From Stent to Xray – An analysis of Interventional Nephrology in the USA

Healthcare in the UK

July 5th 1948 marks the birth of the NHS. Widely recognised as one of the best healthcare systems in the world its aims were clear from the beginning; free healthcare for all. The financial indications for running this ambitious scheme were funded entirely from the taxation of the Great British population. Media influences are rife of both the negative and positive aspects of this type of healthcare, however the crux of the issue is that healthcare is free, in comparison to our other western counterparts.

Healthcare in the USA

Often described as the leading healthcare system in the world, the American healthcare system is a predominantly private insurance run programme. Most non-elderly employees obtain private sponsored healthcare insurance from their employer, the rest either obtain independent non-group private insurance or remain uninsured. There is also a co-existing public system which only serves about 15% of American Citizens with a large 18% remaining uninsured, and essentially without access to adequate healthcare. The public system is an amalgamation of smaller programmes aimed at different population groups. There is a programme titled 'Medicare' which targets the elderly population of 65 and over which is paid for by the government, however this in itself is still limited and not entirely public. 'Medicaid' is a programme which essentially aims to aid low income and disabled families. The limits and eligibility levels are determined by a number of factors. The criterion for eligibility of 'Medicaid' also varies from state to state. The funding from this scheme is through taxation whereby the federal government match the funding through state taxation. Spending time in the USA I began to realise quickly how complicated this healthcare system was and I was surprised at the numbers of American citizens who didn't have access to basic healthcare.

An introduction to Interventional Radiology

Having spent some time in Interventional Radiology (IR) in my fourth year of medical school I found my self drawn to the complexities of combining theoretical knowledge and manual dexterity of conducting procedures. Having an interest in renal and vascular medicine, I was subjected to a few interesting cases but unfortunately did not have the time to spend a few weeks discovering the breadth and depth of what IR and renal medicine had to offer. I had seen a few cases but had not had the opportunity to have a hands on role.

Interventional Nephrology as a separate entity

Through researching the NICE guidelines on Interventional Nephrology (IN) and the British Society of Interventional Radiology patient information section, I found that there was a large area of Interventional oncological procedures that I wanted to investigate and learn more about. Being a self-confessed physics enthusiast I found myself wondering what the role of radiofrequency ablation, cryoablation and microwave ablation had in the management of cancer. And who the ideal patient would be?

UCLA Ronald Reagan Medical Center, Los Angeles

I was fortunate enough to have my elective application accepted by the University of California Los Angeles (UCLA) to work in the main flagship hospital for the university – The Ronald Reagan hospital. The Ronald Reagan Medical Center is a 520 bed hospital in Los Angeles, California. The IR department see on average around 140 patients a week with the most common problems/diseases being peripheral vascular disease, biliary interventions,

dialysis access management, inferior vena cava filters, vascular access, tumour embolisation, transjugular intrahepatic portosystemic shunts and vascular malformations. Procedures usually started at 8am with two or three days a week having a 7am start due to morning lectures. These didactic sessions included formal teaching from senior consultants and case based discussions of interesting cases by fellows. This aided my learning of the basics of IR as I could relate why procedures were being done, could talk through difficult cases and understand complex anatomy. It wasn't till my IR placement here that I was told around 50% of patients don't have textbook vascular anatomy! My typical day would consist of scrubbing into and assisting in cases all day, and where I wanted to, I could also attend clinic. I was taught the basics of vascular access using the Seldinger technique. I eventually began to understand the world of IR and could differentiate a Coombs from a Bentson wire. Being under the guidance of inspiring consultants who had an incredibly enthusiastic approach to teaching, really transformed my elective into more than I could have hoped.

I was unaware as to how this placement would truly influence my medical choices. My first day I was able to scrub into a case and assist in placing a tunnelled dialysis catheter into a young six year old boy who had autosomal recessive polycystic kidney disease (ARPCKD). Knowing how rare this condition was, I valued and appreciated the opportunity to learn more about this condition from the patient and families point of view. Fistulograms to me were an interesting phenomenon of which I only fully began to appreciate their complexity on observing and scrubbing into many cases. Oncology through the eyes of an interventionalist to me, was eye opening. Through the advances of modern technology and the application of physics principles one could target and pinpoint with CT accuracy the size of the ablation zone all whilst having a casual chat with the patient about how their day was going. This to me was the future of modern medicine and surgery. Having the opportunity to have a hands on role in patient care and being able to undertake procedures under the guidance of my seniors was an extremely valuable experience.

My elective was the perfect eclectic mix of biomedical engineering and interventional medicine, with a truly holistic approach to management. I believe I am extremely fortunate to have been able to spend time at such a fantastic institution. I have learnt a great deal about being an interventionalist and hope to become one, one day in the not-so-distant future. Thank you to the Renal Association for all the help and support provided during my elective. I am extremely grateful.

Wajiha Arshad

wxa733@bham.ac.uk