

ABSTRACTS

Intubating laryngeal mask airway for difficult out-of-hospital airway management: a prospective evaluation.

Timmermann A, Russo SG, Rosenblatt WH, Eich C, Barwing J, Roessler M, Graf BM.

BACKGROUND: Out-of-hospital airway management is a critical skill, demanding expert knowledge and experience. The intubating laryngeal mask airway (ILMA) is a ventilatory and intubating device which may be of value in this arena. We evaluated the ILMA for out-of-hospital management of the difficult airway. During the study period, 146 of 2513 patients underwent tracheal intubation or alternate rescue airway insertion. In 135 patients, laryngoscopy was performed and Cormack-Lehane view was recorded as grade I in 72 (53.3%), II in 45 (33.3%), III in 10 (7.4%), and IV in 8 (5.9%). EPs encountered 11 patients (7.5%) with difficult-to-manage airways. ILMA insertion and ventilation was possible in 10 patients in the first and one patient in the second attempt. ILMA-guided tracheal intubation was successful in all patients, in 10 after the first and in 1 after two attempts.

CONCLUSIONS: In this study, ventilation and intubation with ILMA was successful in all patients with difficult-to-manage airways. Our data support the use of the ILMA as rescue device for out-of-hospital airway management by staff who have appropriate airway skills and have received appropriate training. (*Br J Anaesth.* 2007 Jun 21)

Crystalloid infusion rate during fluid resuscitation from acute haemorrhage.

Tatara T, Tsunetoh T, Tashiro C.

Information is lacking concerning optimal infusion rates of crystalloid during resuscitation from acute haemorrhage. In this study, a mathematical model was used to predict infusion volume of crystalloid needed to restore and maintain blood volume after acute haemorrhage. Blood volume was restored earlier at high bolus infusion rates compared with low bolus infusion rates (6 min at 120 ml kg⁻¹ h⁻¹ vs 63 min at 40 ml kg⁻¹ h⁻¹). Fluid infusion rates for blood volume maintenance approached 33 ml kg⁻¹ h⁻¹ irrespective of bolus infusion rates. The restoration fluid volume at 40 ml kg⁻¹

h⁻¹ was 2.9 litre, three times that at 80-120 ml kg⁻¹ h⁻¹. The maintenance fluid volume at 80-120 ml kg⁻¹ h⁻¹ was 2.9 litre, 0.6 litre more than that at 40 ml kg⁻¹ h⁻¹. During the blood volume maintenance, the interstitial volume increased to 3.8 litre above normal at 40 ml kg⁻¹ h⁻¹ and to 2.5 litre at 80-120 ml kg⁻¹ h⁻¹.

CONCLUSIONS: Bolus crystalloid infusion exceeding 80 ml kg⁻¹ h⁻¹ may not increase effectiveness of fluid resuscitation. Crystalloid resuscitation for more than 2 h may be detrimental in view of an excessive net fluid retention. (*Br J Anaesth.* 2007 Jun 21)

Superficial or deep cervical plexus block for carotid endarterectomy: a systematic review of complications.

Pandit JJ, Satya-Krishna R, Gratton P.

Carotid endarterectomy is commonly conducted under regional (deep, superficial, intermediate, or combined) cervical plexus block, but it is not known if complication rates differ. We conducted a systematic review of published papers to assess the complication rate associated with superficial (or intermediate) and deep (or combined deep plus superficial/intermediate). We conclude that superficial/intermediate block is safer than any method that employs a deep injection. The higher rate of conversion to general anaesthesia with the deep/combined block may have been influenced by the higher incidence of direct complications, but may also suggest that the superficial/combined block provides better analgesia during surgery. (*Br J Anaesth.* 2007 Jun 18)

Effect of pulsed magnetic field therapy on pain reported by human volunteers in a laboratory model of acute pain.

Fernandez MI, Watson PJ, Rowbotham DJ.

Pulsed magnetic field therapy (PMFT) is a non-invasive, simple technique used extensively for the treatment of muscle pain. However, evidence to support its use from well-designed, clinical, or experimental studies is sparse. **RESULTS:** There were no significant differences in mean VAS pain scores between the two machines at any time. In addition, there were no significant differences with respect to mean (sem) maximum pain score [sham 60 (8),

active 63 (9) mm; $P=0.66$, 95% CI -18 to 12 mm] or AUCp [sham 463 (50), active 499 (90); $P=0.64$, 95% CI -201 to 129].

