There and Back Again:

Elective Report by Nisreen Fahmy

Countries Visited:

Egypt *25th June 2007- 20th July 2007*

Clinical placement in the Surgical Emergency Department of Kasr El Aini University Hospital, University of Cairo.

Sudan *23rd July 2007 – 10th August 2007*

Laboratory project "Diagnosing TB Lymphadenopathy in Rural Sudan" Institute of Endemic Disease, University of Khartoum.

Choice of countries

Why two countries?

I chose to divide my elective between two countries as I felt that the time period was sufficiently long to justify dividing it. I didn't want to pass on the opportunity to experience two different cultures rather than just one. I feel the elective period is a unique opportunity to allow clinical students the possibility to travel and *work* within a different country. In this way it allows them to *live* a new culture as apposed to simply observe it as one may do on holiday. I wanted to make the most of this opportunity by visiting two neighbouring countries at different stages of development, which I felt would be reflected in their healthcare system.

Why do a clinical placement and lab project?

As yet I am unsure what clinical specialty I would like to pursue as my future career. I am interested in pursuing an academic career alongside my clinical specialty and would like to conduct research in the future. As such I wanted to gain more experience in laboratory work globally. However, I did not wish to limit my elective to a laboratory-based project and miss out on this unique opportunity to experience clinical medicine in a new country. I wanted to SEE medicine being practiced outside the UK! Therefore I decided to not only divide my time in different countries, but also in different branches of medicine to gain as wide an appreciation of the different aspects of medicine as possible.

Why Egypt and Sudan?

Egypt and Sudan are two countries both alike in continent and language but different in many other respects.

Egypt is renowned for producing world famous surgeons and physicians from throughout its 5,000 years of civilisation. More recently, figures such as Naguib Mahfouz (Obstetrics and Gynaecology) and Professor Sir Magdi Yacoub (Cardiothoracic surgery) have revolutionised their respective specialties. I was interested to see how emergency medicine was practiced in Egpty as a fast developing country. It can currently neither be regarded as a 1st world nor a 3rd world country but lies in the middle having some, but not all the facilities afforded to more afluent countries. Whilst there is a growing middle class in Egypt, there is still a sizable section of the population living below the poverty line. This diacotomy is reflected in the health care system.

I chose Kasr El Aini Hospital for 3 reasons. The first was that I wanted to be in Cairo. The second reason was being that Kasr El Aini is the largest hospital in Cairo and is affiliated with the University of Cairo. It is also one of the few public hospitals in Cairo, where health care is provided free at point of use, and hence has a high patient load. This meant, as I anticipated, that I was involved in a wide variety of cases during my limited time there. The third reason was that I found the organisation The Egyptian Association of International Medical Studies (EAIMS) using a Google search. They help organise placements for international medical students at Kasr El Aini, as well as placements for Egyptian students abroad. They served as a valuable point of contact for organising my attachment in the hospital and were easily contactable via e-mail when organising my placement from the UK. Furthermore through EAIMS I met other international medical and dental students from Europe and North America who were also on attachments in Kasr El Aini during my time there. This proved to be very welcome as I was able to discuss my hospital experiences with fellow clinical students who shared similar experiences.

Me and the other EAIMS students at dinner on the Blue Nile Boat

My placement in Cairo was in Surgical Emergencies which was housed in a large department comprising a 5 bed resuscitation room, 50 bed post operative / medical ward and three emergency theatres. I chose this department as it was the closest approximation to what we call A&E. Although I am not necessarily considering a career in acute medicine, I thought a placement in an emergency department would give me an appreciation for the wide spectrum of diseases prevalent in Egypt, more than if I were attached to one particular subspecialty.

Entrance to Kasr El Aini Hospital – Cairo University Complex

I chose to conduct the second part of my elective in Sudan for two reasons. The first was that I was interested in learning more about the culture of Sudan. This is because it is a country similar to Egypt in ways such as the language and people, but is also the biggest country in Africa and therefore its culture has been influenced by the presence of many different tribes. The second is that I thought it would be a great place to learn about tropical diseases, something that is very difficult to gain a full appreciation of in the UK. I did my placement in the Institute Endemic Disease as it is a very active department, with many ongoing research projects.

