Medical Elective – Hong Kong

(23rd June – 25th July 2008)

Prince of Wales Hospital – “Anaesthesia and Intensive Care”

By Esther Cole
Index:

Introduction .................................................................................................................. Page 3

The Elective ................................................................................................................... Page 4

Ethical Issues Raised ..................................................................................................... Page 5 – 6

Learning Experience ...................................................................................................... Page 7

.......................................................................................................................... Page 8

New objectives .............................................................................................................. Page 9

Future learning .............................................................................................................. Page 10

Impact on host ............................................................................................................... Page 10

References .................................................................................................................... Page 11 – 12

Appendix I .................................................................................................................... Page 13

Appendix II .................................................................................................................. Page 13

Appendix III .................................................................................................................. Page 15 – 16
Introduction:

“Although the world is full of suffering, it is full also of the overcoming of it.”

~ Helen Keller
US blind & deaf educator (1880 - 1968)

I was fortunate to be accepted for an elective placement at the Prince of Wales Hospital in Hong Kong, attached for five weeks to the department of Anaesthesia and Intensive Care. Hong Kong is located about 80 miles Southeast of Guangzhou, China, and consists of the peninsula off the Chinese mainland and many offshore islands, including Hong Kong Island (figure 1). There is a high population density. In 2007 6,925,900 people occupied the 410 square miles of land.1-4 Hong Kong is a leading financial centre with a highly capitalist economy heavily based on service industries; tourism, international trade and banking are especially important. Hong Kong’s stock market, the Hang Seng, is one of the world’s major financial markets.2,5

Fig 1. Map of Hong Kong6

A former British colony on lease for 99 years, Hong Kong was handed back to Chinese rule to become a special administrative region of China on July 1st 1997. Hong Kong operates under the “One Country, Two Systems” principle, referring to the Country’s ethnic and cultural identity with China, whilst retaining the legacy of past British rule. No more clearly is this seen than in the Country’s healthcare system.7
Hong Kong’s provision of healthcare, like the NHS in the UK, uses the Beveridge model. This is because the population refused to give up this style of healthcare when they were handed from Britain to China.\(^8\) Public healthcare is provided by the government through tax payments, with a coexisting and complementary private system.\(^9\) The majority of primary health care is provided privately, while most secondary care is provided by the Government-funded Hospital Authority. This laissez-faire system of primary healthcare can result in doctor shopping and concerns that patient care may be compromised. On one street in Hong Kong, I noticed five general practitioners in competition against each other.

Alongside Western-style medicine, Traditional Chinese Medicine (TCM) is the principal alternative primary care provider. TCM has gained popularity in Hong Kong, its usage increasing by 154% between 1996 and 1999 after the introduction of regulations. TCM is used in parallel by many people to restore the natural balance of the body, alongside the symptomatic treatment of Western-style medicine.\(^7,9\)

Hong Kong has a variety of religious groups including Buddhism, Taoism, Confucianism, Christianity, Islam, Hinduism, Sikhism and Judaism. Some of these religious groups have established healthcare facilities such as hospitals, clinics, social and family centres, and rehabilitation centres.\(^10\)

Hong Kong shares many of the problems faced by developed countries; an aging population, pollution and deteriorating air quality, as well as rising obesity rates. Diabetes, coronary heart disease and other lifestyle-related diseases are on the increase as fast food has become the staple diet. In 2003, a survey showed that 79.4% of women and 87.1% of men had insufficient daily fruit and vegetables in their diet.\(^7\)

Hong Kong was also witness to the 2003 outbreak of Severe Acute Respiratory Syndrome (SARS) that was a political and economic disaster, with a total of 1755 cases, resulting in the death of 302 people, including 8 healthcare workers. This highlighted the need for better preparation, surveillance systems and control of communicable diseases.\(^7,11,12\)

**The Elective:**

This elective seemed like a natural continuation of my medical studies – an extension of hospital attachments in third year and good preparation for the demanding hospital placements of fourth year. Anaesthetics and intensive care are not formally taught at Liverpool, so this was a good opportunity to gain experience in these areas.
For the most part my role was that of an observer, mainly because patients in the Intensive Care Unit were so ill. In the operating theatres I had the chance to get some hands-on experience in anaesthesia, assisting in the pre-oxygenation and ventilation of patients, as well as inserting a laryngeal mask airway and IV cannula with assistance.

