NEUROLOGY

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St. Bart's and the London Medical School

Elective Report 2013: Columbia Medical School

Barts and The London
School of Medicine and Dentistry

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Specialty: Neurology

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Elicit a pertinent history and conduct full neurological examination.

This objective was achieved with relative ease due to the role I was assigned within the neurology consult team. I was given the responsibility to see new consults independently and carried out full detailed histories and neurological examinations. I was also given the responsibility for writing up the history in the patient charts (notes) together with the lab and imaging findings and asked to generate working differential diagnoses which the patient could be further investigated for. Additionally, I was responsible for presenting my findings in a concise and structured fashion, to the Attending, prior to reviewing the patient on rounds and was assessed on the level of detail that I gave and if all the pertinent features were covered. I found the feedback I received from the Attending very useful as it allowed me to gain an understanding not only of what questions to ask but also why they were important to patient diagnosis and management. The feedback I received on my clinical examinations was excellent as I was taught to add extra components to the exam with the exact reasons for why they were useful and what they demonstrated. These components include the test for "fixed arm roll" and finger tap, which test for subtle more muscle weakness. I also learnt to perform the supra-patellar reflex and Pectoralis reflex, which are important indicators of hyper-reflexia. I feel these have helped me significantly in formulating diagnoses and identifying pathological signs.

Demonstrate familiarity with the indications for performance of standard neurological tests including radiological studies, lumbar puncture, EEG and EMG. The student should demonstrate an understanding of the basic principles of interpretation of these tests.

Further to the history taking and examinations, I was also asked how I would further investigate the patient to provide evidence for or confirm my diagnosis. This often included the use of further neurological tests. I have learnt that the need for radiological studies varies greatly depending on the precision of the history obtained from the patient. For example a patient presenting with sudden onset of weakness or dizziness would be sent for a CT (w/o contrast to investigate for a stroke) whilst the same symptoms over a longer period (i.e. a month) would require an MRI to get a more detailed image as an acute stroke would be less likely. Additionally, whether or not to perform an MRI with contrast may depend on a reasonable

suspicion of there being a mass present within the brain or spinal cord, suspicion of which is derived from a thorough neurological examination to find even the most subtle focal neurological deficits. The basic principles of interpretation are that of looking for any obvious abnormalities (mass/lesion/signs of raised ICP) and atrophy, whilst also looking for any significant asymmetry between the two brain hemispheres and correlating these to clinical findings.

With regard to lumbar punctures I have further learnt that they should be performed early is if a CNS infection is suspected and preferably performed before administering antibiotics. An important indication for a lumber puncture, in a patient I was involved with, was acute confusion, weakness and high fever (101F), which raised the suspicion of a CNS infection. The important components of the LP were the CSF appearance, WBC count, protein and glucose content.

The use of EEG is a lot more common in the USA than the UK and during the rotation I was taught how to accurately read an EEG including how to differentiate between the different waveforms. I observed the various indications for an EEG including differentiating between epileptiform and non-epileptiform seizures. An EEG can also be used to help localize the location of a seizures origin. I had the chance to see a few normal EEG's and also saw a couple of patients with epileptiform EEG changes. I feel experience this has provided me with an excellent starting point for EEG interpretation, although a lot more practice will be required.

Not many of the patients I saw required EMG's although there were some patients who presented with weakness of unknown cause. For example one patient presented with sudden onset bilateral le weakness whilst on the toilet but had a normal CT and MRI of the brain and also a normal spinal MRI. Thus, the role of the EMG was to identify the possibility of a neuropathy or myopathy.

Demonstrate an understanding of the basic principles of neurological therapeutics including use the various medications for neurological disorders and the role of surgical intervention in neurological disorders.

