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Elective report

In this report I would like to discuss the objectives I set out to learn more about before I came to Israel: Furthering my own knowledge of radiology, seeing the relation of radiology to disease and ethnicity, as well as the pattern of healthcare provision

During my stay I was able to see many sub-specialties. The week I spent looking at imaging from the body was comparable to when I had to interpret images in the UK. IT revolved mostly around finding fluid and masses in areas where they should not be. While sitting in with the radiologists I was more able to assess the subtleties of grey-scale changes which can signify pathology. Depending on the Hounsfield unit value of a certain area, in combination of the clinical picture, a diagnosis can be surmised. In a patient with a raised temperature and cough, an increased density in the lungs may signify consolidation. The plethora of conditions ranged from consolidations of pneumonia, pleural effusions, malignancies and others in the chest alone. I learned of different drains and their locations, and their importance in management of disease. Paediatric imaging was very different and interesting. During my medical school time I was not able to see many paediatric images, which made it difficult for me to distinguish between pathology and what is normal for a child of a certain age group. In paediatric imaging I got to see a variety of fractures concerning the epiphyseal growth plate. I was able to see a variety of congenital malformations that were quite interesting. Some of them nicely showed changes that occur in embryology, and when certain processes of embryology fail to properly, specifically the aortic arches and their obliteration and migration. In one patient the subclavian arteries failed to migrate proximally, and were the last branches of the aorta; as well as a branch of the aorta supplying one of the lungs. In another patient with truncus arteriosus it was interesting how imaging was able to show the dilated aorta, and allowed the team to plan long-term care for the patients. For that patient there was no immediate way to support the aorta long-term, a period of growth before a permanent solution could be found was chosen at that moment. I observed as ultrasounds were performed on children and neonates, helping me develop my ability to identify what is shown on the ultrasound screen.

In neuroradiology I was able to view a lot of CTs of skulls after trauma and other conditions. Especially elderly are quite susceptible to injury after a fall, even without immediately apparent symptoms. Most of the patients had no underlying condition and the scan was merely a precaution. In a select minority though, a subdural haemorrhage could be seen. I also got to see a subarachnoid haemorrhage in another of the patients. The trauma CTs were quite interesting, with the coup contrecoup injury pattern. Especially important in this area of radiology are the different "windows". The eye is only able to see a certain amount of shades of grey. In an image displaying the entire range of -1000 to + 1000 Hounsfield units, the eye is not able to distinguish normal from abnormal areas as the differences are too subtle. By switching to the bone window, density changes in bone become much more apparent, but with the cost of not being able to identify any soft tissue. Changing it to brain window permits the radiographer to see if there is any asymmetry or swelling, but makes it nearly impossible to see small fractures in the bone. Switching back and forth between

windows and adjusting the range of HU visible on the screen at one time allows for screening of many conditions afflicting the head which would be difficult with a plain x-ray. Cancer patients also frequently needed CT scans to check for any signs of metastasis, which were picked up, but needed further confirmation.

In interventional radiology I was able to witness more practical procedures. Interventions were done quickly and precisely. Radiology was the keystone of this, allowing for direct and instant visualization of where the needle is at that exact time. When there is stenosis in the vessels, contrast can nicely show where the narrowest areas can be found. With a balloon and stent these areas can be permanently dilated, and their new diameters visualized. I was also able to observe nephrostomies being performed. These were commonly in patients who had some form of malignancy. The doctors performed routine replacement these nephrostomies every 3 months as they tended to become obstructed after this period of time. The greater the degree of hydronephrosis, the easier it was to initially insert them. After the initial insertion, replacements were comparatively easy to perform.

The Israeli medical system differs from the UK system. In the UK there is no need for insurance, as medical care is funded through general taxation. In Israel all citizens are required to join one of the insurances to have basic coverage, and are free to add extra insurance on top of that, which 80% of the population purchased. Israel enjoys a life expectancy exceeding that of the UK. Their number of hospital beds is lower, their occupancy rates higher, which leads to an extremely high occupancy rate and bed shortage in the hospitals at times. Apart from having to deal with health concerns of their own population, people from the West Bank and Gaza receive treatment in Israeli hospitals as well. Personally I saw that many doctors did private work in addition to their main body of work. Due to the requirement of joining the military for 2-3 years graduating doctors are older than their UK peers.

In summary I enjoyed my experience of visiting Israel and was able to learn a significant amount. There was a bit of a language barrier in meetings and reports, but luckily most people working in the radiology department have a very good grasp of English and were very willing to teach.