After a few weeks, I was joined by three elective students from the UK and medical students studying at the Chinese University of Hong Kong. I was attached to the two-week anaesthetics teaching module with the final-year students.

Every day we had formal lectures or practical tutorials, time in the operating theatre or in anaesthetic specialities. There were e-learning facilities including a “Virtual Patient” and Formative Assessment Cases (FACS) which we were encouraged to work through in preparation for the multiple choice examination at the end of the module.

**Ethical Issues Raised**

On the whole, few situations presented an ethical challenge. Those which arose mainly involved the language barrier or my chosen medical specialities.

In my second week I shadowed a doctor doing pre-operative assessments of patients. On the whole doctors communicate in English, but speak to patients in Cantonese. It was a challenge to understand what was being said, but I definitely feel my language skills improved over the course of the elective. One patient in particularly stood out. A woman in her 40s had been diagnosed with an intramedullary tumour at the level of her T11 vertebra. The doctor pointed her out to me as having interesting neurological signs, a really good example for medical students, and would I like to examine her?

I was left alone to do a neurological exam. She knew a little English and I knew very limited Cantonese. Had she not been so patient she could easily have got frustrated. I came to realise that even simple instructions such as “pull” and “push” were impossible for me to explain. This examination was primarily for my benefit. She would already have been examined dozens of times by doctors who had gathered all they needed to know.

This is a situation medical students often find themselves in. They need to improve their knowledge by examining ill patients, which may cause distress or discomfort to the patient and not always benefit them. On the other hand, patients may feel a sense of satisfaction in the knowledge that they are altruistically helping to train future doctors. While the patient’s suffering should be minimised to ensure beneficence and non-
maleficence, it is also important to respect the patient’s autonomy. I felt my insecurities growing as I made the patient push her leg as hard as she could against my hands, so I asked her again if she had any pain or wanted to stop. She assured me once more that her legs were completely numb.

Although I probably didn’t get as much medical knowledge from the encounter as I could have if supervised, I still had a valuable experience – I had to confront my feelings of unease and find a way to connect with the patient. I decided to ask how her leg weakness progressed, leaving her unable to walk. We chatted about how her doctor had misinterpreted her back-pain and thought her difficulty sensing the need to urinate was “in her mind”. I felt more comfortable and was able to empathise.

Seeing the patient later in the operating theatre was a completely different experience. I walked into the operation partway through and was struck by how dehumanised she seemed, unconscious and lying prone under the sheets, her face placed onto a special donut-shaped cushion. The surgical environment puts you in a different mindset. You have to view the patient more objectively and do what needs to be done.

The anaesthetist talked me through the technical difficulties of the positioning which allowed the surgeon access to her spine. He handed me a torch and taught me how to check that there was no pressure on her eyes from the cushion. In retrospect this raises another ethical consideration. Patients do not need to give consent to allow medical students to assist during the operation. There seems to be an unspoken agreement in teaching hospitals, allowing medical students to take on such roles without requiring permission.

In the ICU I encountered other ethical issues. With very ill patients there were end-of-life decisions, whether to let patients die peacefully or use aggressive treatments that may buy them more time. I was privileged to be allowed to help dress a patient with severe burns. While this was a memorable experience for me, in retrospect I was a complete novice and only learnt by doing. The patient was kept sedated and couldn’t say whether the dressings should be put on by a trained professional or an inexperienced medical student.
Reflections – Learning experience

A doctor described anaesthesia to me as being very similar to a pilot flying an aeroplane. First the pilot checks his equipment for faults, the plane’s monitors and dials which look remarkably similar to the Zeus or Primus anaesthetic machines. Take-off resembles the induction of anaesthesia, rapidly administering drugs, the rush to quickly intubate and ventilate the patient. This settles into the maintenance phase as the patient remains unconscious, their vital statistics displayed on computer screens. The anaesthetist looks for falls in blood pressure and heart rate that may require IV fluids or vasopressors, which the doctor described as ‘turbulence’. Finally the drugs are stopped and the patient begins to regain consciousness, hopefully equating to a smooth landing. The anaesthetist must be ready for every eventuality, which makes them an expert, not just a technician.