Entrance to University of Khartoum Campus

Details of my placements and what I learnt

Egypt:

Surgical Emergency – what I did

The Surgical Emergency Department of Kasr El Aini is one of the busiest departments in the hospital, with the highest patient load as it serves as a tertiary referral centre for the whole of Egypt. It is also one of the more poorly funded departments in the hospital. The result is that resources are very limited. However, the hospital itself is the biggest and best known teaching hospital in Egypt and as such attracts the most prominent professors. Most of the doctors I met had either taken or were studying to take membership exams for the English Royal Colleges, and were therefore very familiar with the British health care system. The result is that physicians know what should be included in the patient management, but lack the resources to do so completely. Hence the health care professionals do what they can with what they have available.

One of my first experiences of this was the common practice of giving inpatients their own syringes when they arrive. This is because they cannot afford to use a new syringe each time they inject a patients, but equally they would not re-use the same syringe for different patients. So their solution is to simply re-use the same syringe in the same patient.

The doctors in the hospital all spoke very good English and were extremely friendly. (Really very friendly, I couldn't have been made to feel more welcome). Although talking to nurses and patients was a bit harder, due to my lack of Arabic and their lack of English, there were plenty of junior doctors around more than willing to take me under their wing and help translate. They were also very keen to get me involved in

helping them with their daily jobs, such as anticoagulating patients, doing arterial blood gases, dressing wounds, and administering fluids.

When not on the wards I spend most of my time in emergency theatres. Here I made the most of the fact that the Egyptian medical students were on their summer holiday, and got involved in as many operations as I could. I was never told I couldn't scrub up for an operation, even in complicated cases involving many surgeons. This is because there is an ethos in the hospital that, as it is a teaching hospital, everyone should be given the opportunity to learn, even if this means revising a bit of anatomy and suturing at the end of the procedure. In the more routine cases, it was often just me and the surgeon, and in this way I assisted in many appendicectomies, traumatic finger amputation repairs, repair of a fractured mandible and repair of strangulated inguinal hernias.

I also spent a few days in the resuscitation room where I became involved as a member of the crash team resuscitating cardiac arrest and shocked patients. Anyone who has been to Cairo will bear witness to the chaos that is the roads of the city. Unfortunately during my time in the emergency department, I saw the consequences of this in the numerous road traffic accidents that came in daily. The most memorable of which was a 13 year old boy who died in theatre as we tried to stem his intra-abdominal bleeding.

I also had the opportunity to visit the outpatient's clinic which proved to be a valuable contrast to the wards. Here I saw patients who had been treated successfully and were discharged home as opposed to those whose hospital stay had been protracted by complications such as infections and mismanagement due to lack of resources.

In general my experience during my time in the Surgical Emergency Department included seeing and partly managing pathologies of the first *and* third world such as:

- Many cases of intestinal obstruction and appendicitis
- Road traffic accidents and trauma including perineal tears from bike-riding
- Rheumatic fever, first presentation and its late complications
- TB and its late complications including Potts disease

- Krukenburg tumour
- Massive uterine fibroid resulting in adhesions and intestinal obstruction
- Massive strangulated inguinal hernia and acute haemorrhagic pancreatitis
- Chronic liver disease secondary to Hepatitis C
- Amputations secondary to obesity induce atherosclerosis
- Hospital stays complicated by chronic malnutrition
- Plastic, Orthopaedic, Vascular, and Maxilofacial Surgery

I also had the opportunity to attend an elective operating list and saw an incisional hernia repair, an open cholecysectomy and release of a stenosing tenosynovitis of the first and second digits.

During my time in Kasr El Aini I have gained an understanding into why Egyptian surgeons are traditionally considered to be very skilful. I believe it is because of the sheer volume of cases that they do whilst training. As an example an average day would include 3-5 appendisectomies, which would be done by the Resident physician (year 2 – year 4 post medical school) and would rarely, unless the doctor was very junior or it was extremely complicated, require the aid of a more senior surgeon.

