Efficacy of epidural steroid injections for management of symptomatic herniated lumbar disc

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Introduction: Low-back and radicular pain is a common clinical presentation of herniated lumbar disc. This is the most common presenting complaint of the young adults in orthopaedic clinic. The incidence of low back pain is high in our part of the world. The reason may be hilly terrain, difficult working and living environment. The initial treatment of low back pain is conservative. Epidural steroid injection is being slowly established as a reliable mode of minimally invasive treatment modalities in many orthopaedic centres of the world. This is a preliminary report of on-going study of the use of epidural steroid for the management of low back pain cases coming to the Nepal orthopaedic hospital.

Objective: To assess the efficacy of epidural steroid injection for symptomatic herniated lumbar disc in Nepalese population.

Methods: This is a prospective study, carried out on the patients presenting with the complain of low back and radicular pain due to herniated disc not responding to other modes of conservative treatment. This study was done in the Nepal Orthopaedic Hospital, Kathmandu from January 2009 to July 2010. All the patients of herniated lumbar disc were proven by Magnetic Resonance Imaging (MRI). Injection Methyl prednisolone 80 mg (Depo-Medrol) and 2 ml of 0.5% bupivacaine (Sensorcaine) was diluted in 8 ml of normal saline and injected into the affected lumbar epidural space. The functional status of the patient and the severity of pain were evaluated before injection and after injection during the follow-up period after one week, one month and at six months by using Ostrey disability index and VAS score.

Results: Sixty two patients received the epidural steroid injections, but only fifty patients came for regular follow up till six months. Among the fifty patients, 26 were male and 24 were female. The commonest level of affected herniated lumbar disc was L4-5 (30%) followed by L5-S1 (22%) in single level but in multi level L4-5, L5-S1 (30%) was commonest level. The functional status and pain response of the patients were improved significantly during all the follow-up periods as compared with the baseline (p < 0.001). Four patients, who did not improve back pain even with two dose of ESI, underwent surgery. Most common complaint of patients after injection was pain at the injection site (5%). No major complications were encountered.

Conclusion: The epidural steroid injection is a simple, safe, effective and minimally invasive modality for management of symptomatic herniated discs.

References
Introduction: Patients undergoing vitrectomy or scleral buckle routinely receive pre-oxygenation with nasal cannula and IV propofol during retrobulbar block. Brief and deep sedation is often required to avoid patient movement during injection of local anesthetics. However, it may cause respiratory depression and/or airway obstruction, especially in elderly patients with severe cardiopulmonary diseases. A simple plastic sheet has been shown to improve oxygenation by transforming nasal cannula to a simple face tent (TSE “Mask”) in deeply sedated patients during upper GI endoscopy in a prospective study1.

Objectives: This technique has been used in the Eye Room and the Block Room. We examined its effectiveness in improving oxygenation and preventing severe desaturation in elderly patients during retrobulbar block.

Methods: This retrospective review of elderly patients (>70 years old) who underwent vitrectomy or scleral buckle identified 2 groups. Group 1 (NC, n=41) received only nasal cannula O2. Group 2 (TM, n=52) received nasal cannula O2 and a TSE “Mask” using a NC plastic bag to cover patient’s nose and mouth1-3. It was removed prior to sterile preparation to avoid causing possible airway obstruction or suffocation during the case. Patients received nasal cannula O2 (3-5 l/min or higher as needed) and IV propofol. The bag-mask assisted ventilation was used as a rescue measure to improve oxygenation. Student t-test and Chi Square test were used for analysis. A p value <0.05 was considered as significant. (Mean±S.D.)

Results: There were no differences in age (NC: 78±6 years; TM: 79±5 years), BMI (NC: 25.9±4.0; TM: 28.2±5.5), ASA Physical Status Classification (NC: 2.4±0.6; TM: 2.4±0.6), room air (RA) O2 Sat (NC: 98±2%; TM: 98±2%), propofol dose (1.04±0.30 mg/kg; TM: 1.15±0.25), ETCO2 (NC: 31±5 mm Hg; TM: 31±7), inhaled CO2 (NC: 2±2 mm Hg; TM: 6±1), ETCO2 (NC: 31±5 mm Hg; TM: 31±7), propofol dose (1.04±0.30 mg/kg; TM: 1.15±0.25), ETCO2 (NC: 31±5 mm Hg; TM: 31±7), inhaled CO2 (NC: 2±2 mm Hg; TM: 6±1) and bag-mask ventilation (NC: 4/41; TM: 1/52). There were significant differences in the highest O2 flow rate (NC: 5.5±2.5 l/min; TM: 4.2±0.8 l/min, p < 0.0005), FiO2 (NC: 0.32±0.15; TM: 0.57±0.15, p < 0.0001), O2 Sat after 5 min pre-oxygenation (NC: 98±2%; TM: 100±0%, p < 0.001), the lowest O2 Sat (NC: 92±6%; TM: 98±4%, p < 0.0001) and severe desaturation (O2 Sat <T85%) (NC: 7/41; TM: 1/52, p < 0.01).

Discussion: Data show that pre-oxygenation with a TSE “Mask” prior to deep propofol sedation for retrobulbar block improves oxygenation and reduces severe desaturation in elderly patients. It increases O2 delivery without raising O2 flow.

Conclusion: This face tent takes only a few seconds to prepare and may improve patient safety at no additional healthcare cost. It also may reduce procedure interruptions and should be routinely used for pre-oxygenation prior to sedation during retrobulbar block.

Reference

Paper No: 85.00

Anaesthesia for paediatric day case tonsillectomy ‘a gold standard protocol’

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Introduction: ENT surgery accounts for over 30% of operative procedures performed on children, and the majority of this workload is routine elective ambulatory surgery carried out in general hospitals. Post-operative nausea and vomiting (PONV) is the most common symptom delaying day case discharge, reported to occur in up to 30% of children following ENT surgery, resulting in delayed discharge and readmission to hospital. Both early PONV ( < six hours post-op) and pain are independent variables contributing to delayed recovery after day case paediatric ENT surgery. [1]

Objectives: To validate the performance and reliability of ‘Epsom Protocol’ for effective reduction of PONV.

Methods: We audited the protocol in a prospective clinical study with a cohort of 100 children admitted electively for planned day-case discharge within six hours, following tonsillectomy with or without adenoidectomy.

Results: No PONV was recorded in 95% of children on the day of operation and no discharges were delayed. The nursing record was incomplete in five children and no assessment of PONV status could be made. In our study 100% of the children were discharged home within 6 - 8 hours of surgery, with the predominant variable being absence of PONV using the Epsom Protocol. Parental satisfaction of over 94% was recorded from the parents of these children. [2]

Conclusions. Where the routine use of antiemetic has been adopted, but the use of opiate analgesia and nitrous oxide anaesthesia continued, a modest improvement in PONV has been achieved, (from 27% to 11%), but not reached the low level observed in out audit of the Epsom Protocol. [3] We would like to share this audit, including pictures following a paediatric patient from admission, through surgery and discharge to illustrate ‘how we do it’.

References
The effects of different insufflation pressures on liver functions assessed with limon on patients undergoing laparoscopic cholecystectomy

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Introduction: Laparoscopic cholecystectomy has been accepted as an alternative to laparotomy but there is still controversy regarding the effects of pneumoperitoneum on splanchnic and hepatic perfusion(1). Objective: We assessed the effects of different insufflation pressures on liver functions by using indocyanine green elimination tests (ICG-PDR). Methods: We analyzed 43 patients who were scheduled for laparoscopic cholecystectomy. The patients were randomly allocated to two groups, 10 mmHg pressure pneumoperitoneum (Group I) and 14 mmHg pressure pneumoperitoneum (Group II). The ICG-PDR measurements were made after induction (ICG-PDR 1) and after the end of the operation (ICG-PDR 2). Serum aspartate aminotransferase (AST), alanine aminotransferase (ALT) and total bilirubin (AST and ALT) levels were all recorded preoperatively, 1 hour and 24 hours after surgery.

Results: The ICG-PDR 1 values for group I and II were as follows, 26.78 ± 4.2% per min vs. 26.01 ± 2.4% per min (p > 0.05). ICG-PDR 2 values were found 25.63 ± 2.1% per min in group I vs. 19.06 ± 2.2% per min in group II (p < 0.001). There was statistically significant decrease between baseline and postoperative ICG-PDR values in group II compared to Group I (p < 0.001). Postoperative 1st hour serum AST and ALT levels increased in group II (p > 0.05). No statistically difference were detected on postoperative 24st hour serum AST and ALT levels and serum bilirubin between groups (p > 0.05).

Conclusion: These results demonstrated that 14 mmHg pressure pneumoperitoneum decreased the liver blood flow end of the operation, increased on postoperative 1st hour serum AST and ALT levels. We think that 10 mmHg pressure pneumoperitoneum is superior to 14 mmHg. pressure pneumoperitoneum in laparoscopic cholecystectomy.

Reference
Objectives: The aim of this study was to determine the BIS values can serve as a useful objective tool to guide the sedation state, airway and hemodynamic management in the safe and effective titration of TCI propofol in a deep sedation for special patients in outpatient setting.

Conclusions. The BIS values can serve as a useful objective tool to guide the sedation state, airway and hemodynamic management in the safe and effective titration of TCI propofol in a deep sedation for special patients in outpatient setting.

References

Paper No: 196.00

Safety protocol for administering propofol hypnosedation in ambulatory practice
Andrey Lopatin, Mariya Muravyeva, Mariya Germanovich, Irina Khapiy and Andrey Chudaev

Introduction: Hypnosedation is widely used in general clinical practice. However, hypnotics used and anesthetics can also cause serious side effects that limit the usefulness of hypnosedation in ambulatory practice. Propofol is short-acting intravenous sedative-hypnotic agent with some unwanted side effects such as respiratory depression and decrease of blood pressure which limit its usefulness in ambulatory practice.

Objectives: The aim of this study was to determine the optimal protocol for propofol hypnosedation in ambulatory practice.

Methods: A total of 88 healthy patients (47 males and 41 females, ages 20-62 years) were enrolled in the study of Diprivan hypnosedation. We performed 172 sessions of hypnosedation; 1-12 sessions/patient. 1% solution of propofol was diluted 1:4 with 0.9% sodium chloride (2.5 mg/ml), and all patients received a test IV dose of 2.5-5 mg. The infusion rate at the beginning was 80 ± 15 g/kg/hr until the desired level of sedation was achieved in 3-15 min (Ramsay scale of 3). The maintenance dose was 50 ± 15 g/kg/hr, and the average duration of sedation was 45 ± 15 min. Respiratory rate and the depth of breathing, blood pressure measurement, pulse rate, oxyhemoglobin saturation and pulse oximetry curve were monitored continuously and the infusion rates were adjusted accordingly.

Infusion was stopped 3 ± 1.5 min prior to the end of the session.

Results: Target-controlled infusion rate of low dose propofol achieved a desired level of sedation without adverse cardiac and respiratory effects. A decrease in heart rate of 10 ± 5% (p < 0.05) was observed during the first session of hypnosedation in 28 patients (16.3%). During the following sessions the decrease of heart rate was 5 ± 2% (p > 0.05). Respiratory rate decreased by 3 ± 1.5 (p > 0.05) breath per minute in 8.7% of cases. However, the level of hemoglobin saturation did not fall below 96% (mean 99 ± 1.5%, p > 0.05). Blood pressure was 10 ± 3.5 mmHg (p > 0.05) below the baseline level at the end of sedation in 60% of cases. Complete return to consciousness occurred after 1-3 min after stopping propofol infusion in 100% of cases. Conclusions. Designed protocol for propofol administration using low dose drug concentration and target controlled infusion rate with monitoring of respiratory rate, heart rate, and pulse oximetry allows adequate level of sedation to be achieved and maintained during the entire procedure with minimal risk of complications. This protocol allows complete return to the baseline level of consciousness 1-3 min after infusion of propofol is stopped. This protocol for propofol administration by continuous infusion meets safety requirements for using it in the ambulatory practice.

Paper No: 210.00

Oxygen supplementation for propofol-based deep sedation for colonoscopy: a comparison between nasal cannula and face mask
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Introduction and Objective: During deep sedation, oxygen supplementation is an essential role to prevent arterial desaturation. Many types of oxygen devices are available. The objective of the study was to evaluate and compare the complication rate of propofol-based deep sedation (PBDS) for colonoscopic procedure in patients with oxygen supplement with nasal cannula and face mask during the procedure in a tertiary care hospital in Thailand.

Methods: A total of 202 patients underwent colonoscopic procedures by using PBDS in Siriraj Hospital from September 2008 to August 2009. The primary outcome variable of the study was the serious complication rate during and immediately after procedure. The secondary outcome variables were minor complications during and immediately after procedure, and mortality rate.
Results: After matching age, weight, body mass index, ASA physical status and the indications of procedure, there were 98 colonoscopic procedures in nasal cannula group (N) and 104 procedures in face mask group (M). In group N, there were 38 male and 60 female and mean age was 51.1 (9.1) years old. In group M, there were 35 male and 69 female and mean age was 51.7 (9.1) years old. All sedation was given by residents or anesthetic nurses directly supervised by staff anesthesiologist in the endoscopy room. There were no significant differences in patients’ characteristics, sedation time, indication, complications, anesthetic personnel and mortality rate between the two groups. The most common complication in both groups was hypotension (25.5% and 22.1% in group N and M, p = 0.571). Procedure related complication was none.

