Out of Programme Experience (OOPE) at Mbarara Regional Referral Hospital (MRRH), Uganda & the Safer Anaesthesia From Education (SAFE) Obstetric Anaesthesia Course

Having just finished a 3-month OOPE in Uganda, I am missing all the vibrancy, the people and the weather! Uganda is a truly stunning and lush country with a wide variety of landscapes from the savannahs, volcanic crater lakes and tropical jungles to the mist-shrouded mountain ranges and tea plantations. Uganda shares borders with Kenya, South Sudan, the Democratic Republic of Congo (DRC), Rwanda and Tanzania. Lake Victoria lies in the south of the country- it is the largest lake in Africa and the second largest fresh water body in the world. The Rwenzori Mountains, located along the Congolese border, are the highest mountain range in Africa. The animal and birdlife are fantastic, and there are numerous national parks to visit.[1]

Uganda: a brief background

It was a privilege to live and work in Uganda. In addition to the clinical experiences on offer, there was the opportunity to appreciate the culture and learn something of the country's history and politics, and that of its neighbouring countries. It also highlighted the tenacity of individuals who have made, and are making, a difference to society.

Uganda: a brief summary of recent political history[1,2]

(Around 1500: The Bito dynasties - Buganda, Bunyoro and Ankole- established)
1862: British explorer, John Hanning Speke, is said to be the 1st European to visit Buganda
1894: Great Britain makes Uganda a protectorate (Uganda takes its name from the Buganda kingdom)
1900: Agreement signed with Buganda, thus creating a constitutional monarchy
1952-62: Build towards independence
1962: Uganda's 1st Prime Minister, Benedicto Kiwanuka, instated (March). Uganda in transition between colonial British rule and independence
1962: New elections are held. Milton Obote takes over as Prime Minister (April). Uganda gains independence (October). Buganda given some autonomy under Mutesa's rule (Buganda's head of state); Mutesa becomes the President
1966: Struggle between Obote and Mutesa, leading to loss of Buganda's autonomy; Obote is now the President
1967: Uganda become a republic
1971: Idi Amin leads military coup against Obote and becomes the new President
1971-1979: Idi Amin's reign of terror, with atrocities against humanity. Uganda invades Tanzania in 1978. In 1979, Tanzania invades Uganda leading to unity of anti-Amin forces. Amin driven into exile (dies in exile 2003). Yusufu Lule made president; he is quickly replaced with Godfrey Binaisa.
1980: Obote returns to power
1982: Yoweri Museveni wages guerrilla war against Obote rule
1985: Obote ousted in military coup, led by commander of the army, Tito Okello. Okello now head of state within the broad based Military Council. Peace accord with Museveni breaks down
1986: The National Resistance Army marches into Kampala and Museveni gains power. Under Museveni rule, some selected traditional kings are restored, but with a lack of political power
2000: Multi-party politics rejected in favour of Museveni's 'no-party' system
2001: Museveni wins another term in office
2006: Museveni continues in office
2009: Museveni remains Prime Minister for the next term

The Lord's Resistance Army (LRA)

For the majority of Museveni's time in power, there has been conflict in the northern districts. In 1987, Joseph Kony, claiming to have been possessed by spirits, created the LRA, and was joined by rebels in the north. Initial attempts at toppling the government ended. Later, the LRA started targeting the very people it had professed to be freeing: the Acholi people. The Acholi have suffered horrific massacres, callous mutilations and large-scale child abduction. In 2005, The Hague issued warrants against Kony and his deputies for crimes against humanity. Rebel activity has been reported in the DRC, but the LRA has not been active in Uganda since around 2005. Over 10,000 civilians were murdered in the northern districts; equivalent numbers of children were abducted and many more people brutally injured. Kony remains at large.[1]

Uganda and Maternal Mortality

Despite the country's greater stability over the last couple of decades, poverty and health indicators still remain problematic issues. The Millennium Development Goals (MDGs) Report for Uganda 2010[3], showed slow progress in improving maternal health. In Uganda, approximately 16 women die each day due to childbirth. The Uganda Demographic and Health Survey 2005/2006 quoted a maternal mortality ratio (MMR) of 435 per 100 000 live births (however, these statistics are treated with caution regarding methodology). The MMR for 1995 and 2000/2001 was 527 and 505 respectively.[4] The MDGs 2015 aim is an MMR of 131. Most deaths occur in the more rural settings; often there is a delay in presentation to a health centre or hospital, and then further delays in reaching referral centres.[3,4] Maternal morbidity is significant, resulting from prolonged obstructed labour, including fistulas, as well as chronic pelvic infections, post abortion complications, and infertility. HIV rates are also high.