Appendix II contains a complete list of the learning objectives I set prior to my elective. I got a good feel for how Chinese people view health and how anaesthesia is integrated into healthcare. For my first objective I looked into Traditional Chinese Medicine.

<table>
<thead>
<tr>
<th>NAME</th>
<th>FUNCTION</th>
<th>USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>[君山茶] A.Against cancer B. Good for people who do chemotherapy</td>
<td>1. 4 petals 2. 500ml water 3. Small fire cook 10 minutes 4. Drink the tea soup once a day</td>
</tr>
<tr>
<td>5.</td>
<td>[阿波茶] A.Skincare to B. Good for sleeping C. Skin Allergy</td>
<td>1. Leaves 2. Wash tea 3. Infuse it 2 minutes 4. Drink it Any time</td>
</tr>
<tr>
<td>6.</td>
<td>[安茶] A.Migraine headache</td>
<td>1. One pinch 2. Wash tea 3. Infuse it 2 minutes 4. Drink it Any time (better right before sleep)</td>
</tr>
<tr>
<td>7.</td>
<td>[黄茶] A.Arthritis B. Reduce pain of shoulder and lower back</td>
<td>1. One pinch 2. Wash tea 3. Infuse it 2 minutes 4. Drink it as much as you can</td>
</tr>
<tr>
<td>9.</td>
<td>[红茶] A.Arteriosclerosis B. Lower blood pressure B. Reduce cholesterol</td>
<td>1. One piece 2. Wash tea (with cold water) 3. Infuse it 2 minutes 4. Drink it as much as you can</td>
</tr>
</tbody>
</table>

Remarks: The same tea leaf can be used for whole day. Just keep pouring the hot water.

Fig 2. The medicinal properties of tea. Photo taken in the Jade Buddha Temple, Shanghai.
TCM is widespread in Hong Kong. Chinese herbal medicine is particularly important, with 600 herbs in common use. These are believed to influence the yin and yang energy patterns of the body, depending on the temperature and taste characteristics of each herb. After my elective I saw TCM in China (figures 2-4). Traditionally the herbs are brewed or taken as pills. The taste is described as bitter and unusual to anyone who has not tried them before.
I asked my elective supervisor, Professor Critchley, about his experiences regarding TCM and anaesthesia. His department carried out a survey whereby 90% of people used Chinese herbs on a daily basis in the form of traditional soups and teas. It can be argued that thousands of years of practice has refined TCM, creating a non-invasive therapy with few side effects. However, research has shown increased perioperative events associated with TCM, while case reports describe toxicity, especially in the treatment of serious illness.

My second learning objective was achieved during my encounters with different sub-specialities of anaesthesia, including paediatric and obstetric, cardiothoracic surgery and post-operatively with the acute pain team. In retrospect, my expectations were misguided as I rarely encountered chronic pain management, palliative care or acupuncture for pain relief. On the whole anaesthesia was in the acute setting, but I did see how post-operative pain relief can be complicated by terminally ill patients receiving morphine therapy.

I fulfilled my third learning objective despite only spending six days on the ICU. I saw clinical application of what was taught in lectures, including fluid resuscitation, airways management and interpreting laboratory tests. The ICU and operating theatres were separated only by a corridor for ease of access. I saw clearly how closely surgery, anaesthesia and intensive care are integrated. This was exemplified in a burns patient who was sent from A&E to the ICU. He was sedated, intubated and given fluid resuscitation. Once stabilised, he was taken to the operating theatre for an escharotomy and dressing of his wounds, then returned to the ICU. Each department has a role to play.

Reflections – New objectives

I set many new learning objectives during my elective. I tried to employ the American style of learning whereby each evening I would read about subjects covered during my clinical attachment, including burns and the pharmacology behind anaesthetic agents. I set a new objective to look at the history of anaesthetics and explore future directions, which include ultrasound-guided techniques. I also saw how language barriers didn’t just apply to myself, but also to doctors from countries such as Malaysia and Mainland China for whom both English and Cantonese are a second language.
Reflections – Future learning

This elective has given me a more holistic view of surgical operations, as I saw patients from pre-operative assessment right through to the recovery room. Watching from the position of the anaesthetist behind a screen, I got a real sense of working ‘behind the scenes’ and will definitely start my surgical rotation with a very different outlook. I also saw how widely anaesthetic skills can be applied to other areas of medicine, notably intubation and IV access in emergency settings, the safe use of local anaesthetics, fluid resuscitation, and the importance of arterial blood gases and pulse oximetry in patient monitoring and diagnosis. These are skills I hope to use in the future.