Conclusions. The complication rate during oxygen supplementation with nasal cannula and face mask for PBDS for colonoscopic procedure was comparable. Although, the complication rate in both groups was relatively high, all complications were easily treated, with no adverse sequelae.

Paper No: 212.00

Adverse events of unsedated esophagogastroduodenoscopy in sick patients: the impact of topical pharyngeal anesthesia

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Introduction and Objective: Pharyngeal anesthesia by using topical lidocaine is generally used as pretreatment for unsedated esophagogastroduodenoscopy (UEGD). The effectiveness of lidocaine viscous compared with lidocaine spray has not been reported in the medical literature. The aim of this study was to compare and evaluate the minor adverse events of topical lidocaine for pharyngeal anesthesia when the topical lidocaine is used as a single agent for unsedated esophagogastroduodenoscopy (UEGD) between sick and non-sick patients.

Methods: Retrospectively analyzed the patients on whom UEGD procedure had been performed during the period of December, 2007 to April, 2009 in Siriraj Hospital. Patients were categorized into two groups. Group A was the patients who had ASA physical status I, II. Group B was the patients who had ASA physical status III, IV. The primary outcome variable was the adverse event rate. The secondary outcome variables were anesthesia and procedure related complications, and mortality rate.

Results: There were 1,398 patients who underwent UEGD during the study period. After matching gender, duration of procedure and indications of endoscopy, there were 422 patients in group A and 418 patients in group B. All anesthesia was given by residents or anesthetic nurses directly supervised by staff anesthesiologist in the endoscopy room. There were no significant differences in gender, weight, height, duration of procedure, indications of procedure, and overall adverse rate as well as anesthesia and procedure related complications between the two groups. Mean age in group B was significantly higher than in group A. All complications were comparable, easily treated, with no adverse sequelae.

Conclusions. Topical lidocaine for pharyngeal anesthesia in sick and non-sick patients provided effective and safe for UEGD procedure. All adverse events in both groups were comparable, mild degree and easily treat. No serious adverse events were observed.

Paper No: 243.00

Comparison of low volume ventilation, no ventilation and continuous positive airway pressure during cardiopulmonary bypass on immediate postoperative outcome

Sandeep Kumar Kar, Chaitali Sen, Kakali Ghosh and Anupam G. Oswami

Background: Pulmonary function is subnormal in almost all valvular and congenital heart diseases preoperatively. Total CPB shunts majority of blood flow away from the pulmonary arterial tree. So, during weaning from CPB, reperfusion injury occurs to lungs causing delayed extubation time and prolonged ICU and hospital stay. Aim of our study was to investigate the impact of low volume ventilation, no ventilation and continuous positive airway pressure during cardiopulmonary bypass (CPB) on oxygenation in patients during cardiac surgery and post operative respiratory function after open heart surgery.

Method: It was a prospective, randomized clinical trial. Forty five (n = 15) patients aged 18 years to 65 years, undergoing elective valve replacement were randomly selected for our study. Patients were randomized to receive either no ventilation (group I) or only low volume normal frequency ventilation (Group II) or continuous positive airway pressure of 5 mmHg (group III) during cardiopulmonary bypass. The group II patients were ventilated with a tidal volume of 2 ml / kg body weight and same respiratory rate as before going on CPB. These patients were ventilated with 100% oxygen during CPB.

Results: There were no significant differences in PaO2 and PCO2 values among the 3 groups after intubation, after going on CPB, on CPB, after cross clamp, after removal of aortic cross clamp, after coming off CPB, after shifting the patient to recovery. These patients who received low volume ventilation during CPB significantly better inspiratory capacity than group I or III during immediate post extubation period. Duration of ventilation, ICU stay and hospital...
stay were also significantly lower in group receiving low volume ventilation than the other two groups.

**Conclusion:** Low volume normal frequency ventilation during CPB did not affect immediate oxygenation but decreases duration of ventilation.

**References**

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**Paper No: 257.00**

**Videolaryngoscopy in paediatric difficult airway management in South Africa**

Lara Nienaber

**Summary.** Video laryngoscopes found in South Africa as well as interesting paediatric cases where video laryngoscopy was utilised in Steve Biko Academic Hospital, Pretoria are highlighted.

**Objective:** To show that the visualisation of the vocal cords is far superior with videolaryngoscopy in very small babies and therefore should enhance visualisation in difficult paediatric airways

**Introduction:** Video laryngoscopy results in a better view than obtained through direct laryngoscopy and the quality is of high resolution. This results in the overall increasing appeal of video laryngoscopy and illustrates why it has positioned itself part of difficult paediatric airway management. A better, more anterior view of the larynx may reduce neck movement during intubation of children with c-spine injuries and be of more value in this area.

**Methods:** Video laryngoscopes discussed include: a) Airtraq b) two types of glidescopes (GVL with reusable blades, AVL with disposable stats), c) Storz Telepack and C-mac with Miller and Macintosh blades.

Indications, limitations and advantages of each apparatus are highlighted as well as interesting case subjects including intubations in very small (1,1kg) babies and anatomical malformations affecting the airway management such as cleft palate.

All patients were induced with a sevoflurane inhalation induction, an intravenous line was placed, an opioid and propofol bolus was given after which intubation commenced.

**Results:** Videos /pictures with corresponding glottic view:

- a. Airtraq 1,8kg 5days duodenal atresia
- b. AVL glidescope 1,9kg 6days feeding gastrostomy
- c. AVL 1,1kg 1week jejunal atresia
- d. GVL glidescope 3yr 20kg
- e. GVL 14 months 15kg facial burns
- f. 3,5kg holoprocencephaly Glidescope reusable blade
- g. GVL 2 blade 3 week 2,5kg epiglottic uploading
- h. C-MAC Macintosh 2 blade 3,5kg cleft palate
- i. C-MAC Miller 1 blade 18month cleft palate

Although these new VLs may appear to require increased time to achieve intubation, the increased time does not appear to be clinically significant.

**Video / Picture:** Shikan optical stylet 3 year haemangioma

At Steve Biko Hospital more than 130 children and infants were intubated with the reusable GlideScope with one failure (1/130) in a 2 day old 3,6 kg infant with cystic hygroma of approximately 1 kg; who was only intubated successfully with a straight Miller laryngoscope blade (Macintosh laryngoscope blade also failed).

**Conclusions.** The presentation is a practical illustration of difficult paediatric airway management in South Africa. By providing a superior shared view of the glottis video laryngoscopy and other airway tools illustrated have a definite place in paediatric difficult airway management.

**References**


**Paper No: 320.00**

**Contribution of bispectral index (bis) monitoring to determination of sedation depth in patients undergoing cardioversion**

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**Introduction:** Atrial fibrillation (AF) is the most common arrhythmia in the elderly. DC cardioversion (CV) is recommended in order to provide sinus rhythm. The procedure should be conducted under deep sedation or general anesthesia. Sedation in electrical cardioversion has some characteristics due to its short and painful procedure. These patients are prone to hemodynamic instability because of
The aim of this study was to determine the depth of anesthesia in the presence of an experienced anesthesiologist in converting atrial fibrillation to sinus rhythm with cardioversion. The study shows that carbon dioxide PP with post PP in three study groups, p = 0.05. In the control group, p = 0.05. The blood glucose level failed to demonstrate its statistical significance as a stress marker pre and post PP. In the other hand gabapentin appeared to check the release of cortisol when compared to clonidine.

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In-group comparisons * means statistically significant (p < 0.05)

Results: No statistically significant difference was detected between the groups in terms of induction time, anesthetic need, respiratory depression, and systolic, diastolic and mean blood pressures and BIS values (p > 0.05). In the in-group comparison, systolic, diastolic and the mean blood pressures rose with cardioversion in both groups and increased to pre-sedation values (Table). In both groups, two patients perceived pain and two patients perceived the procedure. Table . Hemodynamic and BIS Data

Conclusion: BIS monitoring did not have an additional contribution to the determination of drug administration and depth of anesthesia in the presence of an experienced anesthesiologist in converting atrial fibrillation to sinus rhythm with cardioversion.

References

Paper No: 365.00

Study of haemodynamic and endocrine stress responses following carbondioxide pneumoperitonium during laparoscopic cholecystectomy in patients premedicated with Clonidine, Gabapentin or Placebo

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Introduction: Pneumoperitonium (PP) is associated with haemodynamic alteration associated with release of stress hormones upon peritoneal gas insufflation. Objectives: The aim of the study is to investigate effect of oral gabapentin or clonidine versus placebo premedication on haemodynamic and cortisol responses after creation of PP in patients of American society of anesthesiology (ASA) physical status I and II undergoing laparoscopic cholecystectomy. Methodology: This was a randomized prospective double-blinded comparative study of 75 ASA I and II patients with three groups: clonidine, gabapentin and control group having 25 patients in each. They were randomly allocated to receive 600 mg oral gabapentin or clonidine 150 mcg one hour prior to induction of anesthesia and a control group. Hemodynamic parameters were recorded before PP and every 5 minutes till 35 minutes of post PP. Blood samples for serum glucose and cortisol were collected before PP and 10 mins after PP.

Result: With similar Demographic profiles and baseline haemodynamics in three groups (p > 0.05) significant rise in haemodynamic parameters were observed in control group at different time points before and following PP where as those parameters remained consistently stable in gabapentin and clonidine group (p < 0.05). The serum cortisol measured at 10th minute after PP was significantly higher in control group than that in clonidine or gabapentin group, p < 0.05. The blood glucose level failed to demonstrate its statistical significance as a stress marker pre and post PP in three study groups, p > 0.05.

Discussion: This study shows that carbon dioxide PP with intraabdominal pressure of 12 mm of Hg causes significant haemodynamic alteration and rise in serum cortisol in patients when no stress attenuating anaesthetic adjuncts is administered. On the other hand gabapentin appeared to check the release of cortisol when compared to clonidine.
Methods: Retrospective review of patients who underwent various surgical procedures (breast biopsy, AV fistula, hernia repair etc) identified 2 groups. Group 1 (NC) received NC O2. Group 2 (FT) received NC O2 and a fluid-shield surgical mask(3–4). Patients received NC O2 (3–5 l/min or higher) and IV propofol. Data collected included O2 Sat, FiO2 and O2 under surgical drapes. Student’s t-test and Chi Square test were used. A p value < 0.05 was considered as significant. (Mean±S.D.)

Results: Among patients who underwent short procedures (<30 min), there were no differences in age (NC: 49±21 yrs; FT: 50±19), BMI (NC: 26.0±4.4; FT: 28.2±6.4), ASA Physical Status (ASA) (NC: 2.1±0.7; FT: 2.1±0.8), baseline O2 Sat (NC: 99±1%; FT: 98±2%), duration (NC: 22±6 min; FT: 21±7) and propofol dosage (NC: 165±93 mcg/kg/min; FT: 203±96). There were significant differences in O2 flow (NC: 5.4±2.1 l/min; FT: 4.5±1.0), lowest O2 Sat (NC: 93±1%; FT: 98±3%) and severe desaturation (O2 Sat £ 85%) (NC: 5/17; FT: 1/37), bag-mask ventilation (NC: 2/17; FT: 0/37), FiO2 (NC: 0.32±0.08; FT: 0.61±0.22) and O2 under surgical drapes (NC: 0.42±0.14; FT: 0.21±0.0). Among patients who underwent lengthy procedures (>30 min), there were no differences in age (NC: 54±12 yrs; FT: 54±15), ASA (NC: 2.2±0.9; FT: 2.1±0.7), BMI (NC: 27.1±6.7; FT: 28.7±6.6), baseline O2 Sat (NC: 99±1%; FT: 99±1%), greatest duration (NC: 66±27 min; FT: 58±26), propofol dosage (NC: 134±48 mcg/kg/min; FT: 152±68) and bag-mask ventilation (NC: 0/17; FT: 0/69). There were significant differences in O2 flow (NC: 6.2±1.6 l/min; FT: 4.5±1.0), lowest O2 Sat (NC: 90±9%; FT: 97±3%), severe desaturation (O2 Sat £ 85%) (NC: 3/17; FT: 0/69), FiO2 (NC: 0.32±0.10; FT: 0.59±0.16) and O2 under surgical drapes (NC: 0.41±0.13; FT: 0.22±0.01). Discussion: Data show that this technique prevents severe desaturation and reduces assisted ventilation in propofol-sedated patients during short procedures. It increases O2 delivery without raising O2 flow and pooling O2 under surgical drapes. Conclusions: This simple face tent may improve patient safety and reduce risk of fire hazard. It should be routinely used even during short surgical procedures.

References

Paper No: 401.00

Preoperative low dose aspirin therapy and postoperative blood loss after CABG

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Introduction: Low-dose aspirin therapy, administered within the first 6 hours after coronary artery bypass grafting (CABG),
Results: The groups were comparable with respect to all pre-operative variables. Age, sex, body mass index, duration of bypass circulation, number of venous grafts, surgeon involved and preoperative treatment were equally distributed in both groups. Total postoperative mediastinal blood drainage, transfusion requirements and reoperation for bleeding in a selected population, undergoing the first time CABG surgery.