The 3-month OOPE

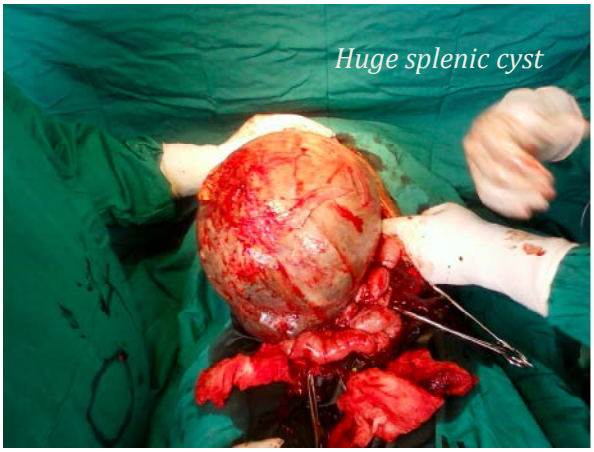
I was based in Mbarara Regional Referral Hospital, which is affiliated with the Mbarara University of Science and Technology and situated in southern Uganda. In addition to this, I was part of the team running the AAGBI's 'Safer Anaesthesia from Education (SAFE) obstetric anaesthesia course'. I later carried out course 'follow-up', which entailed travelling around Uganda to visit course candidates in their base hospitals, gaining feedback, assessing knowledge retention and evaluating changes in practice.

Mbarara Regional Referral Hospital (MRRH)


MRRH

This is a government regional referral hospital, and thus takes cases from many other districts. Patients often present late, and not infrequently in extremis. The reasons for this are multi-factorial. Patients may initially seek help from their local community and traditional healers, as well as facing access and transport issues. They can often travel significant distances to reach a health facility, with the possibility of then requiring further care at a separate referral unit. Cultural and financial factors are clearly influential. Frequently, women present in obstructed labour, with a high risk of uterine rupture and fistula development. One 60-year-old lady had a delayed presentation of a huge abdominal mass, presumed to be of ovarian origin, but which turned out to be an enormous splenic cyst.

Caesarean section turnaround was rapid, with a very short surgery time. I had to also adjust to the 'normal' multi-parity of many women- frequently 7-8, and often with very limited background information. Oxytocin, ergometrine and misoprostol were all available. The ICU proved essential for the survival of the massive haemorrhage and septic obstetric patients, especially with the limited staffing of the wards.


Huge splenic cyst

Although a bed capacity of 350 is quoted, this was clearly significantly exceeded. There were always extra 'beds' dotted around, and the attendants (usually family or close friends) were often found camping around the outbuildings. The capacity will be set to increase at the opening of the newly constructed, neighbouring hospital building. This will also house a new theatre complex and ICU.

Dr. Ttendo, supported by two other anaesthetic consultants, runs the anaesthetic department. In addition to the clinical work, he somehow manages to be in ten places at once, being involved in the university, hospital logistics, equipment supplies, conferences and various working parties. There are currently four anaesthetic trainees at various stages in their training. This year their numbers are increasing with the new term's intake. Alongside these physician practitioners are the non-physician anaesthetic officers. The hospital currently has two sets of theatres: the 'upper' general theatre block, with two operating rooms and the 'lower' theatre block, with two obstetric/gynaecology operating rooms. There is also a recently instated four-bedded ICU, occasionally stretching to five beds.

The theatres had varying degrees of more modern anaesthetic machines, with no Epstein Macintosh Oxford (EMO) ether inhaler or Oxford Miniature Vaporizer

(OMV) in sight. There was decent monitoring available, with two theatres even allowing end-tidal CO_2 measurements. We were reliant on oxygen cylinders as our only oxygen source, which therefore required extra vigilance for checking levels! Occasionally we had issues with cylinder supplies, which, when combined with the fact the obstetric theatres did not have an air supply, meant an even greater chance of reaching for an 'Ambu bag'.

Spinal anaesthesia was commonplace, including for paediatric cases and more sporting gynaecological procedures. Heavy bupivacaine was routinely available. Induction usually consisted of ketamine with suxamethonium, although thiopentone and atracurium were available. Maintenance was with halothane, with isoflurane for use in head injury patients. Antibiotic choice was limited (usually a cephalosporin, 'ampiclox' and gentamicin). Pethidine seemed to be the ubiquitous opiate on offer.

There was no official recovery, more of a holding area for trolleys outside the theatres. Here the patient awaited the arrival of a nurse and relative in order to return to the ward. This meant the patient had to be wardable from leaving the operating room- not always well timed by me on the halothane!

Clinical Experiences

There were a wide variety of cases, offering much trauma, general, paediatric and obstetric experience. Since the majority were urgent or emergency cases this often meant literally dealing with what turned up at the theatre doors, and adapting to ever-changing situations.

QuickTime™ and a
decompressor
are needed to see this picture.

A balance had to be struck between the feasibility of preoperative optimisation, with consideration of availability of resources, and simply getting on with the case in hand. I found it challenging to ensure that I delivered care to the best of my ability with the resources on offer, whilst remaining aware of what could be made available with appropriate persistence. Providing such care required being realistic about what could sensibly be achieved, whilst still challenging areas of care where necessary, not just accepting perceived limitations. Understanding the lack of post-operative resources and care was of utmost importance when deciding on the anaesthetic plan. As much as I was involved with teaching, I was equally there to learn from my colleagues in developing clinical skills and acumen in a different environment, with diverse pathology and without reliance on investigations.