CONCLUSIONS: We conclude that, using the electromagnetic characteristics of the machine in this study, the PMFT had no effect on pain in our experimental model. More work is required to provide an evidence base in support of the use of this technique for pain. (*Br J Anaesth*. 2007 May 22)

Prolonged myotonia and dystonia after general anaesthesia in a patient taking gabapentin.

Allford MA.

This is the report of a 55-yr-old female who developed severe myotonia and dystonia after general anaesthesia. Before starting on gabapentin therapy for a neuropathic pain condition, she had undergone numerous uneventful general anaesthetics. Since receiving treatment with gabapentin, she has experienced severe movement disorders on emergence from each subsequent general anaesthetic. The events were unrelated to the choice of anaesthetic or anti-emetic. The most recent event that required a protracted stay in hospital after a day-case surgery is presented in detail, and the possible mechanisms to explain the interaction are discussed. (*Br J Anaesth*. 2007 May 18)

Bedside prediction of the central venous catheter insertion depth.

Ryu HG, Bahk JH, Kim JT, Lee JH.

The carina level has been shown to be near the pericardial reflection and can easily be identified as a landmark on a routine chest radiography. The purpose of this study was to reveal a simple method to predict the adequate central venous catheter (CVC) depth, hereby facilitating safe positioning of the CVC tip. The CVC was placed at a depth derived by adding the length between the needle insertion point and the clavicular notch and the vertical length between the clavicular notch and the carina on the chest radiograph. The distance between the CVC tip and the carina was measured on the postoperative chest radiograph. When CVCs are inserted to a depth derived by adding the length between the needle insertion point and the clavicular notch and the vertical length between the clavicular notch and the carina, the CVC tip can be reliably placed near the carina level. (*Br J Anaesth*. 2007 Feb;98(2):225-7.)

Reversal of rocuronium-induced (1.2 mg kg⁻¹) profound neuromuscular block by accidental high

dose of sugammadex (40 mg kg⁻¹).

Molina AL, de Boer HD, Klimek M, Heeringa M, Klein J.

Sugammadex is the first selective relaxant binding agent and reverses rocuronium-induced neuromuscular block. A case is reported in which a patient accidentally received a high dose of sugammadex (40 mg kg⁻¹) to reverse a rocuronium-induced (1.2 mg kg⁻¹) profound neuromuscular block. A fast and efficient recovery from profound neuromuscular block was achieved and no adverse events or other safety concerns were reported. (*Br J Anaesth*. 2007 May;98(5):624-7.)

A patient information booklet about anaesthesiology improves preoperative patient education.

Cheung A, Finegan BA, Torok-Both C, Donnelly-Warner N, Lujic J.

Preadmission clinics provide a limited timeframe in which patients can discuss the risks and benefits of various forms of anaesthesia. We hypothesized that the provision of a patient information booklet would clarify and reinforce salient perioperative topics related to anaesthesia. In Phase I, anaesthesiologists were surveyed to determine the key topics routinely discussed during a preadmission clinic visit. Subsequently, we developed an illustrated booklet highlighting some of the topics identified during the survey. In Phase II, the booklet was evaluated by a questionnaire designed to assess patient knowledge about perioperative issues. A simple, illustrated patient information booklet, when appropriately written and illustrated, is an effective means of standardizing the communication of the risks and benefits of anaesthesia in a preadmission clinic. A booklet with a focus on plain language usage and simple illustrations appears to be an advantageous educational tool even in culturally diverse populations. (*Can J Anaesth*. 2007 May;54(5):355-60)

Haloperidol is as effective as ondansetron for preventing postoperative nausea and vomiting.

Lee Y, Wang PK, Lai HY, Yang YL, Chu CC, Wang JJ.

Recent warnings regarding the safety of droperidol have limited use of this drug as an antiemetic. Haloperidol, a butyrophenone derivative similar to droperidol, has not been rigorously evaluated as an antiemetic. The aim of this study was to compare the prophylactic antiemetic efficacy of haloperidol vs ondansetron for the prevention of postoperative nausea and vomiting (PONV) after general anaesthesia. Haloperidol 2 mg iv given 30 min before the end of surgery is effective in preventing PONV, with efficacy comparable to ondansetron 4 mg iv for the first 24

hr after general anesthesia. (*Can J Anaesth.* 2007 May;54(5):349-54).

Epidural analgesia in cardiac surgery: an updated risk assessment.

Bracco D, Hemmerling T.