Methods: A prospective randomized four-month study in 131 consecutive patients who underwent elective coronary artery bypass grafting surgery in condition of extracorporeal circulation. Patients who met the criteria of the study were randomized into two groups: the aspirin group, which received within 24 hours before surgery a low dose of aspirin (50-100 mg), and the nonaspirin control group. Groups were comparable with respect to all preoperative and intraoperative variables. Age, sex, body mass index, duration of bypass ischemic time, number of venous grafts, surgeon involved and preoperative treatment were equally distributed in both groups. Total postoperative mediastinal blood drainage, transfusion of blood and blood products usage and reopening were recorded.

Results: The groups were comparable with respect to all preoperative and intraoperative risk factors for bleeding. No significant statistical differences were seen between the patients who did and did not receive aspirin in any of the observed postoperative results: postoperative blood loss (p = 0.871); the need for reexploration for hemorrhage (p = 0.922); blood transfusion (p = 0.736); plasma transfusion (p = 0.909); thrombocytes transfusion (p = 0.301) or cryoprecipitates (p = 0.193). Conclusions. In patients undergoing a first CABG and with no known factors affecting their coagulation, preoperative use of single low-dose of aspirin therapy 24 hours before operation did not appear to increase blood loss, blood products usage requirements and reopening during the hospital stay.

References

Paper No: 402.00

Analysis of risk factors for difficult endotracheal intubation in prehospital emergency settings – retrospective survey of single emergency medical center in Japan

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Introduction: Endotracheal intubation is an important procedure. However, it is more difficult to perform in prehospital emergency settings than a hospital trial. Although a number of analyses of endotracheal intubation in prehospital settings by emergency medical technicians have been reported, such analyses of physicians are few. We surveyed endotracheal intubation procedures performed in prehospital settings by emergency physicians working at an emergency medical center in Japan.

Objectives: We analyzed cases of difficult or impossible endotracheal intubation in prehospital settings to determine related risk factors.

Method: We retrospectively surveyed the records of prehospital medical procedures performed by emergency physicians at Hyogo Medical Emergency Center from April 2004 to March 2011.

Results: Of 3719 surveyed cases, 810 included endotracheal intubation attempts in prehospital settings. The rate of incidence of difficult or impossible endotracheal intubation was 3.82% (31/810). In those 31 cases, the procedures used were surgical airway (tracheostomy, criothyroidotomy) in 11, blind endotracheal or nasotracheal intubation performed due to difficulties in 8, video-assisted airway device in 5, and esophageal intubation in 4, while intubation failed and only bag valve ventilation was performed in 3. Our analysis indicated 5 risk factors for difficult/impossible endotracheal intubation in prehospital settings; trauma, cardiopulmonary arrest, face/neck injury, intraoral hemorrhage/foreign body, and anesthetic agent used for endotracheal intubation. Logistic regression analysis revealed that face or neck injury (odds ratio 4.92, 95%CI 1.99-12.17), and intraoral hemorrhage or intraoral foreign body (odds ratio 3.17, 95%CI 1.37-7.34) were independent risk factors for difficult/impossible endotracheal intubation in prehospital settings performed by an emergency physician. Conclusion: The incidence of difficult/impossible endotracheal intubation in prehospital settings was 3.82%, with face/neck injury and intraoral hemorrhage/foreign body shown to be independent risk factors.
Can Joint Schools support the orthopaedic enhanced recovery program? Experiences from a UK district general hospital

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Royal Hampshire County Hospital, Romsey Road, Winchester, Hampshire, SO22 5DG England

Introduction: Enhanced Recovery Programmes (ERP), designed to improve patient outcomes after surgery, are well documented1,2,3. Discussion has centred on analgesic and anaesthetic choices, and surgical techniques to improve the recovery process. Little emphasis has been placed on the role of patient education, empowerment and expectation despite this being fundamental to ERP success, as outlined by the U.K. Department of Health4.

We sought to address this through the introduction of “Joint School” – a multidisciplinary hospital visit to educate and inform patient expectations with regards to pain management, rehabilitation and discharge planning.

Objectives: To assess if patient outcomes and satisfaction are improved in our primary total hip replacement (THR) & total knee replacement (TKR) patients when they become engaged and active participants in their own recovery process.

Methods: Length of stay, pain satisfaction and mobilisation data was collected from patients pre-joint school (1st April – 31st Dec 2011) and compared to post-joint school (1st Jan 2011 – 30th June 2011). During the data collection, anaesthetic, analgesic and surgical techniques were standardised.

Results:

<table>
<thead>
<tr>
<th></th>
<th>Pre Joint School (%)</th>
<th>Post Joint School (%)</th>
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<tbody>
<tr>
<td>Number of days</td>
<td>THR TKR</td>
<td>THR TKR</td>
</tr>
<tr>
<td>&lt;5</td>
<td>45 38</td>
<td>64.5 56</td>
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<tr>
<td>&lt;7</td>
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<td>84.5 84</td>
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<tr>
<td>&gt;10</td>
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<td>8.2 1.8</td>
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<tr>
<td>Re-admission</td>
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Satisfaction score

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<tr>
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Length of Stay – Contractual (PCT) targets:

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<tr>
<td>Day 0</td>
<td>9.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Day 1</td>
<td>83.2</td>
<td>91.8</td>
</tr>
<tr>
<td>&gt;Day 1</td>
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Day 0 - 5 days...

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<td>83.2</td>
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<tr>
<td>&gt;Day 1</td>
<td>6.5</td>
<td>7.1</td>
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Re-admission

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<tr>
<th></th>
<th>THR TKR</th>
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<tr>
<td>4.1</td>
<td>3.8</td>
<td>0</td>
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Conclusions: Our results reinforce the fact that education and engagement of patients is an integral part of the ERP and contributes to its success both in terms of health economics and patient satisfaction.

References


Blood is a gift - why use two when one will do

Ian Olan and Kerry Gunn

Introduction: “Why use two when one will do” a clinically led project to promote single unit transfusion of blood components (Red Blood Cells) and a better utilization of Fresh Frozen Plasma as the standard, patients were being routinely transfused two units of blood at a time rather than one, International research shows this can have an adverse effect on patients as the risk increases with every transfusion.

Objective: To improve patient safety and reduce unnecessary transfusion by changing from liberal transfusion practices to a restricted transfusion strategy, focusing on promotion of single unit transfusion as a gold standard to reduce medical practices that compromise in any way our patients safety.
Methods: Audit We carried out a retrospective data audit to analyse how many units of blood were transfused to each patient. We found that one third of all transfusions used two or more units by default. To verify this was still current practice we carried out a 2 week snapshot prospective audit in June 2010. This measured all units ordered to each different specialties of the hospital. We used DMAIC process aligned to Clinical method of Planning, trial, analysis and correction, a project plan and guiding coalition or Clinical champions were selected and invited to participate, social marketing concepts put into place to understand what were the drivers or tag line strong enough to engage Clinicians. Footprint plan and roadshow was planned and executed Expected benefits calculated based on historical and projected information from 18 months of retrospective data Peer analysis We looked at areas of excellence in practice so we liaise with world class organisations such as: Cleveland clinic – USA, Mayo Clinic – USA, New South Wales Clinical Excellence Commission Education and Awareness Developed an education and awareness campaign championed by Clinical Champions from ADHB, CMDHB, WDHB, Waikato DHB and NZBS, this included: Posters, Intranet site, Grand Rounds and other clinical meetings; RMO Clinical Handbook 2010 Creation of new protocols and medical algorithms for supporting medical practice and transfusion prescription decision based on new standard and medical evidence, The way of measuring success is through a volume analysis using statistical process control such as: Control P-Chart, Box plots, trend chart, data used is external volumes provided from NZBS which are the same volumes used for the monthly Invoice received by ADHB the methodology was presented to the Blood Transfusion Committee and the Finance Managers for their validation.

Results: Since the programme was introduced in October 2010 to July 2011 we have: saved 2,080 units of Red Blood Cells saved 1,121 units of Fresh Frozen Plasma saved 12,804 hours of Patients time released 2,401 hours of Nursing time financial benefits of $1,653,968 thus far Ratio of Fresh Frozen plasma used per screened patient reduced from: 0.5121 to 0.4564 Ratio of Fresh blood cells used per screened patient reduced from: 0.1204 to 0.0902

Conclusions. A measurement system designed by and for clinicians is needed to provide a trustworthy source of information to change medical practice, early involvement with all parties and specialties is needed for success as well as using a scientific approach and rigor for finding solutions e.g. Lean - Six sigma as a change and project management approach and expertise to demonstrate improvement using statistical process control rather just change on practice.

References

Paper No: 462.00

The impact of the routine use of sugammadex in ENT surgery
Hoo Kee Tsang
Royal Liverpool & Broadgreen University Hospitals NHS Trust David Groves

Microlaryngoscopy and panendoscopy are day-case procedures on patients presenting with multiple co-morbidities. The procedure duration is unpredictable, ranging from 6 to 40 minutes in our centre. This may lead to a situation of completed surgery with profound neuromuscular block, resulting in theatre delay. Sugammadex is a modified γ-cyclodextrin that forms a complex with rocuronium and vecuronium, leading to potentially predictable rapid termination of neuromuscular blockade (NMB) (1).

Objective: The aim of this audit is to assess the time interval from end of surgery to theatre exit for microlaryngoscopy and panendoscopy surgery, where sugammadex has been used.

Methods: Theatre (OR) times are recorded on the operating room management information system (ORMIS). We retrieved OR times from ORMIS for microsilaryngoscopy and panendoscopy procedures over a 1 month period (Audit 1). To reduce the influence of different anaesthetic techniques we audited the OR times for a single consultant using his standard technique (Audit 2). OR times were recorded prospectively for thirty patients. The times were measured again (Audit 3) following the introduction of Sugammadex in our hospital. OR times were recorded prospectively for thirty patients.

Results: In Audit 1, data retrieved from the ORMIS revealed time intervals from end of surgery to theatre exit between 2 and 17 minutes. In Audit 2, the time intervals from end of surgery to theatre exit ranged from 5 minutes 20 seconds to 16 minutes 13 seconds (mean = 8 minutes 9 seconds). In Audit 3, time intervals ranged from 3 minutes 23 seconds to 5 minutes 20 seconds (mean = 4 minutes 8 seconds).

Figure 1. Time intervals for Atracurium-Neostigmine/Glycopyrrolate and Rocuronium-Sugammadex Discussion Compared to neostigmine/glycopyrrolate, sugammadex reduces the mean time to recovery of a train of four (2). In the UK the suggested staff cost per minute in theatre is £4.44 (3). Our audit demonstrated a 50% reduction in the mean time interval from end of surgery to theatre exit with a saving of 4 minutes. For a single case, routine use of sugammadex does not appear cost effective. The predictability of reversal of NMB with sugammadex is advantageous in theatre sessions with multiple short endoscopic procedures. The accumulated time saving is significant. The potential economic and productivity consequence is that one additional case could be added to each theatre session. The long-term cumulative financial impact of this could be significant.
Data was collected on a convenience sample of 973 patients undergoing emetogenic procedures who received combination antiemetic prophylaxis for PONV.

**Objectives:** To determine if the surgical procedure affects the cognitive state of elderly patients.

**Methods:** We designed an observational, prospective and longitudinal study including 40 elderly patients, greater than 65 years of age, hospitalized for an elective surgical intervention, and 40 controls similar in age and gender. Cognitive function was evaluated with Minimental Caban test the day before and seven days after surgery in both groups. We considered cognitive dysfunction as a score of 14 or less.

**Results And Discussion.** The average age of patients was 72.6 years (SD = 7.06) while in the control group was 77.4 years (SD = 8.06). We found preoperative cognitive dysfunction in 17 (42.5%) of patients and at the seventh day in 16 (40%) of patients (CI = 95% P = 0.22). The control group had a similar percentage of cognitive dysfunction at baseline, 17(42.5%) of patients, while at the seventh day there were no admissions to hospital because of PONV.

**Conclusion:** Females undergoing emetogenic procedures may be a cohort most likely to benefit from combination prophylaxis for PONV.
only 4 (10%) of patients with cognitive dysfunction (CI = 95% P < 0.05). There was no association between surgical procedure characteristics: ASA scale, type of anesthesia, hypoxemia or arterial hypotension, with postoperative cognitive dysfunction.

**Conclusion:** We didn't find any influence of surgical procedure over postoperative cognitive state in the elderly patients.

**References**


**Paper No: 493.00**

**Effect of subacute administration of mitragyna speciosa korth standardized methanol extract or morphine on the development of antinociceptive tolerance to thermal noxious stimuli in mice**

Laila Ab Mukmin, Sharif Mahsufi, Mansor Nizar and Abdul Jalil

Department of Anaesthesiology, School of Medical Centre for Drug Research, Universiti Sains Malaysia

**Introduction:** There are 25 alkaloids contained in Mitragyna speciosa Korth standardized methanol extract (M. speciosa) with mitragynine as the main constituent. M. speciosa is an indigenuous plant in South East Asian region and has been used traditionally for pain relief and treatment of opioid addiction. It acts on mu, delta and kappa opioid receptors as an agonist, but structurally different to morphine, and produce analgesia in response to both thermal and mechanical noxious stimuli. However, prolonged opioids exposure inevitably leads to the development of tolerance and undesirable side effects.

