

Methoxyflurane

Sir,

We read with interest the recent article by McLennan, which reviews the safety and efficacy of methoxyflurane and assesses its suitability to become the primary pre-hospital or battlefield analgesic [1], and we would like to make some comments.

Methoxyflurane or 2,2-dichloro-1,1-difluoroethyl methyl ether, has not been available in the UK, to maintain anaesthesia or provide analgesia for several decades, as its use is strongly associated with nephrotoxicity and deranged organ function.

There is no doubt that in sub-anaesthetic concentrations, inhaled methoxyflurane is an efficacious analgesic in the prehospital environment [2]. However, despite being widely used by ambulance services in Australia there are no published data as to its use pattern, efficacy and safety in the prehospital setting in adults. What is more worrying is that Australian ambulance personnel have experienced serious side-effects from exposure to methoxyflurane and can no longer administer it [3].

Since it has the potential to adversely affect the health and performance of individuals, we believe that exposing Defence Medical Services personnel in support of military operations, to methoxyflurane, represents unnecessary risk.

It is regrettable that the author was unable to provide recent references on the benefits of methoxyflurane as a pre-hospital analgesic for adults. We were disappointed that 75% of the references used by McLennan were pre-1984, and the only recent references from 2002 and 2005, were both on children.

The analgesic properties of methoxyflurane are not unique, and alternatives associated with reduced risk exist. We do not support re-introducing methoxyflurane and strongly believe that it should remain in the rest home for retired inhalational anaesthetic agents.

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Primary Blast Injury of the Eye

Sir,

We read with interest the article in last month's Journal entitled "Primary Blast Injuries to the Eye: A Review of the Evidence."

The features of the few cases of isolated primary blast injury

to the eye reported in the literature are similar to the cases that we deal with on a day-to-day basis at the Royal Centre for Defence Medicine. We have seen the following features: commotio retinae that rapidly resolves; retinal tears, which can lead to neurosensory detachment; corneal oedema from endothelial disruption (Caspar's rings); hyphaema from damage to the iris; recession of the irido-corneal angle; post-traumatic anterior uveitis, which is usually mild and transient; orbital floor blow-out fractures.

We published one such case in the same issue of this journal [1] and another case was treated in RCDM in August. This was a 19 year old soldier who was referred for ophthalmic assessment complaining of blurred vision in his left eye. He had sustained a number of injuries after a 2000 lb bomb exploded approximately 3 metres away from him. He jumped a short distance to the ground where he had a soft landing. He sustained partial thickness burns to his face and upper arms and suffered a brief loss of consciousness. He was not subject to secondary blast injury.

He sustained injuries to his left eye. His visual acuity in theatre was not recorded. At 4 days his visual acuity was recorded at 3/60 L eye and on assessment in clinic at 10 days his acuity was 6/9 L eye. His ocular injuries consisted of commotio retinae, which resolved rapidly, and an orbital floor and medial wall blow out fracture, which was successfully repaired to leave him asymptomatic with a visual acuity of 6/4 in both eyes at 2 months post injury.

The evidence of primary ocular blast injury was: 1. Given his close proximity to the blast any primary or secondary fragments could have been expected to cause severe penetrating injury. 2. No ocular or facial foreign bodies or penetrating injury were found after extensive imaging. 3. There was no evidence of tertiary blast injury, as he landed on his back in the open.

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Early Failure of External Fixation

Sir,

The experiences of external fixation with the Centrafix (Central Orthopaedics Ltd, High Wycombe, UK) and Hoffman II (Stryker) military external fixator of war injuries as reported in this journal by Clasper and Phillips [1] are very similar indeed to the problems reported from the Swedish Field Hospital in Saudi Arabia during the Gulf Conflict [2]. Here, the majority of patients treated were Iraqi soldiers and civilians who had their Ultra-X external fixation system (Howmedical/US Medical Corps) exchanged to the Swedish military external fixator (Hammer Fix System). The main reason for this exchange was redislocation of the fracture caused by instability following slippage of the connectors of the Ultra-X system. After the Gulf Conflict, and to a certain extent based on a preliminary report by Bosse et al [3] the American Food and Drug Agency (FDA) issued a Safety Alert [4] regarding the Ultra-x system.

These 3 different external fixation systems (Centrafix, Ultra-X and Hoffman II) are all based on a ball joint design with mechanical characteristics that need to be compensated for by the construction of complex external configurations which, even then, may not provide adequate stabilization of the fracture. In fact, one of the external configurations suggested for stabilization of a femoral shaft fracture shown in manufacturers publicity material for the Centrafix system was anatomically impossible but deemed necessary to increase stability of the frame. This particular configuration was a delta-frame with a straight rod laterally and a connecting rod from proximal/lateral to distal/medial passing just a few centimeters anterior to the femoral shaft which, in a patient would pass through the quadriceps muscle

Furthermore, an increased number of pins makes repeated debridement difficult and increases the risk of pin-tract related complications. This was a common observation by Clasper & Phillips [1]. Instability was probably the most important contributing factor besides multiple pin entrances. It is well documented that external fixation using appropriate equipment is probably the most efficient way for primary stabilization when the surgeon is confronted with a large number of severe limb injuries under combat conditions [5-9], and we should strive to use the most mechanically sound and clinically proven fixation systems available, especially under difficult conditions with a limited number of treatment alternatives.