Kasr El Aini clock tower

Obstetrics and Gynaecology

In addition I spend a few days in the Obstetric and Gynaecology department in order to compare the Surgical Emergency department to another department in the hospital. Again one of the busier departments, it is better funded and hence has slightly better facilities. This includes a brand new high resolution 3D colour ultrasound machine,

which, I was informed by one of the obstetricians, was better than ones he'd used in the NHS (he'd just returned to Egypt after spending 7 years working in London). This machine had been sold to Kasr el Aini at a discounted price because the manufacturers wanted to be able to say that their machine was being used at that hospital.

On Labour Ward (called the Obstetric Emergency Department), I saw many normal vaginal, and caesarean deliveries. The biggest difference I noticed here was the lack of analgesia offered to patients. The hospital could only afford to provide each patient with Entonox, and even this was rarely used. In the elective gynaecology theatre I saw a total abdominal hysterectomy, and diagnostic laparoscopic salpingogram.

Reflections on my time in Egypt

What I grew to appreciate from moving around the different departments was the difference in the quality of patient care between the poorly funded and busy Emergency Departments, of Surgery and Obstetrics, and the better funded elective procedure departments. For example in the emergency theatres, sterile cotton drapes were used to cover the patient to make a sterile field, whereas in the elective lists they could afford disposable paper ones. The facilities were also better in the elective theatres and the presence of air-conditioning meant that the flies that were prevalent in the emergency theatres were kept away from the elective ones. If I had the opportunity to go back I would be interested to see how the private hospitals in Egypt compare to the public ones.

Setting aside the issue of resources, the biggest difference between Kasr El Aini and my experience of UK hospitals is the doctor patient relationship. Doctors in Egypt are extremely well respected, and because of this patients tend to agree with whatever they say. I have come to appreciate there is also a class issue at play. This is because in order to fund oneself through medical school and the ill paid junior doctor years in Egypt, one has come from a family that can afford it. Hence doctors tend to come from the more affluent sections of society whereas the patients, especially those at Kasr El Aini, come form the poorer sections. Although Egypt is not a country that

values money above all else, what it does respect is *education* and doctors are considered to be the most highly educated.

Despite all these apparent differences, what I took away from my time in Cairo is an appreciation for the similarity of Medicine in different countries. Putting aside the difference in resources the principles of taking a good patient history, examining, investigating and managing the patient were the same. Reflecting on it later, I concluded that this is to be expected given that humans are the same species, no matter where they live. And doctors will still speak the international languages of Anatomy, Physiology, Biochemistry, and Pathology.

Emergency theatre

Outside of the Hospital:

Egypt hardly needs advertising when it comes to what there is to see and do. A popular tourist destination by virtue of its rich history, in Cairo there are the Pyramids, Egyptian Museum, Citadel, numerous ancient Mosques and Coptic Churches as well as the unmissable Khan il Khalili market. However if you are going for a while, I wouldn't limit myself to just the tourist attractions. There is an ever increasing entertainment culture with concerts for Arabic Singers, as well as many restaurants and night spots (often overlooking the Nile) that cater to westerners and the more affluent sectors of Egyptian society.

Outside of Cairo there are many places to visit, each with a different appeal. For more insight into ancient Egyptian history there is Luxor and Aswan. For an escape to the coast, Alexandria, on the Mediterranean, is possible to do in a long weekend, and Sharm il Sheik, on the Red Sea, if you want to spend a bit more time outside of Cairo. For a more rustic experience there are also a few oases that are worth a visit.