**Objective:** To study the effect of subacute administration M. speciosa Korth on development of analgesic tolerance, and compare it to morphine.

**Methodology.** 39 Male Swiss albino mice were divided into 3 groups, each was subjected to daily doses of M. speciosa, morphine or placebo, given subcutaneously for 6 days. The mice were then subjected to daily hot plate noxious stimuli 30 minutes after administration, until the sign of pain exhibited (hind-paw licking, jumping). This time to respond was termed as latency. Cut off point of 45 second was employed to prevent tissue injury. On day 7, the M. speciosa administered mice were given a single challenge dose of M. speciosa while the morphine and placebo treated mice were given morphine and subjected to hot plate test for 120 minutes, at 30 minutes interval. Antinociceptive response was quantified as percentage of maximal possible effect, %MPE, whereby; MPE (%) = Post-Drug Latency – Pre-Drug Latency / X 100

Cut off time – Pre-Drug Latency The changes in baseline latencies between pre and post administration in all group were also quantified.

**Results:** M. speciosa standardized methanol extract administered mice showed increase antinociceptive response by day 6 when compared to placebo (p < 0.01), while morphine treated mice showed minimal tolerance by day 6, however not statistically different (p > 0.05). The baseline latencies were significantly increased for both M. speciosa and morphine group post administration when compared to pre administration (p < 0.01), however, the difference between the two groups were not significant (p > 0.05).

**Conclusion:** There was no development of tolerance but an increase in analgesic effect observed in mice administered with M. speciosa Korth in subacute duration. In comparison, morphine treated mice showed minimal tolerance, however this was not statistically significant.

**References**


**Paper No: 516.00**

**The Effects of Hydroxyethyl 130/0.4 (Voluven) on Renal Function in Laparoscopic Nephrectomy**

Diana Vernetta, Ana Alvarez, Irene Churruca and Daniel Hernando

Fundacio Puigvert

**Introduction:** The anesthesia and the increase of intracavitary pressure secondary to pneumoperitoneum (PP) has
haemodynamic effects that could produce a relative hypovolemic state with decrease of renal blood flow and consequently a potential risk of organ ischemia. That could have negative effects to recover the renal function after laparoscopic nephrectomy. Acute normovolemic haemodilution is a good conservation strategy in order to increase the renal blood flow. So intravascular volume replacement therapy is an important issue in the perioperative management of laparoscopic surgery but the optimal fluidotherapy isn’t established.

**Objectives:** This study investigated whether intraoperative fluid management can abolish the negative effects of pneumoperitoneum on hemodynamics and if the infusion of hydroxyethyl 130/0.4 (Voluven) before installation of pneumoperitoneum is more effective to counteract the collapsed system.

**Methods:** 99 patients undergoing laparoscopic nephrectomy were randomized into three groups: group 1, served as control and received 10ml/ideal body weight (IBW)/hour of cristalloids; group 2, received 10ml/IBW/hour of cristalloids plus 6ml/IBW of HES 130/0.4 (Voluven) just before PP; group 3 received 10ml/IBW/hour of cristalloids plus 6ml/IBW of HES 130/0.4 (Voluven) just before PP followed by 3ml/IBW/hour of HES 130/0.4 (Voluven). Renal function was assessed: before surgery, immediate postoperative period and at last follow-up (greater than 6 months) using the estimated glomerular filtration rate (GFR) calculated by the 4-variable Modification of Diet in Renal Disease (MDRD).

**Results:** In group 1, GFR decreased from 83.06ml/min to 58.78ml/min at hospital discharge and 58.82ml/min 6 month after surgery. In group 2, GFR decreased from 83.75ml/min to 61.87ml/min at hospital discharge and 62.94ml/min 6 month after surgery. In group 3, GFR decreased from 84.21ml/min to 64.90ml/min at hospital discharge and 67.15ml/min 6 month after surgery. Conclusion: This study showed that during laparoscopic nephrectomy an intraoperative hydration with HES 130/0.4 (Voluven) before installation of pneumoperitoneum resulted in better GFR compared to fluid regimen with only cristalloids.

**Paper No: 554.00**

**Are nonophthalmic-rated ultrasound devices safe for ophthalmic regional anesthesia?**

Steven Gayer, Howard Palte, Jean-Marie Parel, Esdras Arrieta-Quintero and Izuru Nose

University of Miami Miller School of Medicine, Miami, Florida

**Introduction:** Needle-based ophthalmic anesthesia is generally safe. However, it can be associated with the rare catastrophic complication of globe perforation. Ultrasound-guided regional anesthesia allows real-time needle visualization so its adoption in ophthalmic anesthesia may lessen risk of ocular injury. Use of ultrasound remains unchartered because ultrasonic energy is potentially injurious to vulnerable eye tissue. We investigated the ocular safety of a non-orbital rated ultrasound transducer commonly used for regional anesthesia.

**Objectives:** The aim of this study was to compare thermal and mechanical changes produced by an ophthalmic rated ultrasound machine versus a non-rated device commonly used by anesthesiologists for peripheral nerve blocks in OR suites.

**Methods:** The study protocol was approved by the University of Miami Institutional Animal Care and Use Review Board Committee and conforms to the ARVO Statement for Use of Animals in Ophthalmic and Vision Research. This is a dual phase comparative rabbit-model investigation. In Phase 1, thermocouples were surgically implanted in the anterior chamber, lens, vitreous, and peri-orbital skin. Thermal changes were recorded during 10 minute ultrasound exposure to FDA orbital and non-orbital rated devices. Ophthalmic pathologists determined anatomic impact using light microscopy and histopathology. In an analogous manner, Phase 2 eyes were exposed to 10 minutes ultrasound using either device and examined for 3 days via light microscopy and then histology. A control group was exposed to a 10 minute application from a dormant transducer of each machine, and assessed similarly.

**Results:** A greater rate of temperature appreciation and higher final temperature occurred in all eyes with use of the non-orbital rated device. In both groups intraocular temperatures approached the subcutaneous value. Minor tissue injury was detected only in eyes which had undergone surgical thermocouple implantation. Histopathology did not identify structural or thermal cellular injury in eyes from either group.

**Conclusions.** Under conditions of prolonged exposure we compared a FDA-approved ophthalmic ultrasound transducer with a non-rated ultrasonic probe for ocular damage. Both phases of the study did not show evidence of ultrasound-induced macro-or microscopic thermal or structural injury. These outcomes suggest that certain non-rated devices commonly found in operating room suites may be safe for ophthalmic regional anesthesia. The tangible benefits of anesthesiologists using available OR equipment for ocular anesthesia may include faster turnover times, reduced block-related complications and enhanced patient safety.

**Paper No: 574.00**

**Choice of optimal airway for general anesthesia during planned outpatient ophthalmic surgery**

Igor Idov, Pavel Rylov, Sergey Bersenyov, Vladimir Komlev and Sergey Kostarev

S. Fyodorov Eye Microsurgery Federal State Institution, Ekaterinburg Branch

**Introduction:** Wide variety of artificial airways for non-invasive artificial pulmonary ventilation (APV) suggests
search and choice of optimal device for APV in complex anesthesiological aid during ophthalmic surgery. Laryngeal ducts have found their place in ophthalmic anesthesiology within the last decade. Objectives A comparative estimation of supraglottic airways efficacy has been performed in ophthalmic patients during following operations: subtotal vitrectomy, scleral buckling, reconstructive operations on the anterior segment of the eye, squint surgery, evisceration, enucleation. Seven types of disposable and reusable airways have been studied: I – GEL (Intersurgical), LMA-CLASSIC, LMA – Flexible, LMA – SUPREME, C – TRACH, LMA – FASTRACH, LMA – PROSEAL. Seven groups of patients, 20 persons in each have been formed. There were 54% of females and 46% of males, aged from 1 to 75 years.

Methods: Anesthesia protocol was identical in all the patients and included endotracheal anesthesia with Sevoflurane, using standard induction. APV during surgery was performed through a closed contour in Minilow – Flow mode with Aliseo Datex – Ohmeda and Blease Frontline respirators. Myoplegia was applied. Hemodynamics and gas exchange were estimated by continuous monitoring of standard parameters with Datex Cardiocap II and Datex Ultima devices, depth of anesthesia was controlled by AEP-monitor.

Results: The performed medical and economic analysis of selected airways types use for general anesthesia during planned ophthalmic surgery has disclosed obvious advantages of three airways types: I– GEL for single use; LMA-CLASSIC and LMA– Flexible for multiple use. No complications associated with airway introduction or insufficient airtightness of respiratory tract during APV was seen in any of 7 groups.

Conclusion:
1. All supraglottic airways provide sufficient respiratory tract airtightness necessary for effective artificial pulmonary ventilation and are therefore optimal for ophthalmic anesthesia.
2. According to medical and economic analysis, the following devices are optimal for planned ophthalmic anesthesia: I – GEL (Intersurgical), LMA-CLASSIC, and LMA – Flexible while C – TRACH, LMA – FASTRACH, LMA – PROSEAL could not be recommended.

Paper No: 578.00

Anaesthesiological perioperative management influences in-hospital mortality in patients receiving negative-pressure wound therapy

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Clinic for Anaesthesia and Critical Care Medicine, Municipal Hospital Karlsruhe, Germany

Introduction: Negative-pressure wound therapy (NPWT) is increasingly used for treatment of chronic persistent wounds and acute complicated wounds. In 2009 we observed several fatalities in patients with NPWT and recurrent operative interventions. Therefore we implemented a rigorous standard for perioperative anesthesiologic management on January 1st, 2010. We report outcomes of one-year cohorts of patients receiving NPWT in time periods of January 1st – December 31st 2009 and January 1st – December 31st 2010.

Objectives: The objective of the current study was to investigate whether a perioperative management which prevents low serum potassium levels and dehydration preoperatively decreases in-hospital mortality significantly in patients with NPWT.

Methods: Retrospective analysis of one year patient cohorts before and after installment of new perioperative management guidelines. New management guidelines included placement of a central venous line to facilitate blood sampling and necessary substitutions of potassium with a target concentration of >4.5 mmol/L and infusion of 1000 ml of crystalloidal fluid preoperatively over 4 hours before induction of anesthesia.

Patient records were retrieved automatically by computerized search with keywords diagnosis related groups (DRG) encoding NPWT in 2009 and 2010. All patient records were then hand searched. 205 of 544 patients records were excluded because of diagnosis mismatch. All patient’s laboratory and clinical data were recorded and analyzed. Values were determined as medians and 1st and 3rd quartiles. All data were analyzed non parametrically using Fisher’s exact test and Wilcoxon-Mann-Whitney-U-test were appropriate. Significance was assumed when P value was less than 0.05.

Results: All patients in 2009 and 2010 were from the departments of visceral surgery, traumatology, orthopedic- or vascular surgery. There was no difference in distribution to the surgical department according to groups. Age, gender, ASA classification, duration of hospital stay and case mix index (CMI) and patient clinical complexity level (PCCL) as measures of severity of illness were comparable in both groups (p > 0.05). In 2009 n = 33 of 166 patients with NPWT died during their hospital stay, whereas mortality was decreased significantly to n = 16 of 173 in 2010 (Fisher’s exact test, p < 0.05). Thus mortality was reduced by 53.8%. In 2009 medians of serum potassium values were 4,20 mmol/L compared to 4,30 mmol/L in 2010 (Wilcoxon-Mann-Whitney-U-test, p < 0.05).

Conclusion: Retrospective analysis of our data indicates that an intensive perioperative management regime in patients with NPWT can significantly reduce hospital mortality.

References
Anaesthetic technique has not been associated with prostate cancer recurrence

Irene Churrúca, Sergi Sabaté, Juan Francisco Mayoral, Joan Carles Ortiz and Pilar Sierra

Introduction: In recent years there has been talk about anesthetic technique effects in the recurrence of prostate cancer. Objective: To evaluate the recurrence of prostate cancer in patients who received either general anesthesia with subarachnoid analgesia or general anesthesia with postoperative opioid analgesia.

Materials and Methods: Retrospective study. Patients with invasive prostate carcinoma who underwent open or laparoscopic radical prostatectomy between January 1997 and December 2007 were analyzed. A dependent variable was the increase in postoperative prostate-specific antigen (PSA). Independent variables were: prostate weight, Gleason score, preoperative PSA, margin of tumor, age and surgical approach. A multivariable Cox regression model was developed.

Results: 2,173 radical prostatectomies were studied. We didn't find differences in recurrence between general-subarachnoid anesthesia compared to general anesthesia in a multivariable Cox regression model. The Gleason score and margin were independent predictors of recurrence (HR: 1.5 [1.3-1.9] and 3.6 [2.5-5.3] respectively). We matched patients based on the propensity of receiving subarachnoid blockade vs. general anesthesia. Independent variables associated with developing recurrence were the same variable with HR 1.4 [1.1-1.9] and 4.2 [2.2-7.9] respectively.

Conclusion: In this retrospective study we only found that the margin of tumour and Gleason score are predictive for prostate cancer recurrence. Anaesthetic technique was not related to cancer recurrence. It is necessary to do extensive prospective studies to confirm our results.

