ANAESTHESIA Matt Wilson

Elective Report

Objectives:

What are the common surgical and anaesthetic emergencies in Tanzania?

Do these differ from the UK? if so, compare and contrast the conditions in developing and developed countries. [300]

n a general sense common anaesthetic emergencies can be very similar across both the UK
nd Tanzania. General challenges such as dealing with 'can't intubate, can't ventilate'
cenarios are met in both contexts. However, there are challenges specific to Tanzania
nd other developing countries which make such challenges potentially more common
nd more serious. With regard to airway challenges, the ability to have patients
ndergoing non-emergency elective surgery pre-assessed in an outpatient setting in the UK
llows early identification and highlighting of potential difficulties. This in turn allows
ppropriate planning and preparation of specialist equipment and personnel. In Tanzania you (100)
ight face problems of lack of pre-assessment, compounded by a lack of specialist airway
quipment e.g. intubating LMA, fibre-optic scope, jet ventilation (trans-tracheal) etc. Aside from airway
mergencies there may also be common problems with perioperative blood pressure management. Whilst
e general causes of a deranged BP are similar in both countries, in Tanzania there are the
dditional difficulties of lacking certain, more cardiostable agents for induction and the use of
der medications for maintaining haemodynamic stability. The lack of specialist monitoring
quipment such as pulse oximetry, capnography, temperature probes, nerve stimulators (ToF) etc
ay also mean problems encountered (200) are recognised later and therefore have the capacity
do more harm. In addition to absent / lacking equipment, equipment failure is a common
milarity across both the UK and Tanzania. I have witnessed power failures in both countries
d these are prevented / managed by the use of back-up generators. There are differences
owever in how equipment failures are managed. For example, in the UK there is a
ack-up anaesthetic machine usually always available due to separate machines being used for
duction and maintenance. Also attached to each machine will be back-up oxygen cylinders
apable of delivering oxygen via the same circuit (300) if there is a failure in wall supply
oxygen. These redundant systems are lacking in Tanzania due primarily to the general
ck of resources.

[325]

3/ How is anaesthesia and perioperative care delivered in Tanzania?

How does it differ from the UK? [300]

From my experiences within the Anaesthetic Department of Muhimbili Hospital it is clear that from department heads to doctors to nurse anaesthetists there is a clear desire to provide gold standard perioperative care and do the very best for the patient, in the main. However this desire is obviously tempered by limitations arising from an acute lack of resources, proper equipment and also for academic assessment and improvement. On a basic level the standard anaesthetic in Tanzania appears similar to the UK in that it addresses the mandatory triad of narcosis, muscle paralysis and analgesia. A standard GA in Tanzania (100) would be summarised as follows:

INDUCTION	Maintenance	EMERGENCE
1. Preoxygenation	6. Pethidine 100mg IV	10. Atropine +
2. Atropine 0·5mg IV	+	Neostigmine 1·2 + 2·5g
3. Sodium Thiopental 400mg IV	7. Halothane 1%	11. Suction, Extubation,
4. Suxamethonium 50mg IV	+	Oxygenation.
5. Intubation + Ventilation	8. Pancuronium 4 mg IV	
	+	
	9. O_2 6L/min.	

The obvious differences in practice here with respect to pharmacology include the use of "prophylactic" Atropine to counteract the anticipated Suxamethonium-induced bradycardia. The use of Sodium Thiopentone has largely been replaced with Propofol as an induction agent in the UK. This is due to a variety of reasons including the pharmacokinetics, a smoother onset and offset than barbituates (200) and less unpleasant 'hangover'. The difference is most noticable at the emergence of anaesthesia, Trio + Halothane takes a lot longer to clear the patient's system than the standard Propofol + Iso / Sevoflurane UK combination. On a more psychosocial level care in theatre seems to differ significantly from the UK. Patients are treated with less apparent care in terms of their feelings and emotions. There is much less explaining to the patient the anaesthetic process and consent for anaesthesia of any modality (GA/Local block/Spinal/Regional etc) is implied in the general surgical consent. Patients generally will not see the anaesthetist before they reach theatre (300) in Tanzania. In a practical sense there is currently no WHO safety checklist operating (a "time out" policy) and I was informed this has in the past resulted in mistaken operations being performed. Despite all these 'issues' I remain aware of the significant cultural differences

4/ Gain greater career experience in the anaesthetic sub specialties of obstetrics and paediatrics.

