presentations in Kerala that were far more advanced than I would see in the UK.

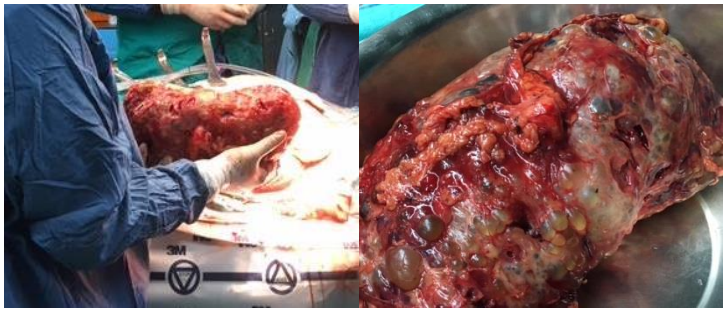

Figure 1. A surgeon holding a polycystic kidney (left); the polycystic kidney (right) [photos taken with permission].

The clinical audit:

I have enjoyed research since before starting medical school. Despite being involved in a number of research projects, I have never had the opportunity to conduct research overseas. The incidence and 28-day mortality statistics of severe sepsis in India is significantly higher than that in the UK and research suggests that compliance with severe sepsis management bundles is poor, particularly in intensive care units (ITU) (Divatia 2012). I hoped that the impact of this audit would be two-fold. It would allow me to develop my knowledge surrounding sepsis and provide invaluable practical experience of conducting an audit. I hoped that the audit would also provide useful performance-related data to the clinical staff at AIMS.

Data was collected over a three week period. Collecting data in itself was a hugely educational experience. Patients were recruited from the emergency room. Here I gained an insight into common presenting emergency complaints in Kerala. Diarrhoea and vomiting, confusion, falls and road traffic accidents were amongst the most common. I was surprised that the presenting complaints appeared similar to those seen A and E in the UK. Participants were then followed to the

wards or to the ITU. Here I was able to appreciate the patient journey through the hospital and was able to experience the different standards of patient wards at AIMS. Collecting data in Kerala also allowed me to appreciate the standardised note taking and electronic records that we use in the NHS. Although patient histories and observations were recorded, there appeared to be limited standardisation which made data collection difficult at times. The audit demonstrated that compliance to 3 hour sepsis management bundles had improved since the initial audit in 2016 but there was still work to be done. The results of the audit were presented to senior clinicians and clinical pharmacists at AIMS.

Whilst spending time on the wards, I was also able to appreciate the differences between AIMS and hospitals in the UK. One of my initial observations was how common hepatic encephalopathy was. I asked the doctors about this and they explained that Kerala is, for the most part, a dry state and alcohol is often brewed and acquired illegally. Adults as young as 26 years old commonly presented with decompensated liver disease as a result of alcohol abuse. As in the UK, respiratory infections were common but the causative organisms in Kerala were very different. I noticed that antibiotics were given out much more readily in Kerala. They can even be bought over-the-counter at a pharmacy without any need for a prescription. I also encountered diseases that I would never, or rarely, encounter in the UK, Potts disease for example. It reminded me, that by choosing to complete my elective in Kerala, I was broadening my horizons with regards to disease presentations and clinical medicine. I am extremely fortunate to have had this experience.

There were also obvious differences in the healthcare system when compared to the NHS. Care and hospital accommodation varied dramatically depending on the funding status of the patient. The cheapest beds were found on the general medical wards. These were 70 bed wards with no curtains or privacy for examining patients or for personal care. The patients brought a ‘bystander’ into hospital with them. The bystander was usually a close relative. They would attend to all toileting, washing and feeding duties for the patient. The nurses did not appear to be involved in personal care. This is compared to the most expensive wards which contained all private en-suite rooms, air conditioning and a much higher staff to patient ratio.

Although for some patients care was provided free of charge or subsidised, this had to go through a rigorous verification process including document checks and visits to the patients home from designated hospital personnel. It is for this reason that elective operations are most likely to be subsidised by AIMS. Patients had to pay for investigations or medications before they were given and as a result, the prognosis of the patient relied heavily on the financial status of their family. At

times, this was challenging to observe. I met a patient with neutropenic sepsis, from my experience in Kerala this was a common presentation for chemotherapy patients. This patient was receiving granulocyte-colony stimulating factor (G-CSF), a very expensive therapy that would not be widely available at some of the smaller institutions in the area. In the UK, this patient would be, without question, in a side room. At AIMS, this patient was in a 70 bed male ward with a face mask for protection surrounded by patients being treated for sepsis and tuberculosis. Here the financial dilemma had been whether to pay for the G-CSF for the patient or to move the patient to a far more expensive side room or a private ward for the duration of the treatment. Difficult decisions such as this must be made on a daily basis for families who do not have the luxury of a national health service.

My elective at AIMS was unforgettable. Not only did I have the opportunity to visit a wonderful and beautiful region of India but I was able to experience the application of medicine in an unfamiliar culture and healthcare system. I was exposed to disease presentations and surgical procedures that I would rarely have the opportunity to observe in the UK, developed my knowledge of anaesthesia and conducted an audit that will form the basis of a poster presentation in the UK.

Figure 2. A large statue of Maharishi Sushruta considered the founder of surgery just outside the hospital main entrance.

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