Thoracic epidural anesthesia in major vascular surgery and antiplatelet drugs

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Introduction: Thoracic epidural anesthesia/analgesia (TEA) is known as most effective technique for postoperative pain management (1)(2) improving surgical outcomes especially in fast track surgery (3)(4). Nevertheless this technique used for patients with antiplatelet drugs scheduled to systemic intraoperative heparin, as aortic surgery, may leave some perplexity. Anyway antiplatelet drug suspension increases cardiac and embolic risks (5) so much that guidelines counsel risks/benefit balance for every clinical case (6).

Objectives: The objective is the analysis of adverse events, morbidity, mortality and outcome in patients scheduled to major vascular surgery, employing following pathway: single antiplatelet drug (acetylsalicylic acid or thienopiridynes) maintenance, TEA, intraoperative heparin one hour after epidural catheter positioning, early postoperative fast-track ambulation avoiding postoperative thrombo-embolic prophylaxis with heparin.

Methods: From 2000 to 2011 Vascular Team treated 888 patients affected by obstructive and aneurismatic aortic pathologies. Emergency/urgency conditions were excluded. Antiplatelet therapy wasn't stopped, unless preoperative anamnesis and exams emphasized haemostatic problems. Patients with double antiplatelet drugs were evaluated by surgeons, anesthesiologists and cardiologists together about risk/benefit balance. After TEA positioning and epidual administration of local anesthetic patients underwent light general anesthesia. At the end of surgery patients were awakened and transferred to the ward, maintaining continuous epidural infusion. Intraoperative heparin was neutralized by protamine. Throughout postoperative period patients followed early oral feeding, resuming usual therapy (antiplatelet drug included) and early in bed mobilization, getting up with assistance three hours after end of surgery. Low molecular weigh heparin was avoided. Epidural catheter was removed 48 hours after end of surgery. Parameters analyzed were: kind of antiplatelet drugs assumed; major hemorrhagic complications; neurological complications; outcome morbidity and mortality till 30th postoperative day.

Results: 622 patients treated for aortic pathologies assumed respectively: 506 acetylsalicylic acid; 91 thienopiridynes; 7 dipiridamolo; 18 acetylsalicylic acid plus thienopiridynes, 5 of which stopped one drug on Team opinion. During postoperative period only one neurological event was recorded, but it didn't correlate with epidural technique.

Discussion: In aortic surgery TEA showed decrease of perioperative cardiac ischemic, respiratory, gastrointestinal and renal accidents, specially if associated to fast track surgery. Even though the risk of spinal haematoma is very low last guidelines suggest to maintain acetylsalicylic acid, while show perplexity about thienopiridynes and intraoperative heparin. However several authors report high level of safety about TEA in major surgery, considering its advantages.

Conclusion: The review of our data confirm the safety of TEA in vascular major surgery. We suppose that the advantages of TEA and maintenance of antiplatelet drugs can decrease...
adverse events, least of all ischemic one, leading, by low risks, to a better outcome and morbidity.

References

Paper No: 608.00

Learning curves cusum in anesthesia procedures

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Introduction: Psychomotor learning process in health is a complex multidimensional function and it has a great social impact, therefore its objective assessment should be individualized. The model CUSUM (Cumulative Sum method) has proven to be a great tool in the assessment of psychomotor education in anesthesia since it allows a specific analysis according to the individual and to the skill.

Objective: Our Objective was to construct learning curves for basic anesthetic procedures using the CUSUM method.

Materials and methods. Every procedure performed by anesthesiology first year students at orotracheal intubation, spinal anesthesia, epidural anesthesia, central venous catheterization and radial arterial catheterization was evaluated sequentially, estimating 1 as a success or zero as a failure, and operating these values according to the CUSUM model. With this information the learning curves of each student were made.

Results: For orotracheal Intubation: 75% of students achieved 95% of success with 65+24 cases. For spinal Anesthesia: 50% of students achieved 85% of success with 35 cases. Epidural Anesthesia: 100% of students achieved 80% of success with 13+5 cases. Subclavian venous catheterization: 100% of students achieved 80% of success with 21+6 cases. Arterial catheterization: 75% of students achieved 80% of success with 42+5 cases.

Discussion: Konrad showed that in orotracheal intubation 90% of success is achieved with 57 attempts whereas Bouchacort with 41 attempts. Olivera showed that 80% success is achieved with 9 to 88 attempts. In our work, these values varied but remained within the range. In conductive anesthesia we found similar values to Olivera. In subclavian venous catheterization a reference value of 21+6 cases to achieve 80% success was found. Our radial arterial catheterization results differ from previous issues. The main limitation of this study was the reduced amount of students tested and the case record.

Conclusions. CUSUM charts are the best tool currently available for the psychomotor learning assessment in Anesthesiology. They provide immediate information that change over time and they compare this information with quality standards early in the learning process.

Paper No: 615.00

Experiences of anaesthesiologist as a member of surgical team in Libya during uprisal

Pekka Mononen

Introduction: Before heavy fighting of Tripoli ICRC send 2 RDUs (rapid deployment unit) into Libya to help hospitals to treat war wounded. As delegate of Finnish Red Cross I was a member of first Finnish surgical team in Libya.

Methods: Our task was to visit Libyan hospitals recovering after the leave of Gaddafi troops, assess the performance and the skill to treat war injuries of visited hospitals, collecting data of patients, anaesthesiological methods and surgical care of patients. With cooperation of Libyan colleagues guidelines for treatment ( surgical and anaesthesiological ) war injuries were settled in meetings. RESULTS Data during Mission 27.8 – 20.9.2011 are presented :Assesment results in table 1.

Discussion. Injuries were GSW (84%) in lower extremities of patients we operated, and 16% traffic accidents caused by war activities. Performance of hospitals ( table 1) was 5-9, because of restarting hospitals. Main deficiency was external fixation sets and skilled personnel. Daily shortage of electricity and water decreased performance. Anaesthetics, medicines, iv-fluids, monitors and anaesthesia machines were up to date providing excellent care of patients any kind. In First aid post too small supply of iv-fluids and ketamine could be a problem.

Conclusion: Hospitals in Libya are well equipped and restarting after liberation, and with supply of external fixation sets, some instruments, iv-fluids and some anaesthetics mainly ketamine the performance of hospitals will be grade 9 – 10. Teaching guidelines for treating war injuries with special reference to first aid and emergency care are presented in medical meetings for doctors and personnel by ICRC.
Prevention of venous thromboembolism with Fraxiparine® in patients undergoing colorectal surgery

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University Clinic of Surgery

Introduction: Adequate, evidence-based prophylaxis of venous thromboembolism (VTE) is still not routine in clinical practice in patients who undergo colorectal surgery (1). Although it is difficult to predict when pulmonary embolism might occur, it is well known that the incidence of VTE in these patients is highest between days 25 and 31, while the period of prophylaxis is usually performed during the period of hospitalization (approximately 11 days) (2). Even 15% of all patients with cancer present VTE, 50% of them on autopsy (3). Major bleeding associated with anticoagulants is additional challenge (4) for those who assess contraindications for anticoagulants. The aim of this study was to examine and to prove the efficacy and safety prophylaxis of VTE with Fraxiparine® following recommendations of the ACCP (Chest 2008 (5) and to support longer duration of prophylaxis.

Method: 42 patients who underwent colorectal surgery (score = 2 and 3) according to the different level of risk for VTE (6) were included in an observational, prospective study. Group specific prophylaxis with Fraxiparine® was performed routinely with different preventive strategies in respect of dose and time of administration. The analysis of the applicable recommendations was used with the clinical signs according to Wells criteria (7) and determination of the platelets count and D-dimers (8) at the 1st, 7th and 30th day postoperatively. Colour doppler sonography of v. femoralis and v. poplitae as method of choice in the early diagnosis of deep venous thrombosis was performed at the 1st and 7th day according to the recommendation of the American College of Radiologists. Compressive stocks and Frahiparine® (0.4 ml or 3800 anti Xa 1U/ml, sc, once or twice daily; grade 1A) were administered 12-24 h preoperatively. Duration of the treatment was 28-30 days continuously (9,10).

Results: There was no evidence of major bleeding in the whole group, as so as there was no statistical significant difference between the platelets count during the follow up period (p > 0.05). Only at 2 patients the decrease of the platelets count was more than 20%. D-dimers were elevated in 5 patients without diagnostic significance. Colour doppler sonography showed lumen of the veins free of ehogenic formation and spontaneous flow with respiratory phase in all patients.

Conclusion: There is a “gap” between the presence of recommendations and their implementation in clinical practice. Long-term prophylaxis with Fraxiparine® is safe and efficacy and VTE might be prevented following these recommendations.

References

Continuous intravenous analgesia for postoperative pain control in ambulatory surgery

Jerzy Pablo Pacheco, Magdalena Serra, Juan Blazquez, Jose Planell and Francisca Gordo

Objectives: The control of postoperative pain as well as nausea and vomiting remains a major challenge in Ambulatory Surgery (1). We are investigating the efficacy, feasibility and safety of the use of continuous intravenous analgesia devices for pain control in ambulatory surgery postoperatively.

Material and methods: ASA I, II and III. Patients were included. Analgesic regimens available: Prescription 1 tramadol 400mg + dexketoprofen 250 mg Prescription 2 tramadol 400mg + 12 g metamizol Prescription 3 tramadol 200mg + dexketoprofen 150 mg Prescription 4 dexketoprofen 250mg. Prescription 5 tramadol 400mg + dexketoprofen 250 mg + haloperidol 2.5 mg. All with a fixed prescription of paracetamol 1g c / 6 h, gastric protector, metoclopramide if nausea and / or vomiting and rescue tramadol 50 mg orally (2), (3). We used an elastomeric continuous infusion device for 48 hours, during this period the patients were controlled by the home care team of our hospital.

Postoperative pain was assessed by verbal numeric scale (VNS), from the immediate postoperative period at 24, 48 and even 72 hours after removing the elastomeric device. We evaluated side effects, satisfaction and medication use rescue.
Results: We included 400 patients from January 2010 to August 2011, 60.4% were women. 83.2% underwent orthopaedic surgery: Hallux valgus, osteotomies of the foot (43.2%) arthroplasties, rhizarthrosis, osteotomy, osteosynthesis (30%), and knee ligamentoplasty (10%). 12.3% of abdominal wall surgery: Inguinal hernia repair. 4.5% other procedures: Varicose veins, septoplasty, TVT coloplastia. 61.7% had peripheral blocks performed. The most commonly used was prescription 1 and 5 with 83.9%. We noticed that the analgesia was effective in 94.1% of patients who had VNS between 0 and 4 at 24 hrs, 95% at 48 hrs and 91.5% at 72 hrs. The presence of nausea or vomiting was 8% at 24 hrs. And 10% at 48hrs, we noticed a significant decrease in 24 Hrs. with the prescription that included haloperidol. 8% need rescue medication with tramadol VO, and satisfaction was good in 99.5% of cases.

Conclusions. Intravenous continuous analgesia at home with elastomeric devices fits any type of surgery, for their efficiency, safety, easy handling and low cost in the Ambulatory Surgery Units in our hospital.

References

Paper No: 729.00

Prediction of postoperative vomiting in laparoscopic gynaecological surgery

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Introduction: Postoperative vomiting (POV) is the second most common postoperative patient complaint. Patients undergoing laparoscopic gynaecological surgery have a higher incidence of POV. Assessment of POV risk factors helps clinicians to use appropriate POV prophylaxis. The most used predictive models for POV in clinical practice are Apfel's and Koivuranta's simplified risk scores.(1,2)

Objectives: We analyzed multiple predictive factors for POV in laparoscopic gynecological surgery and proposed a new predictive model for POV. Additionally we compared Apfel's and Koivuranta's risk score with our new score model in this clinical setting.

Methods: After obtaining IRB approval and informed consent, 421 women (ASA PS I-II) undergoing laparoscopic gynecological surgery were enrolled in a prospective study. Of these women, 47 were excluded and 374 completed the study. No POV prophylaxis was given. Thiopental was used for induction and isoflurane or sevoflurane for maintenance of general anesthesia. POV and pain scores were measured at 2 and 24 hours postoperatively. Diclofenac and meperidine were used for postoperative pain and metoclopramide for POV. We analyzed 21 patient, 11 anesthesia, and 2 surgery related factors. Multivariate logistic regression was used for predictive modeling. Initially all predictors with p > 0.2 significance and then iterative predictors with p > 0.05 were excluded. All excluded predictors were then individually tested for possible interaction with the final model looking for influence of the predictors' significance on the model for more than 20% of the initial significance.(3)

Results: Incidence of POV was 32.3%. Predictive modeling showed 4 predictive factors in the final model: type of surgery (OR = 3.54), history of POV (OR = 1.92), non-smoking (OR = 1.77) and early postoperative pain (OR = 1.033). Our model showed better absolute and relative predictive accuracy (70.86% and 68.97%, respectively) compared with Apfel's (62.03% and 61.16%) and Koivuranta's (66.84% and 54.15%). Also, our model had higher sensitivity and specificity (0.743 and 0.636, respectively) compared with Apfel's (0.636 and 0.586). Koivuranta's model had higher sensitivity (0.901) but poor specificity (0.181).

Conclusions. A new predictive model for POV with four predictors (history of PONV, nonsmoking status, early postoperative pain, and type of surgery) compared with two commonly used models was a better predictor for POV in patients undergoing laparoscopic gynecologic surgery. Further validation of our model on a new data set is needed.