A different view of the Pyramids – on the coach on the way up to Alexandria

Sudan:

I spent my time at the Institute of Endemic Disease analysing the large database, complied by Professor Eltahir Khalil and his colleagues over many years. The aim of the analysis was to develop a clinical algorithm to help clinicians in the community to differentiate TB lymphadenopathy from other causes in the paediatric population in Sudan. The advantage of this is twofold. First it avoids children having to suffer the painful procedure of Fine Needle Aspiration Cytology (FNAC), which is currently the gold standard for diagnosing TB lymphadenopathy in Sudan. Secondly to allow prompt commencement of antituberculous drugs in patients who may otherwise have to wait a couple for weeks to have and get the results of the FNAC. Whilst analysing the database I became familiar with the EpiInfo software for statistical analysis. I have attached a copy of an abstract I have written, which concludes that the most characteristic findings in patients with TB infection are:

- Night sweats
- Short history (less than 14 days)
- More then 1 enlarged lymph node
- Mantoux wheal $\geq$ 10mm
- ESR $\geq$75
- Lymph node $\geq$ 3cm

As well as being the centre for scientific research, the Institute of Endemic disease also serves as a clinical investigation laboratory where patients with

lymphadenopathy, and other complaints may have their full blood count, urea and electrolytes, and liver function tests monitored. Patients also come into the institute to have their FNAC of their enlarged lymph node, which I had the opportunity to observe. In this way I was not only gaining an appreciation of the national extent of lymphadenopathy, through analysis of the database, but also gaining a clinical appreciation for the patients behind the numbers.

Whilst in Sudan I also had the opportunity to attend clinics and operating theatre lists for Mycetoma. Mycetoma is a tropical disease characterised by skin lesions that may affect any part of the body, and infiltrate into bone. The clinics took place in the Mycetoma Research Centre at the Soba Hospital. I took the initiative to organise these extra placements as I wanted to experience this tropical disease first hand. I then went on to do a gene sequencing project in a consanguineous Sudanese family with a high incidence of Mycetoma for my Cambridge Specials SSC when I returned to UK.

Mycetoma Research Centre

My general impression of living and working in Sudan is that it is country rich in culture and definitely worth considering visiting for elective. Everyone was very friendly and hospitable. The general level of English was a little lower than in Egypt but good enough to be able to communicate, and people are always very keen to practice their English with you! There are many different and interesting diseases to be seen, and patients tend to present late so the pathology is advanced.

If considering a career in Infectious/ Tropical Disease, or considering research, I would definitely recommend a laboratory placement. This is because in order to study tropical diseases it is necessary to collaborate with doctors and scientists who live in the countries where these diseases are endemic. As an example the laboratory at the Institute of Endemic Disease that I worked for in Khartoum works in

conjunction with labs at the Cambridge Institute of Medical Research, studying diseases rare in the UK such as Lieshmaniasis. I now recognise it is invaluable to gain an insight into how society, work and in particular research is conducted in such countries in order to work effectively when attempting to collaborate on projects in order to produce good research.

Outside of the Laboratory:

There is a lot to see and do in Sudan. In Khartoum there is the Museum of Khartoum, which explains the history of Sudan from the stone ages until present day, as well as many souks and nile-side exhibitions. The city is less built up than Cairo and therefore one can experience the Nile and its delta as it's imagined. Khartoum is located at the fusion of the Blue and White Nile, both of which can be differentiated by their different colours! If the tides permit, a visit to Touti Island in the middle affords a great view of the two rivers.

There is also much to see outside the capital. The ancient pyramids in Marawy have a different history to the old Kosh Kingdom and are much smaller but more elongated than the Egyptian pyramids. Port Sudan in Eastern Sudan faces the Red Sea and scuba diving and fishing are easy to organise on a weekend trip.

A note about safety and getting around

Egypt:

Cairo is a cosmopolitan city and caters well to visitors. As a woman getting around by myself I didn't experience much difficulty. I took taxis to the hospital every day with no problem. Taxi drivers tend to charge you more if they think you are foreign, but they are very good humoured people and the extra money amounts to a few English pence.

Walking short distances between shops or from taxis is fine, and it is safe to take a stroll by the Nile, but I didn't see many people walking long distances.