Reflections – Impact on host

My elective supervisor was involved with medical education, so before the medical students arrived he let me try out the “Virtual Patient” computer program to check for any problems. I made friends with some of the doctors and medical students in Hong Kong. The biggest impact was probably on the medical students we shared lectures with, as having elective students from other countries brought a new diversity and different approach to their teaching. Figure 5 shows me (centre) with the medical students from the anaesthesia module.

Fig 5. Dim sum for lunch – Experiencing Chinese culture. Photo of elective students and final-year medical students from the Chinese University of Hong Kong.
References


Appendix I: Apology

I apologise that it has not been possible to include the Elective Approval Form in this elective report. Approval was received from the Medical Faculty, University of Liverpool, but unfortunately I misplaced this paper so cannot include it.

Appendix II: Elective Learning Objectives

1. To experience healthcare in another country and to see what cultural and social differences influence its provision.
   - To find out how Chinese people view ‘health’ based on their cultural and social background.
   - To see if Chinese people access healthcare differently compared to the UK.
   - To discover more about traditional Chinese medicines, especially how this is integrated with Western styles of medicine, (e.g. in the area of pain relief.)
   - To experience the culture of Hong Kong firsthand.

2. To see how anaesthesia is important in many aspects of clinical practice.
   - To find out in more depth how anaesthesia is integrated into many aspects of clinical practice, not just acute pain management for operative and post-operative pain relief, but also chronic pain management and palliative care.
   - To increase understanding of the pharmacology and science behind anaesthesia, as well as getting some hands-on experience if the opportunity arises.

3. To learn more about intensive care medicine.
   - To experience more intensive care medicine (as exposure to ICU has so far been limited.) This is a good opportunity to apply knowledge accumulated in 3rd year regarding re-hydration, intubation, breathing support and care of immobile patients.
   - To pay close attention to how anaesthesia and intensive care have a synergistic effect when combined.
## Appendix III: Timetable

OT = Operating Theatre

### Week 1:

<table>
<thead>
<tr>
<th>Day:</th>
<th>Am:</th>
<th>Pm:</th>
</tr>
</thead>
</table>
| Monday 23\(^{rd}\) June | - 9am: Report to anaesthetic office for infection control lectures and introduction  
             - 12:30pm: Theatre 9 for anaesthetics teaching & tour (old anaesthetics machines) | - 2pm: Intro to virtual patient (e-learning resource)  
             - 6pm: Inaugural lecture – Juliana Chan on Diabetes in Hong Kong |
| Tuesday 24\(^{th}\) June | - ICU: Septic Shock case  
             - Crash call | - 2pm: Lunchtime presentation on tracheostomies  
             - 4pm: Ward Round |
| Wednesday 25\(^{th}\) June | **TYPHOON 8 – Day off** | -  |
| Thursday 26\(^{th}\) June | - ICU: Cardiogenic Shock case | - 2pm: Lunchtime lecture from Liverpool on nutrition |
| Friday 27\(^{th}\) June | - ICU: Follow-up of Cardiogenic Shock patient & teaching | - Teaching on haemofiltration  
             - Teaching on fluid replacement |