Reflect on the benefits experiencing healthcare in a developing country will have on my FY1 practice. [300]

As part of my anaesthetic rotation around Muhimbili Hospital I was able to spend time in both obstetric and paediatric theatres. Whilst observing doctors administer anaesthesia in these settings I have gained valuable experience which cannot fail to be of use in my future career. During my time in obstetrics I was confronted with challenging situations where patients required immediate intervention and reflecting on these experiences I believe will improve my future practice. I also had the opportunity to learn new practical skills such as administration of spinal anaesthesia (under supervision) and to practice my existing clinical skills in difficult (100) working conditions. E.g. I was able to monitor the patients vital observations without the standard anaesthetic monitoring equipment and respond to decreases in BP (with spinal anaesthesia) with appropriate fluid management. During my time in paediatric theatres I was able to observe and help the junior and senior anaesthetists in learning the use of laryngeal mask airways to deliver anaesthesia in children as these devices are new in Tanzania but common practice in the UK. My experiences in the Tanzanian healthcare system have been very beneficial to me already and will continue to be so throughout my Foundation training. Despite (200) not doing anaesthesia until FY2 I will be able to use the skills I have gained in communicating across a language barrier, dealing with different cultural ideas and expectations etc. everyday whilst at work. I have seen how Tanzanian doctors use their knowledge and clinical aptitude to compensate for and attempt to overcome problems with lack of resources, especially to do with perioperative monitoring. I have also observed how teams can operate in a very cohesive way even when the lines between different members of the MDT are blurred. E.g. how nurse anaesthetists interact with the doctors in a very (300) positive way, especially as they may often have the benefit of greater experience.

(313)

1309 words

which may contribute largely to the differences observed. (353)

/ Understand the impact of prevalent tropical diseases e.g. malaria on perioperative care.

[300]

ancania as a developing nation has many specific health challenges however the geography of ne country, it's proximity to the equator in particular affords an added problem of ndemic tropical diseases. One of the country's oldest health challenges has been the malaria arasite. Endemic to the country, treating patients with this disease is uniquely problematic n the theatre of perioperative care. Many infected patients may be undiagnosed and as uch may have undetected anaemia. Even known cases of anaemia picked up by pre-op testing have significant implications for perioperative haemodynamic management. Patients with severe malaria and accordingly severe anaemia are (100) at increased risk of developing associated problems ranging from simple resting tachycardia and tachypnoea to more severe heart failure and resultant pulmonary oedema. A low Hb has implications for oxygen-ation. A poor oxygen carrying capacity may result in tissue hypoxia if metabolic demands are increased during surgery, increasing possibilities of myocardial ischaemia or hypoxic brain njury. Chronic relapsing infection with the malaria parasite is also well known to cause nepatic dysfunction and failure. This has implications for metabolising of anaesthetic drugs as well as haemostatic control due to production of clotting factors. Another common condition not just confined to the (200) tropics is Rheumatic Fever. Sequelae include severe aortic and mitral (most commonly) valvular disease, early decompensation and heart failure. Overall these patients may have a poor cardiac reserve making them intolerant of cardiovascularly depressive anaesthetic agents and as such a higher risk of developing unstable arrhythmias and cardiac arrest during induction. Malnutrition is a common condition found in developing countries occupying the equator. These conditions (marasmus and kwash-iorkor) may also be caused tropical parasite infections. Malnutrition means on presenting for surgery the patient is already in a deteriorated condition. This has implications for the immediate post-operative period where risk of wound infection and sepsis increases, there is overall poor wound healing and overall complication rates are higher. (300)

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