Road traffic accidents (RTAs) were rife, causing many head and spinal injuries, burns and severe limb damage. These were frequently due to the boda-boda mopeds, which seem to be synonymous with every Ugandan town's street scene. Emergency laparotomies for obstructed and perforated viscera were frequent. It was also important to remain aware of potential concomitant infections and differentials such as malaria and HIV/HIV related infections.


Boda-bodas

There was a high paediatric caseload, often abdominal or limb related. Neonatal operations included those for gastroschisis, bladder extrophy and intussusception. A neonate's weight often had to be guessed, usually from the birth weight (if known) and from 'eyeballing' the patient. Doing neonatal cases, either on my own (and with no ODP) or whilst supervising and training the equivalent of an SHO, was a great experience. I have always greatly appreciated the presence of a brilliant ODP, and now even more so!

The physical results of domestic violence are frequently seen, and can be horrifically brutal. I saw a woman who had been hacked by a machete through the neck and limbs- miraculously her spine and major vessels were narrowly missed and she survived. Another lady suffered a fatal splenic injury, developing disseminated intravascular coagulation.

On ICU, organophosphate poisoning cases were extremely common; conversely, paracetamol overdoses were never seen. The ICU often had RTA and burns victim admissions, as well as obstetric patients who were often post-massive transfusion, or had severe puerperal sepsis.

Teaching & Other

The clinical exposure with the varied case mix was superb, but there was also much opportunity to be involved with teaching and management.

I developed a weekly interactive tutorial programme, incorporating teaching, presentations, journal reviews and short MCQ papers. I also helped run a teaching programme for the ICU nursing staff. Working abroad at this point in my training (ST6) provided invaluable experience in a supervisory role for trainees. Additionally, I was involved in the development of hospital and departmental pro formas and guidelines, as well as resident assessment tools.

The SAFE Obstetric Anaesthesia Course

The SAFE obstetric anaesthesia course, Uganda, was in its second year of running, and took place in Mulago Hospital, Kampala. The course is a joint venture between the AAGBI, the World Federation of Societies of Anaesthesiologists (WFSA) and the Uganda Society of Anaesthesia, and is aimed at anaesthetic providers throughout Uganda. It was a 3-day course, followed by a 1-day pulse oximetry/ WHO safe surgical checklist 'Lifebox' course, and run by anaesthetists from both Uganda and the UK.

The emphasis of the SAFE obstetric anaesthesia course is to identify and address issues relating to anaesthetic practice impacting on maternal and neonatal morbidity and mortality in resource poor countries. The course, therefore, aims to educate, empower and develop skills of anaesthetic providers. This is in support of the 2015 Millennium Development Goals, targeting both maternal health and neonatal mortality.

Near the end of my time away, I spent a couple of weeks travelling around Uganda, visiting 17 of the candidates on the course. This was to help assess the impact of

the course and gather evidence for changes in clinical practice through candidate interviews and logbook reviews, as well as assessing knowledge retention through multiple choice question papers. It was very encouraging to see how the course had changed approaches to patient care, leading to safer anaesthesia and, ultimately, hear examples of how this had literally saved lives. SAFE course attendees gained confidence in confronting issues influencing both maternal and neonatal mortality, whilst demonstrating improvements in knowledge and skills, with evidence of application of the principles taught.

Visiting the course attendees was an opportunity to gain insight and a perspective into the organisation of the more remote health care centres, where resources are scarce. In some places, basic supplies could be missing for weeks, impacting on the care provided- examples including a lack of ephedrine (or equivalent) and no spinal needles. Such centres often relied on oxygen concentrators and OMVs; sometimes only EMOs were present. Monitoring was an issue, which, before the recent donations of pulse oximeters from the 'Lifebox' project, relied solely on the use of manual sphygmomanometers. Everyone who had received a pulse oximeter was excited to tell me what a difference it had made to their practice, again with examples of cases where they felt the equipment had been life-saving.

And finally…

This has proved to be a great chance to live and work in a different environment, and in such a vibrant and friendly place. Uganda is a great country to visit and to travel around. To learn a little of the country's history, the politics and realities of life, and to hear people's life stories, has been a privilege. I am also more grateful for the NHS and the rigorous training and standards set by the RCOA.

Many thanks to my wonderful anaesthetic colleagues in Mbarara- for welcoming the mzungu girl, being fun to work with and *finally* drinking my coffee. Special gratitude is owed to Stephen Ttendo - for being an inspiration, working tirelessly, driving to make things better and making every patient count. I greatly appreciate the role of the AAGBI in making this possible, for their generous funding and providing the opportunity to be involved in such a great course. Thanks also to Kate Grady and Isabeau Walker, for providing the chance to be part of it all. And to the rest of the SAFE course members, with whom it was a pleasure to work.

Crater Lake, near Fort Portal

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