There is often thought to be few cures for neurological conditions, however although there are often there no medication available it doesn't mean that patient's quality of life can't be improved. I have seen several epilepsy patients during this placement who have been treated for many years with anti-epileptics and found that seizure occurrence dramatically decreased, which undoubtedly improved their quality of life. One of the patients was found to have had seizures during times of stress for many years, which went untreated, and when given an MRI he was found to have polymicrogyria, which, although not curable, allowed the patient to have a defined diagnosis and a seizure management plan put in place. Another patient who suffered

cardiac arrest for over 10 min was given hypothermic cooling with induction of a medical coma for 4 days and made a remarkable recovery with minimal residual neurological deficits.

An important, and often unappreciated, aspect of therapeutics in neurology is the work of patient rehabilitation by the Physiotherapists and Occupational therapists who work to rehabilitate patients to get them back to their baseline (or as close as possible). This rehabilitation forms a major component in the management of neurology patients as damage to the CNS often requires rehab and relearning of tasks and skills.

Personal Objectives

One of my personal objectives was to experience medicine in a community as diverse as East London but made of a different cultural population. Working at the Roosevelt Hospital gave me the chance to achieve this, as the population was very diverse ranging from Caucasian Americans, Africa-Americans and a large Hispanic and South American population.
It was also interesting to see that the patients were from a wide range of financial (income) backgrounds, which is something that is less evident in the UK. I was able to see some patients who had been living on the streets for years and come in with seizures, as they had not been taking their seizure medication as could not afford it. I also saw reasonably wealthy small business owners and middle-class Americans who had been admitted to hospital but were more eager to return to work. One interesting observation I found was that in neurology there is no class or cultural boundary to the variety of conditions that arise e.g. Dementia or epilepsy, can occur in poor, middle-class or wealthy population groups. However, I did find that the method of eliciting a pertinent history and explaining advice regarding management varied somewhat depending on patient's circumstances.
From my experience here I have also learnt that being able to speak a second language that is suited to the area you work (i.e. Spanish) can be extremely beneficial in building rapport with the patient to glean pertinent information but also in explaining the management plan to the patient.

Another objective was to experience the private healthcare system of the USA. I found this system to be complex and quite worrying. I was relieved when I began working at the hospital that no patient was turned away from the Emergency department due to lack of insurance and patients were treated according to clinical need and with the patients best interests at heart regardless of whether or not they had insurance.
However, what I found concerning was the combination of defensive medicine and cost to the patient. For example the patients will be given MRI scans and tests to ensure that there is nothing identifiably wrong with them on discharge. This works in the patient's best interest but also in the interest of the hospital to avoid being sued if they miss something. However, if the patient is not insured these tests occur at much expense to the patient and even their

insurance may not cover the entirety of the cost. Why this concerned me is that the patient has to choose between a thorough work-up and whether they can afford the investigation. Another aspect I found quite worrying was that patient insurance does not always covers all the patients' needs. An example of this was a patient who had been admitted with Multiple Sclerosis (MS) and had insurance for St. Luke's-Roosevelt and Beth Israel Hospitals and as a result was restricted to services and follow-up with doctors on the insurance plan. There was only one MS specialist on the plan who had waiting lists of over 3 months and when the patient saw a doctor who was not on her plan it personally cost her $500 per visit. This patient was a middle-class working lady and she could not get adequate follow-up for her condition which had flared up and required 2 nights hospital admission. It also transpired that she was on no medication for her MS and had not been on any for the past 3 years as she was afraid to ask her insurance company as she was unsure if it was covered. On finding out about this the neurology Attending tried to arrange a follow-up with an MS specialist colleague However, if not for the kindness of the doctor this patient, who is otherwise healthy, could suffer from recurrent hospital admissions and a severely reduced quality of life because she had the "wrong type" of insurance. I feel this puts patients at risk of unnecessary harm.

Overall I feel I have had a very good experience and covered all the objective set by the medical school and as well as my own personal objectives. I feel my knowledge and examination skills have improved significantly during my time here, having been given more responsibility than I have on previous placements, as well as from teaching during rounds, timetabled Attending teaching sessions and grand rounds. I feel the doctors in the USA are highly skilled and care a lot for their patients, and do very well to provide such a high level of care within the system they have in place.

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