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Hospex – A Valuable Training And Educational Opportunity

Sir,

Post-exercise reports for the Hospital Exercise (HOSPEX) held at Strensall commonly remark on the poor attendance of both junior and senior clinicians. The exercise is an opportunity for a deploying Field Hospital (FH) to gather its personnel and

exercise, in real time, the every day running of the hospital, from the clinical to the logistic. On the last HOSPEX with 243 FH, in a 36 hour period, numerous trauma calls, operations and ward scenarios were played out. All scenarios were exercised in “real-time”, with each casualty assigned a member of the training/BATLS team to maintain the flow of clinical information and each scenario was played out from admission to discharge. Casualties included non-English speaking Muslims and actors from “Amputees in Action” augmented by professional make-up artists to authentically recreate injuries.

The junior clinicians attending the exercise took part in a series of Emergency Department trauma calls, interpreted CT images and radiographs, performed or assisted a variety of operations including craniotomy, bowel resection and anastomosis and vascular repair, all performed on high grade animal preparations using the correct equipment. Ward rounds, crash calls, ITU patient care and MERT “shouts” in the new £15k Chinook simulator [1] were also exercised. The skills utilised included those gained on generic life support courses as well as basic surgical and critical care courses.

No UK course currently allows the hands-on practice of this range of critical care and surgical skills under direct consultant supervision. For junior doctors in training this is a valuable training opportunity which should not be missed, even when deployment is not imminent. In addition exercising a hospital without its clinicians devalues the whole enterprise.

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The Airtraq laryngoscope in severe ankylosing spondylitis

Sir

We read with interest the article by Tong [1] and agree that the Airtraq optical laryngoscope is easy to use and can provide a full indirect view of the glottis when traditional direct laryngoscopy has failed. We would like to report the successful use of the Airtraq as a rescue device following failed awake fiberoptic intubation in a patient with ankylosing spondylitis (AS).

A 48-yr-old male with a BMI of 32.5 and a long history of ankylosing spondylitis was admitted for elective nephrolithotomy. Physical examination revealed an immobile neck, head extension fixed at 150° and a Mallampati Class II airway. Lateral X-Ray confirmed widespread cervical ankylosis (Figure 1).

A regional anaesthetic technique was excluded due to patient choice, so an awake fiberoptic intubation was planned followed by general anaesthesia. An antisialogogue (atropine 500mcg) was given and small boluses of intravenous midazolam were titrated to response (2.5mg). Following a standard technique to topically anaesthetise the airway using lidocaine (100 mg), fiberoptic endoscopy was attempted but the intubation was unsuccessful due to mechanical failure of the endoscope. Anaesthesia was then induced using a bolus of propofol (1mg/kg) and an uncomplicated intubation (size 8.0mm endotracheal tube) was achieved using the Airtraq laryngoscope.

In experienced hands awake fiberoptic intubation is often the

best option for securing the airway in patients with difficult airways, e.g. ankylosing spondylitis [2] though the technique does have a low failure rate. Both the fibroscope and the airtraq laryngoscope can provide a full indirect view of the glottis without the need for anatomical alignment [3]. However, intubation proficiency with the Airtraq can be achieved quickly and it has a shorter learning curve than fiberoptic endoscopy. We believe that intubation using the Airtraq should be considered as an elective technique for managing patients with anticipated difficult airways.

Yours sincerely

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Figure 1 Lateral X-Ray shows widespread ankylosis.

The Airtraq – the ideal indirect device for the Defence Medical Services.

Sir,

I am grateful for the opportunity to reply to this correspondence [1] which reinforces an important message in the management of difficult intubation.

The ability to recognise clinical signs that can predict a difficult intubation is an essential component of the seven year specialty training in anaesthesia. All consultant anaesthetists are expected to be able to perform fiberoptic endoscopy and intubation. However, as with many advanced techniques it is not possible for every consultant to remain proficient unless they are routinely performing fiberoptic endoscopy. I entirely agree that the learning curve associated with intubation using the Airtraq is much shorter than for fiberoptic endoscopy, [1] but I also think that following appropriate training, maintaining these skills would be significantly easier with the Airtraq. I believe that the Airtraq could be used as the primary laryngoscope for managing difficult intubation by all who acknowledge that their fiberoptic endoscopy skills are poor or require updating.

It has been widely acknowledged that the availability of an indirect laryngoscope in Field Hospitals would be welcomed by clinicians, which could improve the delivery of expert care to our patients. [2] However, it appears that the process of selecting a single device for military use may not be straightforward. In a personal communication with a former Chairman of the Difficult Airway Society, [3] I asked him to select from the extensive list currently available, an indirect device for the Defence Medical Services. I was not surprised when he endorsed the Airtraq as the ideal device.

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