References

Paper No: 735.00

Lateral lumbar plexus block in children: a novel ultrasound-guided approach through the acoustic window of abdominal wall

Gonzalo Rivera and Maria José

Cordero Hospital de Niños Luis Calvo Mackenna, Santiago, Chile Silvana Cavallieri Mauricio Campos Constanza Larraguibel

Introduction: The psoas compartment block (PCB) has been used for many years for postoperative analgesia in surgeries that involve lower extremities in children. Recently, several articles have provided anatomical findings in order to determine the best way to achieve the block in children (1,2). Traditionally, posterior approach to PCB has been identified as a complicated and potentially dangerous block. However, studies in children have shown a small number of adverse
events without major complications (3,4). Nowadays, US-guidance has emerged as an attractive tool in many regional blocks including PCB (5).

**Objectives:** We present a novel US-guided approach to the PCB, placing the US probe on the abdomen avoiding some of the disadvantages of the previous approaches with the same successful results (5,6).

**Methods:** The study was divided in two parts. (1) Fifty patients (1-15 years old; ASA I-II) were scanned on their abdominal surfaces (M-turbo with a curved array transducer C60x (5-2 MHz; Sonosite®, Bothell, WA, USA)) in order to establish the anatomical relations and, to decide the best way for locating the probe for performing an eventual puncture. (2) In the clinical study, we locate the probe transversally over the abdomen at level of vertebral body L4 visualizing the picture of the transverse process and psoas, erector spinae and quadratus lumborum muscles. In supine position, the puncture was performed laterally in the flank at level of the posterior axillary line in direction to psoas muscle under real time US-guidance. Eighty-five children (1-15 years old; ASA I-II), scheduled for surgeries suitable for PCB were recruited. All patients were followed and assessed for analgesic requirements and adverse effects.

**Results:** In the first part we identified the level of the vertebral body L4 as the best level to do the block. This point coincides with the aortic bifurcation and psoas, quadratus lumborum and erector spinae muscles. No images of kidneys were present at this level at any age. Lumbar plexus was evident in 78% of patients. In the clinical study, the block was possible in all patients (95% first attempt). Postoperative analgesia was excellent in all patients during a period of 24 hr. Nausea and vomiting was present in 10%, and urinary retention and epidural spread with bilateral transient effect in 5%.

**Conclusions:** We present novel US-guided approach to PCB in children. This technique permits a clear and easy-to-understand view of the structures, which allows a successful block with few side effects.

**References**


**Paper No: 739.00**

**Supraspinal neuroapoptosis following chronic administration of morphine in rats**

Dusica Bajic, G. Kathryn Commons and Sulpicio G. Soriano

**Introduction:** The newborn brain is fundamentally different from the adult brain. It is uniquely susceptible to opioid stimuli playing a role in regulating cell proliferation, activity dependent synaptogenesis and cortical development. Prolonged neonatal opioid exposure has been associated with faster onset of opioid analgesic tolerance [1], and a long-term neurodevelopmental delay, cognitive and motor impairment [2]. We hypothesized that neurotoxicity in the form of apoptotic cell death would be increased in association with development of antinociceptive tolerance to morphine in developing rat.

**Methods:** Two groups of rats were analyzed: (1) control group injected with normal saline (n = 4), and (2) chronic morphine (tolerant) group treated with 10 mg/kg morphine (n = 3). Rats were injected twice daily for 6.5 days starting on the postnatal day 1 (PD1). An immunohistochemical double-labeling technique was done with markers for apoptotic cells (caspase-3), and one of the following: neuronal nitric oxide synthase (nNOS), a microglial (Iba-1), or an astrocytic marker, glial fibrillary acidic protein (GFAP). We analyzed: somatosensory cortex, hippocampus, hypothalamus, as well as periaqueductal gray (PAG).

**Results:** Chronic morphine administration was associated with (1) analgesic tolerance (as demonstrated by Hot Plate Test), and (2) trend of increased number of Caspase-3 immunoreactive cells in all anatomical regions analyzed. Caspase-3 immunoreactive cells exhibited morphology analogous to different types of neurons, but only a few were nNOS-immunoreactive. Also, a few microglial cells underwent apoptosis. Clusters of Caspase-3 cells that were losing morphological features were noted in chronic morphine group in the region of cortex and hippocampus only and were noted to be double-labeled with nNOS and GFAP. Astrocytic activation was selective for clusters of Caspase-3 immunoreactive cells and was not widespread in any of the regions analyzed.

**Discussion:** Although several reports have demonstrated neuroapoptosis following opioid administration in vitro [3] and in vivo at the spinal cord level in adult rats [4], our study shows increased trend of supraspinal apoptosis in developing brain that includes mostly neurons, very few of which are nNOS. Although oxidative stress is associated with antinociceptive tolerance to morphine in adult rats [5], the role of nNOS in developing brain remains to be investigated. Lack of widespread glial apoptosis and robust glial activation provides evidence that glia is not involved in mediating chronic effects of morphine in PD7 rat.
After improved of hospital ethic committee,

Methods:

Objectives:

Comparation of analgesic effects of remifentanil


Introduction: Universal goals during one day surgery are rapid recovery from anesthesia, rapid return of cognitive functions. Many patients find the operating room environment and awareness during surgery provoked anxiety. These are the reasons for using local anesthetic techniques in combination with intravenous drugs to provide anxiolysis, sedation and analgesia.

Objectives: Comparison of analgesic effects of remifentanil versus alfentanil in combination with midazolam during one day surgery under monitoring anesthesia care. The goal of the study was to evaluate which combination of the drugs facilitated shorter recovery time and decreased charges.

Methods: After improved of hospital ethic committee, retrospective review of 38 outpatient charts with ASA I-III patients were randomly assigned to one of two groups. Each patient was premedicated with 2mg. midazolam, and 5min. before the local anesthesia was administered in the I-group patients began to receive 0.05 μg/kg/cm remifentanil. In the II-group patient 5min. before the infiltration of local anesthetic received 0.5 μg/kg/cm alfentanil. Inadequate analgesia (VAS ≥) was treated in I-group with enlargement of ratio to 0.1 μg/kg and larger, and in the II-group with bolus of alfentanil of 0.5μg no more than three times. For the evaluation of the pain we used VAS during the infiltration of local anesthetic, and every 5 minutes during the surgery. Patients were verbally asked to rate their sedation on a numerical scale from 0 -10 preoperatively, and every 10 min. during the surgery, and 30, 60, 90 min. after the end of surgery. Monitoring include the usual cardiovascular and respiratory monitoring: ECG, NIBP, pulse oximeter, respiratory rate.

Results: There were no significant differences between groups in the rate of sedation, before, during and after surgery, but the remifentanil group had less sedation all the time postoperatively compared with alfentanil group. One patient in the remifentanil group experienced muscle rigidity during the first enlargement of the dose, and infusion of remifentanil was interrupted and the surgery was prolonged only with local anesthesia. Also, one patient in alfentanil group had respiratory depression during the first repeated dose of alfentanil with very short acting of 4,5min. The time for first analgesic use was shorter in remifentanil group (20min for remifentanil, 35 min for alfentanil group). Patients in remifentanil group were able for discharge earlier than alfentanil patients

Conclusion: Remifentanil provided effective analgesia and mentioned adequate respiration during MAC, well suited for ambulatory care due to rapid onset, even after large doses or prolonged administration.

References


Paper No: 744.00

Remifentanil compared with alfentanil for ambulatory surgery during monitored anesthesia care

Slavica Stojanova, Rade Filipovski, Mirjana Sosolceva and Tanja Trajic

Introduction: Universal goals during one day surgery are rapid recovery from anesthesia, rapid return of cognitive functions. Many patients find the operating room environment and awareness during surgery provoked anxiety. These are the reasons for using local anesthetic techniques in combination with intravenous drugs to provide anxiolysis, sedation and analgesia.

Objectives: Comparison of analgesic effects of remifentanil versus alfentanil in combination with midazolam during one day surgery under monitoring anesthesia care. The goal of the study was to evaluate which combination of the drugs facilitated shorter recovery time and decreased charges.

Methods: After improved of hospital ethic committee, retrospective review of 38 outpatient charts with ASA I-III patients were randomly assigned to one of two groups. Each patient was premedicated with 2mg. midazolam, and 5min. before the local anesthesia was administered in the I-group patients began to receive 0,05 μg/kg/cm remifentanil. In the II-group patient 5min. before the infiltration of local anesthetic received 0,5 μg/kg/cm alfentanil. Inadequate analgesia (VAS ≥) was treated in I-group with enlargement of ratio to 0,1 μg/kg and larger, and in the II-group with bolus of alfentanil of 0,5μg no more than three times. For the evaluation of the pain we used VAS during the infiltration of local anesthetic, and every 5 minutes during the surgery. Patients were verbally asked to rate their sedation on a numerical scale from 0 -10 preoperatively, and every 10 min. during the surgery, and 30, 60, 90 min. after the end of surgery. Monitoring include the usual cardiovascular and respiratory monitoring: ECG, NIBP, pulse oximeter, respiratory rate.

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Conclusion: Remifentanil provided effective analgesia and mentioned adequate respiration during MAC, well suited for ambulatory care due to rapid onset, even after large doses or prolonged administration.

References


Paper No: 750.00

Comparison between intravenous parecoxib and ketorolac for post-operative pain relief following ambulatory laparoscopic sterilization under general anaesthesia

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Introduction: Laparoscopic sterilizations are commonly done as a short daycare procedure. However, it is now known that
the pain incurred is often underestimated in terms of intensity and duration. Effective postoperative pain relief for such a procedure requires a rapid onset and a longer lasting effect of analgesics, without their adverse side-effects.

**Objectives:** This prospective, randomised and double-blind study was done to compare the effectiveness between a single intra-operative dose of intravenous (IV) parecoxib and ketorolac for post-operative pain relief following laparoscopic sterilization as an ambulatory procedure.

**Methods:** Seventy ASA I or II patients were randomised into two groups. The Parecoxib Group received 40 mg IV parecoxib sodium and the Ketorolac Group received 30 mg IV ketorolac tromethamine following a standardised induction of anaesthesia. Post-operative pain was assessed using Verbal Rating Score (VRS) after surgery in the recovery room, at 4 hours post-operatively prior to discharge home, and at 12 hours and 24 hours later through telephone calls.

**Results:** There was no difference in VRS between both groups immediately and at 4 hours after surgery. VRS at rest and on deep inspiration were significantly lower in the Parecoxib Group at 12 and 24 hours post-operation. Although significantly fewer patients from the Parecoxib Group needed rescue medication at home, their median time to rescue medication at home was comparable to the Ketorolac Group.

**Conclusions:** In patients undergoing ambulatory laparoscopic sterilization under general anaesthesia, intra-operative IV parecoxib 40 mg provided comparable pain relief to IV ketorolac 30 mg in the immediate post-operative period. However, IV parecoxib provided a longer and better pain relief at 12 to 24 hours after surgery in these patients.

**References**


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**Paper No: 765.00**

**Effects of sedation with propofol on the quality of MRI studies of the brain**

Linda Chi, Ammmar Al-Ibraheemi and David Ferson

**Introduction:** Many patients undergoing brain MRI studies require sedation. Indications for sedation usually include: 1. claustrophobia, 2. morbid obesity, and 3. chronic pain.

**Objectives:** We hypothesized that the use of propofol for sedation can cause relaxation of airway structures and can result in snoring. Snoring, which reflects partial airway obstruction, can cause significant MRI motion artifacts and interfere with proper analysis of MRI studies. The use of a supraglottic airway can mitigate motion artifacts and improve diagnostic quality of MRI studies.

**Methods:** We reviewed the data of all patients, who underwent brain MRI studies with sedation in a one year period. We stratified the patients into two groups: patients in whom supraglottic airway was used and the second group of patients without supraglottic airway. Brain MRI studies were reviewed by a board certified neuroradiologist, blinded to the stratification scheme. The studies were rated on the severity of motion artifact and diagnostic value of the study.

**Results:** Patients, who received sedation with intravenous propofol had significantly higher incidence of motion artifacts on brain MRI than patients who did not receive sedation.

**Conclusions:** Sedation with propofol during brain MRI can cause partial airway obstruction. This results in significant motion artifacts on MRI images and decreases significantly the diagnostic value of the study. Use of supraglottic airways during MRI studies under sedation with propofol reduces motion artifacts and improves the quality of MRI images.

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**Paper No: 778.00**

**Perception about the role of anesthesiasts and anesthesiologist among the paramedics from a medical college in Nepal**

Basant Bhattacharai

Kathmandu University, School of Medical Sciences, Dhalikhel Hospital, Dhalikhel Kavre-Nepal

**Introduction:** Anesthesiologists and anesthesia specialty has always been considered as behind the scenes specialty. The image and the status of anesthesiologists in the eyes of medical and lay communities has always been a problem. One study has shown even healthcare personnel and academic staffs don’t know the depth of anesthetic practice and teaching potential of anesthesiologist. This study was designed to assess the knowledge about Role of anesthesiologist among paramedics at Kathmandu University Hospital.
Materials and Methods: This prospective questionnaire based study was conducted at Kathmandu University Hospital from 2nd January 2011 to 30th Jan 2011 among the paramedics working in different departments of the hospital.