The objective of this report is to estimate the risks and their variability of a catheter-related epidural hematoma in cardiac surgery patients and to compare it with other anesthetic and medical procedures. Based on the present evidence, the risk of epidural hematoma in cardiac surgery is 1:12,000 (95% CI of 1:2100 to 1:68,000), which is comparable to the risk in the nonobstetrical population of 1:10,000 (95% CI 1:6700 to 1:14,900). The risk of epidural hematoma is comparable to the risk of receiving a wrong blood product or the yearly risk of having a fatal road accident in Western countries. The risk of a hematoma after epidural in cardiac surgery is comparable to other nonobstetrical surgical procedures. Its routine application in a controlled setting should be encouraged. (*Heart Surg Forum.* 2007;10(4):E334-7).

Comparison of caudal ketamine with or without bupivacaine in pediatric subumbilical surgery.

Nafiu OO, Kolawole IK, Salam RA, Elegbe EO.

In this prospective, randomized, double-blind study, we evaluated the perioperative analgesic efficacy of caudal ketamine with or without bupivacaine in 62 American Society of Anesthesiologists I-II children undergoing lower abdominal surgery. We conclude that ketamine can safely be used as an adjuvant to prolong the duration of caudal analgesia in this group of West African children. (*J Natl Med Assoc.* 2007 Jun;99(6):670-3).

Detection of intravascular epidural catheter placement: a review.

Bell DN, Leslie K.

Up to 10% of epidural catheters may be inserted into an epidural vessel, the majority of which will be recognised; however, a proportion (1% of all epidural catheters inserted) may not be identified as lying intravascularly. Opinions differ on the optimal method for identifying intravascular catheters and no perfect method exists. Some debate the need for a test of correct location, as a lack of specificity may mean that a proportion of correctly located catheters are withdrawn and resited. This review outlines the incidence and risk factors associated with intravascular placement and aims to evaluate the detection methods that have been described, in an attempt to answer the question: "What is the optimal way of

detecting intravascular placement of an epidural catheter?" (*Anaesth Intensive Care.* 2007 Jun;35(3):335-41).

The Prevalence of Postoperative Pain in a Cross-sectional Group of Patients After Day-case Surgery in a University Hospital.

Gramke HF, de Rijke JM, van Kleef M, Raps F, Kessels AG, Peters ML, Sommer M, Marcus MA.

Although a great variety of surgical procedures are performed on an ambulatory basis, little is known about postoperative pain experience at home after ambulatory surgery. Over a period of 4 months, 648 patients who underwent day-case surgery were included in our study. Data were collected with interviews and questionnaires. Pain intensity was measured using a visual analog scale (VAS) during 4 days after surgery. Side effects of anesthesia and analgesia techniques were also recorded. This study showed that an important number of patients still experience moderate to severe pain in the postoperative period after day-case surgery even after a 4-day period. Furthermore, the type of operation should be considered when planning postoperative analgesia for ambulatory surgery. (*Clin J Pain.* 2007 July/August;23(6):543-548).

Ultrasound-guided obturator nerve block: a preliminary report of a case series.

Helayel PE, da Conceição DB, Pavei P, Knaesel JA, de Oliveira Filho GR.

Obturator-nerve block improves analgesia for knee surgery. Traditional techniques rely on surface landmarks, which can be variable and result in excessive performance times and multiple needle passes. In 91% of cases, the obturator nerve was correctly identified on first attempt within 30 +/- 23 seconds, as a hyperechoic flat or lip-shaped structure with internal hypoechoic dots. These preliminary data suggest that ultrasound-guided obturator-nerve identification and block are technically easy and highly successful. (*Reg Anesth Pain Med.* 2007 May-Jun;32(3):221-6).

Prevention of nausea and vomiting with ramosetron after total hip replacement.

Fujii Y, Tanaka H.

The purpose of this study was to evaluate the efficacy and safety of ramosetron, a serotonin 5-HT(3) receptor antagonist, for the prevention of nausea and vomiting after total hip replacement. Patients received in a randomised, double-blind manner intravenously

administered placebo or ramosetron in three different doses (0.15, 0.3 or 0.6mg) at the completion of surgery. Prophylactic antiemetic therapy with ramosetron 0.3mg is efficacious against postoperative nausea and vomiting 0 to 24 hours after anaesthesia in patients undergoing total hip replacement. Increasing the dose to 0.6mg provided no further benefit. (*Clin Drug Investig.* 2003;23(6):405-9).