With regards what to wear. In the hospital I wore shirts and trousers, with my white coat. If you want to go to theatre you need to have your own set of scrubs, which I bought for the equivalent of £5 when I was there. Outside the hospital jeans or below

knee skirt and short sleeve T-shirt was my staple wardrobe and I didn't feel out of place. I would also advise taking smart clothes for going out in the evening.

Sudan:
Although Sudan has been in the news of late, with regards the situation in Darfur, it is possible to say that the stability of Khartoum as the capital has been maintained. Having said this I did not travel outside of Khartoum.

Khartoum is not as much of a metropolis as Cairo and it does not host as many internationals, however one gets the impression that this is changing. Walking from car to university afforded me a few stares because of my light skin and western dress, but nothing more than that.

As with Cairo, shirt and trousers to work, and jeans/skirt and T-shirt were appropriate daytime wear.

Cost

Flights £550:
Egypt Air flight from London to Khartoum with a 4 week stopover in Cairo was the cheapest and easiest option for me to travel to both destinations. The best deal I found was with Amoun Travel Agency, which is able to give discounted Egypt Air flights.
Amoun Travel and Tours Ltd
56 Kendel Street,
London,
W2 2BP
Tel: 0207 402 3100
Fax: 0207 402 3424
URL: www.amountravel.co.uk

Administration Fees:
EAIMS' policy is €50 administration fees for a placement of less than 1 month and €100 for longer.
There were no fees for Sudan.

Visas:

In Egypt the visa is bought for circa £10 when you arrive at Cairo airport. However, for Sudan the Visa MUST be bought in advance and is £50. It requires completion of an application form and a day at the Sudanese embassy in London to hand in the form and passport in the morning and then collect the passport with visa in the afternoon.

Funding:

I am very grateful to Addenbrooke's Abroad, and the Duckworth Fund of Jesus College for their help towards my elective expenses.

I thoroughly enjoyed my elective and feel that by dividing the seven week period I have gained insight into both patient-centred and population-centred clinical medicine. I have also gained an appreciation that the core principles of Medicine are universal although implementation still relies on resources. I look forward to taking the skills I have acquired back to the UK and am sure they will aid me in my future career.

ABSTRACT

Diagnosing TB Lymphadenopathy in Rural Sudan

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Introduction: Lymphadenopathy is an extremely common sign for a wide range of diseases. It may represent benign or malignant disease as well as serving as a marker for a wide range of infectious organisms. In countries where Tuberculous (TB) is endemic it should be considered and treated early. However, diagnosis of TB in these countries may be difficult for many reasons including ambiguous interpretation of the Tuberculin Skin Test and limited access to laboratory investigations. In Sudan the gold standard for the diagnosis of TB is Fine Needle Aspirations Cytology (FNAC). However, this is not easily accessible to clinicians outside of Khartoum, and the time lag in obtaining results correlates with delays in instigating treatment. In addition FNAC is invasive and particularly distressing for children. Therefore there remains a need for an algorithm to help clinicians in rural areas decide when to treat children with lymphadenopathy with antituberculous therapy and when not to ensure minimal delay in appropriate patient management.

Methods: Utilising the Lymphadenopathy database of the Institute of Endemic Disease, Khartoum, Sudan we selected the paediatric population (n=233), and subdivided the groups into TB + (n=81), and TB – (n=136). We then compared variables including site of swelling, texture of node, duration of swelling, number of nodes, serum haemoglobin, leucocyte count, ESR, Mantoux test and associated symptoms. Statistical analysis using the students T test was used for unequal variance and calculations of sensitivity, specificity and positive and negative predictive values.

Results: The characteristics most suggestive of TB lymphadenopathy are: short duration of swelling (average being 14 days), greater than one enlarged lymph node, ESR $\geq$ 75, Mantoux wheal $\geq$ 10mm, night sweats and a palpable lymph node $\geq$ 3cm.

Discussion: These results correlate well with the algorithm previously designed by Professor Khalil et al for the adult population. However, lower cut off measurements for Mantoux wheal and ESR are recommended. A prospective study is now needed to establish the effectiveness of this paediatric algorithm at diagnosing TB lymphadenopathy.