Results: Out of 150 questionnaires distributed, only 120 Paramedics responded. Mean age of respondents was 23.33. Majority had educational qualification equivalent to intermediate level and were females. Only 49.20% said anesthesia to be a different specialty, and 72.5% said we work differently in the theatre whereas 70% knew we also did something in post operative period.

Discussion: Better awareness of anesthesia activities and proper expectation by the patient would create interest of health administrators and help in recruiting more anesthesia related health facilities. Lack of recognition and decreased appreciation of the role of the anesthesiologist contributes to the frustration of the anesthetic practitioner. In our study the level of education correlated with knowledge about anesthesia and anesthesiologists. Poor public image is one the reasons for job dissatisfaction among anesthesia residents. This is very true in developing countries like ours where there is constant shortage of anesthesiologists with total number ranging less than 120. As the paramedical staffs stay in the front line of communication, improving the image of specialty will surely help towards improving its staffs stay in the front line of communication, improving the image to the eyes of the public.

Conclusion: Anesthesiologists have duty to visit patient pre-operatively and post operatively. The expanding role of anesthesiologist inside and outside the theatre like intensive care unit, acute and chronic pain management and emergency and trauma care should be highlighted to all the staffs.

References

Effect of a single shot sciatic nerve block combined with a continuous femoral block on pain scores after knee arthroplasty. A randomized controlled trial

Raul Carvalho, Jose P. Bragança and Luisa Calixto

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Introduction: Postoperative pain after total knee replacement /arthroplasty (TKA) is a major concern. It is severe pain in 60% of patients and moderate in 30%. Continuous femoral nerve blocks (CFNB) are considered an excellent choice for regional anesthesia for major knee repair but there are some controversies about the need of supplemental obturator or sciatic nerve blocks for achieving better postoperative analgesia. A recent meta-analysis states there is no sufficient evidence to recommend or discharge these associations.

Objectives: We aim to assess the efficacy of the association of a sciatic nerve block (SNB) and a CFNB for reducing post-operative pain in patients submitted to TKA.

Methods: A randomized controlled study on 50 patients submitted to TKA. Control group receives a femoral nerve block with a catheter before general anesthesia is induced and the intervention group gets a similar block plus a single shot SNB before general anesthesia. Both groups start a continuous local anesthetic infusion through femoral catheter after the end of surgery and supplemental oral diclofenac and paracetamol. Pain scores are measured in three occasions until 24h postoperatively, side effects and patient satisfaction are monitored.

Results: We hypothesize that the addition of a sciatic block to a femoral nerve block can give a clinical significant reduction in post-operative TKA pain scores (on the Visual Analogue Scale (VAS) of 1.5 or greater between the intervention and control groups). We hope to start statistical analysis soon and finish by December 2011. With the results of this study we hope to give a valuable contribution for the ongoing debate of post-operative analgesia after TKA.

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**Paper No: 894.00**

**Intrathecal morphine vs. epidural in caesarean section**

Diego Garcia Picasso, Ignacio Delaporte, Ezequiel Pugente, Maximiliano Vargas and Mauro Gobbi

Asociación de Anestesiología, Analgesia y Reanimación de Buenos Aires AAARBA

**Introduction:** Several studies have examined different postoperative analgesia protocols in caesarean sections (CS) (1,2,3). In Argentina, the most common method used is the continuous intravenous analgesia with weak opioids associated with non-opioid analgesics. The morphine used in the neural axis has proved to be an effective and safe way as a postoperative analgesic method in CS (1,3) without producing major adverse effects (4).

**Objectives.** We aimed at comparing the analgesic equivalence of 100 mcg of intrathecal morphine with 1 mg of peridural morphine for postoperative analgesia after CS in the first 24 hours and also to assess the adverse effects.

**Methods:** We conducted a double blind randomized and controlled clinical trial on 200 patients who underwent a CS. The subjects were randomized into two groups: IT (intrathecal, hyperbaric bupivacaine 0.5% 10 mg, fentanyl 20 mcg, morphine 100 mcg) and EP (Epidural, Lidocaine 2% with epinephrine 17 ml, fentanyl 100 mcg, morphine 1 mg). They all received 400 mg of ibuprofen every 6 hours and 10 mg of metoclopramide every 8 hours, after the surgery. If the pain was moderate (> 4 and < 7) in 10 according to EVN (Verbal Numeric Scale)), 25 mg of tramadol EV were administered, if the pain was severe (> 7) the dose increased to 50 mg. The total number of rescues was measured in the first 24 hours, as well as the time until the first rescue and the pain intensity according to EVN. The analgesic satisfaction was assessed after 24 hours according to a scale from 0 to 100. The adverse effects were registered according to a scale from 0 to 10: pruritus, sedation, respiratory depression and nauseas. The chi-square test was applied for proportions comparison, considering significant a p < 0.05. Results: From the 200 patients, the 6.3% showed moderate pain and the 2.8% experienced severe pain at some point of the day. 6.8% had moderate nauseas, 1.4% severe, 16.7% moderate pruritus and 2.8% severe. There were no significant differences with respect to pain, nauseas or pruritus. There was no profound sedation or respiratory depression. The analgesic satisfaction was higher than 90 in 95% of the patients in both groups.

**Conclusions.** Both intrathecal and epidural morphine proved to be safe and effective alternatives for postoperative pain in CS without showing any significant differences in regard to analgesic quality and adverse effects. Even though, based on our clinical experience during the surgery, we prefer the intrathecal morphine.

**References**


**Paper No: 970.00**

**Management of severe mitral stenosis during pregnancy by a multidisciplinary care team**

Summer Syed, Omid Salehian, Tomas Van Helder, Madhu Natarajan and Desigen Reddy

Hamilton Health Sciences Corporation, McMaster University Medical Center

**Introduction:** Familiarity with the treatment of cardiac diseases during pregnancy is becoming increasingly important for cardiologists as they join the team of obstetricians and...
anesthesiologists in the care of these complicated patients (1-3). Severe mitral stenosis is a high-risk lesion in pregnancy that can have serious implications (4,5). We present a 37-year-old pregnant patient who came to our cardiology department with severe rheumatic mitral stenosis (valve area 0.7cm², mean gradient 22mmHg) and chronic atrial fibrillation.

**Objectives:** We demonstrate a multidisciplinary approach to managing a complex cardiac patient during pregnancy.

**Methods:** Our hospital is a tertiary care center that cares for complex obstetrical patients and gets referrals from the entire region. Our team consisted of cardiac and obstetric anesthesiology, adult cardiology, interventional cardiology, hematology, and obstetrical staff. We had regular team meetings at each stage of the pregnancy with a full plan for all stages of labor, delivery and post-partum care. All specialists were equally involved in the care of the patient.

**Results:** Initially the patient presented to cardiology with atrial fibrillation and mild symptoms of mitral stenosis despite being placed on bed rest. As her pregnancy advanced, her symptoms became progressively worse. She had multiple echocardiograms throughout the pregnancy to track the progression of her disease. At 29 weeks gestational age, she required intervention with percutaneous balloon valvotomy. The entire team was present for the valvotomy in case of any complications requiring emergent delivery of the baby. This required coordination between two hospital sites. Both she and the baby were fully monitored during the procedure. The valvotomy was successful in improving her valve area and decreasing her mean gradient from >20 to 10mm Hg. This procedure allowed her to tolerate her third trimester. At 36 weeks she had premature rupture of membranes and went into active labor requiring an emergent operative delivery with a general anesthetic. Since all the details for her care were well documented, there was a clear plan for the on call team to follow and she delivered a healthy baby girl. Post delivery she was transferred to the coronary care unit and both she and baby went home after a few days.

**Conclusions.** It is vital to have a multidisciplinary care team involved in the care of complex patients during pregnancy. This team needs to have regular meetings and discussion with the patient to ensure that there is a well-documented care plan in case of emergency.

**References**


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**Paper No: 971.00**

**Impact of general anesthesia on in vitro fertilization outcome**

Martin Buffa1, Gloria Messina1, Cecilia Buffa1, Viviana Caride1 and Gustavo Martinez2

1 Anesthesiology Department. Fertilidad San Isidro, Buenos Aires. Argentina and 2 Reproductive Medicine. Fertilidad San Isidro, Buenos Aires

**Introduction:** The use of general anesthesia during In Vitro Fertilization (IVF), remains controversial since it could interfere with human oocyte fertilization and embryo development and implantation. Day 5 embryo transfer (ET), provides an excellent model to evaluate its possible negative effect.

**Objective:** Compare the impact of general anesthesia vs. conscious sedation on IVF outcome with day 5 ET.

**Material and methods:** Four hundred and thirty eight consecutive oocyte retrievals followed by day 5 ET were included. Patients were divided according to the anesthetic technique, in 2 groups. Group A: (333 cases) conscious sedation with

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**Table 1. Comparative Results**

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<td># of embryo transfers</td>
<td>333</td>
<td>105</td>
</tr>
<tr>
<td>Age</td>
<td>35.5 ± 4.1</td>
<td>35.2 ± 3.9</td>
</tr>
<tr>
<td>Total oocytes retrieved</td>
<td>11.8 ± 6.6</td>
<td>11.3 ± 6.8</td>
</tr>
<tr>
<td>Mature oocytes retrieved</td>
<td>8.5 ± 3.7</td>
<td>8.1 ± 3.8</td>
</tr>
<tr>
<td>Fertilization rate</td>
<td>2301/2830 (81%)</td>
<td>723/851 (85%)</td>
</tr>
<tr>
<td>Abnormal fertilization</td>
<td>65/2830 (2%)</td>
<td>34/851 (4%)</td>
</tr>
<tr>
<td>Cleavage rate</td>
<td>2255/2301 (98%)</td>
<td>706/723 (98%)</td>
</tr>
<tr>
<td>Day 5 embryo development</td>
<td>1025/2301 (45%)</td>
<td>354/723 (49%)</td>
</tr>
<tr>
<td>Day 5 embryos stage Morulae</td>
<td>113/1025 (11%)</td>
<td>31/354 (9%)</td>
</tr>
<tr>
<td>Early blastocyst</td>
<td>92/1025 (9%)</td>
<td>17/354 (5%)</td>
</tr>
<tr>
<td>Expanding blastocyst</td>
<td>399/1025 (39%)</td>
<td>128/354 (36%)</td>
</tr>
<tr>
<td>Expanded blastocyst</td>
<td>391/1025 (38%)</td>
<td>168/354 (47%)</td>
</tr>
<tr>
<td>Hatching blastocyst</td>
<td>30/1025 (3%)</td>
<td>10/354 (3%)</td>
</tr>
<tr>
<td>Embryos transferred</td>
<td>2.1 ± 0.6</td>
<td>2.1 ± 0.7</td>
</tr>
<tr>
<td>Clinical pregnancy rate</td>
<td>166/333 (50%)</td>
<td>51/105 (49%)</td>
</tr>
<tr>
<td>Implantation rate</td>
<td>199/701 (28%)</td>
<td>62/221 (28%)</td>
</tr>
<tr>
<td>Miscarriage rate</td>
<td>17/166 (10%)</td>
<td>4/51 (8%)</td>
</tr>
<tr>
<td>Ectopic pregnancy</td>
<td>2/166 (1%)</td>
<td>1/51 (2%)</td>
</tr>
<tr>
<td>Delivery rate</td>
<td>148/333 (44%)</td>
<td>46/105 (44%)</td>
</tr>
</tbody>
</table>
midazolan, dextropropoxyphen, and dipyrone or ibuprofen, and Group B: (105 cases) general anesthesia with midazolan and propofol. Both groups were comparable regarding age, ovarian response and number of transferred embryos. Unpaired t test or Chi² were used for statistical analysis as appropriate.

**Results:** A higher fertilization rate and percentage of embryos reaching day 5 transferable stage and expanded blastocyst stage were observed in Group B [Table1].

**Discussion.** The optimal anesthetic technique for IVF oocyte retrievals is still controversial. General anesthesia may be a better option regarding patients comfort and operators ease to complete the procedure in a shorter time without patient movements or complaints.

**Conclusion:** General anesthesia does not seem to have a negative effect on the embryo developmental potential nor on IVF cycle success. The present findings should be confirmed with a prospective randomized trial.

**Paper No: 993.00**

**Hand-assisted Laparoscopic Hepatectomy for transplant with living donor. Anesthetic Management Report. Initial Experience in Argentina**

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**Introduction:** Numerous technical-surgical advances of anesthesia and reanimation are allowing the extension of the laparoscopic hepatic surgery indications (3). We describe our initial experience in the anesthetic management of the hand-assisted laparoscopic hepatectomy with living donor as an alternative in the liver transplantation.

**Objectives:** Analyze the anesthetic management during the laparoscopic hepatectomy for living donor in our transplant program.

**Methods:** A retrospective analysis of two related living donors who underwent a hand-assisted laparoscopic hepatectomy in the period of 2010 was performed.

**Results:** The laparoscopic resection was successfully performed in the two analyzed donors. The middle age and weight of the donor was 29.5 years old and 59.75 Kg respectively. In both cases, the mother was the donor. The surgical time was of 590 minutes (640-540 min). Hemodynamic instability was not registered during the surgery. The lowest registered intraoperative temperature during the surgery reached 36°C; the axillary temperature average was 36.8°C in the Intensive Care Unit. All patients were extubated in operating room. One of the donors required a transfusion of 2 blood units since the Hb decreased from a preoperative value of 14.3 g / dl to 7.1 g / dl during the surgery. Hourly diuresis was an average of 100 ml during the surgery. The time of hospital stay was of 1 day in Intensive Care Unit and 2 days in general room. One of the patients showed temporary elevation of the intraoperative lactate; in both patients, the serum bilirubin, TGO and TGP increased until the first postoperative day, and also a light increase in the INR was registered. Related laparoscopic complications were not observed.