Walking epidurals: mobilisation during neuraxial labour analgesia

Schneider MC.

Neuraxial anaesthesia offers the most effective form of obstetric pain relief and is superior to other methods of analgesia, and it does not increase the risk of caesarean section. In daily practice, various techniques are used including the options of patient-controlled epidural analgesia (PCEA) and combined spinal epidural analgesia (CSEA). Risk information is one of the prerequisites for 'informed consent'. Omitting the epidural test dose and using low-dose local anaesthetics with lipophilic opioids enhances early mobilisation. (*Anesthesiol Intensivmed Notfallmed Schmerzther.* 2007 May;42(5):352-9).

The role of the anesthesiologist in fast-track surgery: from multimodal analgesia to perioperative medical care.

White PF, Kehlet H, Neal JM, Schrickler T, Carr DB, Carli F; Fast-Track Surgery Study Group.

Fast-track surgery represents a multidisciplinary approach to improving perioperative efficiency by facilitating recovery after both minor (i.e., outpatient) and major (inpatient) surgery procedures. Anesthesiologists as perioperative physicians play a key role in fast-track surgery through their choice of preoperative medication, anesthetics and techniques, use of prophylactic drugs to minimize side effects (e.g., pain, nausea and vomiting, dizziness), as well as the administration of adjunctive drugs to maintain major organ system function during and after surgery. The decisions of the anesthesiologist as a key perioperative physician are of critical importance to the surgical care team in developing a successful fast-track surgery program. (*Anesth Analg.* 2007 Jun;104(6):1380-96)

Post-thoracotomy analgesia--comparison epidural fentanyl to intravenous pethidine.

Movafegh A, Ghafouri A, Nasr-Esfahani M, Gholamrezanezhad A, Madhkhan S.

To evaluate the efficacy of postthoracotomy analgesia with intermittent epidural fentanyl. The analgesic effect of intermittent epidural fentanyl is not adequate and postoperative pain relief has not any

significant advantage over the more easily-applied intravenous analgesia. However, better preservation of ventilatory function makes epidural fentanyl a useful adjunct analgesia in reduction of post-thoracotomy pulmonary complications. (*Middle East J Anesthesiol.* 2007 Feb;19(1):111-22)

Combined spinal-epidural analgesia in labor--comparison of sufentanil vs tramadol.

Frikha N, Ellachtar M, Mebazaa MS, Ben Ammar MS.

The purpose of this study is to compare tramadol and sufentanil used in CSE analgesia in terms of duration of analgesia and frequency of adverse maternal or fetal effects. Patients receiving 25 mg intrathecal tramadol with 2.5 mg bupivacaine had significantly longer-lasting analgesia (114 +/- 7 min). than those receiving 2.5 mg intrathecal sufentanil and 2.5 mg bupivacaine (54 +/- 11 min). No adverse maternal or fetal effects were noted in the group sufentanil. Five parturients of the tramadol group, presented vomiting 10 min after induction. There was no difference in the time from analgesia to delivery, incidence of operative or assisted delivery or cervical dilation. During labor, maternal satisfaction was good. 2.5 micrograms of intrathecal sufentanil combined with 2.5 mg bupivacaine provides rapid-onset and profound analgesia during the first stage of labor without adverse maternal or fetal effects. 25 mg intrathecal tramadol with 2.5 mg bupivacaine had longer-lasting analgesia. The major side effect was vomiting. (*Middle East J Anesthesiol.* 2007 Feb;19(1):87-96)

The elderly patient and postoperative pain treatment. Aubrun F, Marmion F.

Older patients have co-existing diseases and concurrent medications, diminished functional status and physiological reserve and age-related pharmacodynamic and pharmacokinetic changes. The elderly are also at higher risk of adverse consequences from surgery and unrelieved or undertreated pain. Selection of analgesic therapy needs to balance the potential efficacy with the incidence of interactions, complications or side effects in the post-operative period. Drug titration in the post-anaesthesia care unit should be encouraged together with analgesia on request in the wards. Multimodal analgesia, using acetaminophen, non-steroidal anti-inflammatory drugs or other non opioid drugs, is the best way to decrease opioid consumption and thus opioid-related adverse events. Sophisticated analgesic methods like PCA, regional analgesia and PCEA are not contraindicated in the elderly but pain relief and side effects should be monitored. (*Best Pract Res Clin Anaesthesiol.* 2007 Mar;21(1):109-27)