ENDOCRINOLOGY

Frederick Hamilton
ha07264@qmul.ac.uk
07720-436695

<u>Reminder to Dr Akker:</u> Please send your grading to me and to the student office (mbbs-year5-admin@qmul.ac.uk) as soon as you can. You should use the form Appendix 3, which I gave you.

Elective Report

Subject:	Clinical Endocrinology
Dates:	26 April – 27 May 2011
Location:	St Bartholomew's Hospital, London
Supervisor:	Dr Scott Akker (scott.akker@bartsandthelondon.nhs.uk)

Objectives

1) To improve history-taking and clinical examinations in an endocrine-focused manner.
2) To follow complex endocrine patients through their treatment pathway and assess patients with thyroid disease, adrenal disease, pituitary disease and endocrine cancer
3) To become familiar with normal and abnormal values for baseline and dynamic endocrine tests and develop an understanding of how to interpret them
4) To learn about treatment options and prognoses for common and rare endocrine conditions

How These Objectives Were Met

The elective was carried out with the specialist tertiary endocrine team based on Garrod and Francis Fraser wards at St Bartholomew's Hospital. From the morning of day one I was welcomed into the team and within half an hour was clerking new patients in clinic. Throughout the placement the team was very supportive of my learning and encouraged me to get involved at every opportunity.

1) As far as endocrine histories and examinations were concerned, I was able to clerk many patients in clinic, as well as on the wards. I presented patients to consultants in clinic and on formal ward rounds and, most often, to the registrars on the ward. I received feedback and teaching in various forms in this context, and was therefore able to hone my endocrine skills: I learnt about the different areas to cover in a full endocrine history; I was able to practise my thyroid examination skills many times, learning to distinguish different kinds of goitre; I was taught specific techniques for visual field testing, particularly relevant in pituitary and

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thyroid eye disease; I attempted fundoscopy on various patients; I carried out diabetic reviews; I began to recognise end-of-the-bed signs in Cushing's syndrome, acromegaly and thyrotoxicosis.

2) I was able to follow the progress of various patients with complex endocrine problems by clerking them myself or reviewing them with the ward-round team, discussing their investigations and management with the consultants, registrars and junior doctors, attending radiology meetings at which their imaging was reviewed, and then, in many cases, watching their clinical conditions improve as an effective management plan was put into action.

For example, I saw a young man with marked acute bitemporal hemianopia and a short history of headaches as well as longer-term signs of panhypopituitarism (low libido, hypogonadism, weight loss, lethargy, malaise). Imaging showed a pituitary adenoma and he was put on a surgical list within the week. Trans-sphenoidal surgery was carried out and his adenoma was almost totally removed. What was most striking, though, was that his substantial visual-field loss improved dramatically immediately after the surgery.

I also clerked a patient with Graves thyrotoxicosis who had presented with jaundice. Both the anti-thyroid drugs used in hyperthyroidism, carbimazole and propylthiouracil (PTU), can be hepatotoxic. This patient had been taking PTU, so that was immediately stopped and the endocrine team began to consider her for radio-iodine treatment. (In fact, the US Food and Drug Administration published an alert in 2009 about the risk of liver failure in patients taking PTU.[1] The FDA's Adverse Event Reporting System had identified 32 cases of serious liver injury associated with PTU use. Of those, 13 patients died and 11 were given liver transplants.) Meanwhile the patient was assessed by the hepatology team, who investigated her for other causes of the jaundice. No other cause was found, and the results of a liver biopsy were consistent with drug-induced damage. When I finished my placement on May 27 she had received her radio-iodine treatment and was waiting to be moved under the care of the hepatology team at the Royal London Hospital. Unfortunately the presence of the radioactive iodine in her system meant that she could not be moved to a ward at RLH because staff there were not trained in the care of such patients. This was an interesting and educational case for various reasons: 1) PTU-induced liver damage is very rare; 2) despite being on the brink of possible liver failure, the patient was walking around quite happily with very few symptoms and her main complaint was of being bored because she had to stay in hospital; 3) the logistics of transferring the patient's care to the hepatology team became very complicated because her radio-iodine treatment made her a risk to other patients and staff.

I also attended a number of clinical meetings with the team. This included MDTs, a registrar's oupatient review meeting and the weekly departmental clinical case meetings. At the latter I presented another interesting case that I had been following. The patient was a middle-aged woman who was diagnosed with multiple para-aortic paragangliomata after presenting with poorly controlled hypertension, night sweats, palpitations and weight loss. She underwent surgery to remove four paragangliomata and was making a relatively uneventful recovery when my placement finished. My presentation included a full background and clerking, a rundown of the investigations carried out (biochemistry and

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various imaging modalities), a summary of events during surgery and an outline of her post-surgical recovery.

3) At the start of the elective a great deal of the jargon regarding the specialist endocrine investigations went over my head. This included discussions of both imaging and biochemical testing. However, before long I began to understand the indications and interpretation of baseline measurements of hormone levels (plasma and urine), as well as those of dynamic testing. The latter included tests such as cortisol day curves to assess hydrocortisone replacement regimes, the short synacthen test to assess adrenal function, 72-hour fasts for hypoglycaemia and dexamethasone suppression tests in Cushing's syndrome. Some of the normal values for these tests have not stayed embedded in my memory, but over the short period of the elective I was able to appreciate the reasoning behind each of them and understand the interpretation of their results. I was also able to understand the results of venous sampling for the localisation of adrenal and pituitary lesions. As far as imaging went, I attended a number of radiology meetings and heard discussions of numerous cases involving imaging modalities such as pituitary MRIs, abdominal CTs, PET scans, MIBG scans for phaeochromocytomas and sestamibi scans for parathyroid adenomas.

4) While I was at Barts I encountered a number of different treatment options for the endocrine disorders that the team deals with. On the medical side I saw the use of hormone replacement in various forms (hydrocortisone, T3 and T4, testosterone, insulin), as well as antagonists such as carbimazole and PTU in thyroid disease, metyrapone in Cushing's, phenoxybenzamine and propranolol in phaeochromocytoma. The team runs a radio-iodine clinic, which I attended. Patients for whom this treatment is appropriate are given the radioactive iodine in the lead-lined "hot room" and allowed no close contact with any other person for a few days after they receive the dose. Surgically, the team refers patients for various procedures, including trans-sphenoidal surgery to remove pituitary adenomas, thyroidectomies, hemithyroidectomies, parathyroidectomies, adrenalectomies, removal of paragangliomata, removal of phaeochromocytomas and pancreatic surgery for insulinomas. I was able to see how these treatment decisions were made in discussion with the surgeons in the multidisciplinary radiology meetings.

I chose to do this elective in order to pursue an interest that I had already developed in endocrinology. Spending time with the team was an inspiration and I am now even more keen to work out how to practise in the specialty myself in the future.

References

1. US Food and Drug Administration (2009). *Information for Healthcare Professionals - Propylthiouracil-Induced Liver Failure.* (Accessed 5/6/11, at www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHeathcareProfessionals/ucm162701.htm)