### Week 2:

<table>
<thead>
<tr>
<th>Day:</th>
<th>Am:</th>
<th>Pm:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday 30(^{th}) June</td>
<td>- OT: Anaesthetics teaching &amp; surgical cases</td>
<td>- OT: Teaching on burns (saw ICU burns patient being dressed)</td>
</tr>
<tr>
<td>Tuesday 1(^{st}) July</td>
<td><strong>Holiday – Anniversary of 1997 handover of Hong Kong to China</strong></td>
<td>-</td>
</tr>
<tr>
<td>Wednesday 2(^{nd}) July</td>
<td>- OT: Anaesthetics teaching &amp; surgical cases</td>
<td>- OT: RTA with head injury</td>
</tr>
<tr>
<td>Thursday 3(^{rd}) July</td>
<td>- Emergency list: Pre-op assessment &amp; surgical cases (+ neonatal anaesthetics)</td>
<td>- 2pm: Virtual Patient</td>
</tr>
</tbody>
</table>
| Friday 4\(^{th}\) July | - Emergency list: Pre-op assessment & surgical cases – carried out neuro exam on patient with intra-medullary tumour at level T11 | - OT: Teaching & surgical cases.  
             - Saw patient undergoing surgery for tumour, in prone position. Anaesthetics needs certain modifications with position. |
### Week 3:

<table>
<thead>
<tr>
<th>Day:</th>
<th>Am:</th>
<th>Pm:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday 7th July</td>
<td>• OT: Anaesthetics teaching about Cardiothoracic surgery – Triple Heart Bi-pass</td>
<td>• OT: Anaesthetics teaching about Cardiothoracic surgery – Valve replacement</td>
</tr>
<tr>
<td>Tuesday 8th July</td>
<td>• Maternity ward: met other medical students from Glasgow &amp; Cambridge. Teaching on anaesthesia in obstetrics.</td>
<td>• OT: Teaching regional vs general anaesthetics. • Saw 2 caesarean sections – one regional anaesthetic, one general.</td>
</tr>
<tr>
<td>Wednesday 9th July</td>
<td>• Wards: Acute Pain Team. Teaching on pain ladder &amp; side effects of morphine.</td>
<td>• Lunch with other elective students &amp; exploring area around hospital.</td>
</tr>
<tr>
<td>Thursday 10th July</td>
<td><strong>Day off</strong> – writing up notes &amp; exploring Hong Kong</td>
<td></td>
</tr>
<tr>
<td>Friday 11th July</td>
<td><strong>Day off</strong> – writing up notes &amp; exploring Hong Kong</td>
<td></td>
</tr>
</tbody>
</table>

### Week 4:

<table>
<thead>
<tr>
<th>Day:</th>
<th>Am:</th>
<th>Pm:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday 14th July</td>
<td>• Welcome talk for Chinese students. Lecture on fluids &amp; electrolyte in surgical patients.</td>
<td>• Tutorial on airway management &amp; types of infusion sets.</td>
</tr>
<tr>
<td>Tuesday 15th July</td>
<td>• 8am: OT: Surgical case. • Tutorial on safety.</td>
<td>• Virtual patient (e-learning).</td>
</tr>
<tr>
<td>Wednesday 16th July</td>
<td>• 8am: OT: Surgical case. • Lecture on blood gas analysis.</td>
<td>• Lecture on pre-op assessment.</td>
</tr>
<tr>
<td>Thursday 17th July</td>
<td>• 8am: OT: Surgical case. • Lecture - management of hypoxia</td>
<td>• Simulated patient – Advanced Trauma Life Support (ATLS).</td>
</tr>
<tr>
<td>Friday 18th July</td>
<td>• Lecture on safe use of local anaesthetics &amp; sedatives.</td>
<td>• Write up notes &amp; do FACS (Formative Assessment Cases).</td>
</tr>
</tbody>
</table>
### Week 5:

<table>
<thead>
<tr>
<th>Day:</th>
<th>Am:</th>
<th>Pm:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monday 21st July</strong></td>
<td>8am: OT: Surgical Case.</td>
<td>Lecture on pre-op assessment.</td>
</tr>
<tr>
<td><strong>Tuesday 22nd July</strong></td>
<td><strong>Day off</strong> – Exploring Hong Kong with the other elective students</td>
<td></td>
</tr>
</tbody>
</table>
| **Wednesday 23rd July** | 8.15am: ICU ward round.  
• Lecture on regional & obstetrics analgesia. | Finish writing up notes & FACS (formative assessment cases). |
| **Thursday 24th July** | 8.15am: ICU ward round.  
• Lecture on blood & blood component therapy. | Lunch for dim sum with the elective and Chinese medical students. |
| **Friday 25th July** | 8.15am: ICU ward round.  
• Helped to dress a burns patient. | 2pm: End of module exam (multiple choice) |