**Discussion.** The anesthetic management in the donor patient who underwent a partial laparoscopic hepatectomy for living donor is aimed at preventing mortality, minimizing the donor’s morbidity and optimizing the resected hepatic segment state. Evidence of other centers shows that this type of procedure is carried out with minimally invasive anesthetic techniques(1). In our short experience, this type of surgery cannot be performed without invasive monitoring due to the extension of our surgical times.

**Conclusion:** The left lateral laparoscopic hepatectomy is a safe technique in transplant centers that have previous experience in laparoscopy, surgery and hepatic anesthesia (3),(2). Besides providing anesthetic safety to the donor, the anesthesiologists role is to contribute to the optimization of the donated graft(1).

**References**


**Paper No: 1007.0**

**Retrobulbar versus peribulbarblock: incidence of apnic episodes**

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**Introduction:** The challenges of anesthesia on ophthalmic surgery are somewhat less serious but it still requires from the anesthesiologist point of view not only good technical expertise, such as a thorough knowledge of the anatomy and physiology of the eye, as well as specialty ophthalmic surgical procedures. In the 80’s, retrobulbar anesthesia was the only alternative to general anesthesia on ophthalmic procedures but there were complications well known, such as the simple eye pain, retrobulbar hemorrhage, globe perforation, optical nerve atrophy, seizures, reflecting oculocardiac, trigeminal nerve block and even respiratory arrest. In 1986, peribulbar anesthesia was introduced as a safe and effective alternative, especially, to the trabulbar option. However, this procedure is also now been questioned.

**Objective:** This study aims to call attention to the possibility of sleep apnea during the application of peribulbar procedure.

**Methodology.** The methodology applied was that of a qualitative approach, based on current literature and case reports already published.
**Results and discussions.** During a multicenter study, Davis and Mandel 2 compared and analyzed 16,224 peribulbar procedures, establishing types of complications, such as, hemorrhage expulsive (0.013%), orbital hemorrhage (0.74%), perforation of the globe (0.006%) and convulsion (0.006%). Also, a rare, very serious and underreported complication during the peribulbar procedure was the anesthesia of the brainstem, with consequent respiratory failure. Freitas and Espirandelli 1, and Ribeiro 3 reported two cases of apneoa after peribulbar procedure. Both happened on women on their fifties, during a retinopexy surgery with scleral implant and extra capsular cataract extraction and lens implants, respectively. It is true that the needle’s size, as well as the technique used, may have contributed to anesthetic injection to the optic nerve sheath and hence into the epidural space. In the cases reported all precautions were taken and yet the complications occurred. Yet, another issue that would interfere in the results it would be the anatomical variation and the change of position of the optic nerve. However in the cases studied, CT scan of the orbits showed no abnormality.

**Conclusion:** The peribulbar anesthesia although advantageous in relation to the retrobulbar, is not free of serious complications, such as apnea. Therefore, it is of vital importance that all ophthalmic surgeries take place at clinic units where there are resuscitation equipment and the constant presence of an anesthesiologist during all the procedure so that appropriate management takes place if there is any complication.

**Keywords:** Peribulbar block; Complications; Apnea

**References**


**Paper No: 1015.0**

**Ultrasound Usage In Thrombotic Central Venous Catheterization: A Case Report**

Huseyin Sen, Gokhan Inangil, Murat Kuyumcu, Hakan Cansiz and Guner Dagli

**Introduction:** Central venous catheterization has been routinely used for administration of drugs and blood products, fluid resuscitation and central venous pressure monitoring in patients undergoing cardiac surgery. However, the insertion of catheter sometimes causes complications which are difficult to treat. Thus additional attempts such as ultrasound usage are needed during this procedure.1 In addition to its role for the selection of the vein used for catheterization ultrasonography can also minimize the complications related to venous catheterization procedure.2

**Case Presentation.** A 72 year-old (89 kg) male was scheduled for coronary artery bypass surgery. After five-lead, two-channel ECG, SpO2 and invasive blood pressure monitoring via radial artery cannulation, and induction of anesthesia; central catheterization via right internal jugular vein was planned. The patient was placed in the trendelenburg position and needle was advanced. Although the location of the vein was confirmed by the aspiration of venous blood, a J-tip guidewire had not been able to be advanced more than 14 cm. Then guidewire was removed and blood was aspirated for control purpose. Free blood flow was seen and the wire had been re-advanced. However, resistance to the guidewire again had been encountered at 14th cm of the right internal jugular vein. After that we planned to use of catheter insertion by means of a ultrasonography guidance. During the ultrasonography visualization we had noticed a large thrombus occupied the right internal jugular vein. Finally, right internal jugular vein catheterization had to be abandoned and left internal jugular vein was used successfully for central venous catheterization via a 7 Fr 2-lumen catheter under ultrasonography visualization.

**Discussion.** Various precautions have been reported for prevention of complications in central venous catheterization. Physician’s experience and use of ultrasound visualization are important factors. Ultrasound reduces the mechanical complications of central venous catheterization with real time visualization of the stenosis and variations of the veins.3 Developing technology makes ultrasound more portable and smaller so that they can be more practically used in medical processes and we believe that invasive procedures can be achieved more easily and appropriately with the guidance of real time ultrasound imaging.

**References**


**Paper No: 1021.0**

**Massive Intraoperative Venous Air Embolism: A Case Report**

Erturk Yedekci, Gokhan Inangil, Murat Kuyumcu, Hakan Cansiz and Sezai Ozkan

**Introduction:** Intraoperative venous air embolism is a serious and fatal complication and can be seen more frequently
during posterior fossa craniotomies performed in sitting position, cervical spinal surgeries and the insertion or withdrawal of central venous catheters.\(^1\)\(^2\) Herein we describe anesthetic management of a patient with intraoperative massive venous air embolism patient.

**Case Presentation.** A 51 years old (ASA-II) female with posterior fossa hematoma scheduled for craniotomy. The patient was taken to operation room and monitored with five cables ECG, SpO\(_2\) and NIBP. Following the induction of anesthesia, invasive monitoring was achieved via internal jugular venous catheterization with radial artery cannulation. Then sitting position was given to the patient and surgery was initiated. Suddenly the patient’s SpO\(_2\), EtCO\(_2\), invasive arterial pressure and heart rate decreased from 100% to 80%, 33 to 18, 120/68 mmHg to 70/30 mmHg, 80 beats to 46 respectively at the 105th minute of the ongoing surgery. We suspected from venous air embolism surgeons were informed and possible venous air is tried to be aspirated by central venous catheter. A total amount of 200 cc blood and 70 cc air is aspirated. The surgeons closed transverse sinus with saline soaked cloth indicating the possible surgical focus site for air embolism. The patient was given left-side-head-down position and ventilated with 100% O\(_2\). Fluid resuscitation is accelerated, 10 mg ephedrine is used. About 2 minutes later, the patient’s hemodynamic parameters SpO\(_2\), EtCO\(_2\) improved to 99% and 34 respectively. Operation was undertaken without any other complications and the patient is taken to ICU without any other problems.

**Discussion.** Venous air embolism can be seen with neurosurgical operations in sitting and half-sitting positions. In addition to routine monitoring, central venous and arterial catheterizations for invasive measurements are necessary for early diagnosis and treatment. In our case, early intervention prevented our patient from probable more serious complications. A sudden drop both in end-tidal CO\(_2\) concentration and invasive blood pressure are significant findings for the early diagnosis of air embolism. Such hemodynamic disturbances should be a warning to anesthesiologists.

**References**


**Paper No: 1056.0**

**Complications during pediatric cardiac catheterization**

Marisa Carnevali\(^1\) and Carmen Pérez\(^2\)

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**Background.** Interventional catheterization has replaced or improved in the last years some surgical procedures and the conditions of patients before surgery. Due to the increase of technological advances, these procedures inside the catheterization laboratory in pediatric patients with congenital heart disease, have led to an increase in the demand for anesthesiologists. The anesthesiologist must provide safe patient care and choose an appropriate anesthetic technique for each case. Objectives: To determine the complication rates during pediatric cardiac catheterization in our institution and their respective risk factors.

**Methods:** Retrospective analysis was made of the medical records of patients who required sedation or general anesthesia for diagnostic and interventional cardiac procedures, from January 2008 to December 2009.

**Results:** The data was obtained from 625 pediatric patients with median ages of 5.89 ± 4.66 years, and median weight was of 21.08 ± 14.43 kgs, for males 49% and 51% for females. 116 diagnostic procedures, 386 interventional procedures and 123 transesophageal echocardiographies (TEE), with sedation or general anesthesia, were revised. The main diagnosis were: ventricular septal defect (VSD) (n = 184; 29.46%), atrial septal defect (ASD) (n = 120; 19.2%), patent ductus arteriosus (PDA) (n = 105; 16.8%), valvular pulmonary stenosis (VPS) (n = 39; 6.24%) and other diagnosis represented a 28.32%. The complication rate was 6.08% (n = 38), the average age was 5.22 years, without correlation considering age and sex. The most frequent ones were bronchospasm (n = 6; 15.78%), atrioventricular block (n = 4; 10.52), ventricular tachycardia (n = 4; 10.52%) and bleeding (n = 3; 7.89%). These events were mostly occurring on patients with VSD, although only represent 8.24% from total for this diagnostic. Complications were observed in 20 patients undergoing interventional procedures, with a significant correlation for complications. The mortality rate was 1.92% (n = 12), and the average age was 6.75 years. The deaths occurred more often during interventional procedures.

**Conclusions.** Complications in pediatric cardiac catheterization are diverse. The anesthetic complications are related to ventilatory disorders, and they are benign. Although, the intrinsical complications related to the procedures are frequent and they have the highest mortality cardiac rates. The risk factors include the type of heart defect and the type of intervention.

**References**


**Paper No: 1075.0**

**Fluid therapy for ambulatory surgery under spinal anaesthesia**

Juan Carlos Sosa Nicora, Diana Marcela Lopez Cubillos, Victor Murga Marquinez and Josep Maria Bausili i Pons
Department of Anesthesiology and Critical Care, Igualada Hospital, Barcelona.

Introduction: A large percentage of Ambulatory Surgery procedures can be performed with spinal anesthesia techniques. Little data exists on optimal dosing of peri-operative fluid therapy recommended to perform these procedures with minimal complications.

Objectives: To determine which combination of anesthetic and fluid achieve a better result based on sufficient duration of the blockade and a lower complication rate.

Methods: Cohort study of ASA 1 and 2 patients between 18 and 85 undergoing outpatient surgery of different surgical specialties with estimated surgical time of 90 minutes or less that included 75 patients with female predominance (57.3% n = 43) and an age average of 51.3 years. Exclusion criteria included ASA 3 or 4, severe uncompensated heart or respiratory disease, and patient refusal. In the pre-anesthesia room each patient was assigned by simple randomization to one of six possible combinations of fluid and anesthetic: Saline (S) Polyionic Crystalloid (Plasmalyte ®) (P), Polyionic Colloid (Volulyte ®) (C) in a dose of 500 ml. in each case (250 ml pre-induction and intraoperative 250 ml) combined with mepivacaine 50 mg. (M) (3.0 ml) or 50 mg prilocaine (P) (3.0 ml). NIAP and HR were measured in the induction room, at 5 and 15 minutes post spinal anesthesia, at the end of the operation, at admission and discharge from the PACU. The complications during a period between the onset of anesthesia and discharge along with the duration of motor block were registered. 23 patients received Saline, 26 patients received Polyionic Crystalloid, and 26 patients received Polyionic Colloid. Sub Groups: SP 11 patients, SM 12 patients, PP 13 patients, PM 13 patients, CP 12 patients and CM 14 patients. The variables were measured with Student’s t-distribution using SPSS statistical analysis package Ver. 19 (IBM ®).

Results: The overall complication rate was 42.7%. The complications were more frequent in the group receiving saline (65.2%, p = 0.36) than the Polyionic Crystalloid (30.8%, P = 0.36) or colloid (34.6%, P = 0.36). The most common type of complication was hypotension. The mean recovery time of motor blockade for mepivacaine was 124.1 minutes and for prilocaine was 97.22 minutes.

Conclusion: The combination of 500cc of polyionic crystalloid with 50 mg mepivacaine resulted in the lower complication rate (23.1%, P = 0.03) with acceptable recovery times (132 minutes, p = 0.117).

References

Noncardiogenic pulmonary edema from massive irrigation fluid absorption during hysteroscopic myomectomy: a case report
Juan Carlos Sosa Nicora, Sergi Suarez Diaz, Diana Marcela Lopez Cubillos and Josep Maria Bausili i Pons

Department of Anesthesiology and Critical Care, Igualada Hospital, Barcelona.

Background. Gynecological hysteroscopy is a relatively safe procedure, used for diagnosis and treatment of intrauterine pathologies; with a low percentage of complications.

Case Presentation. An otherwise healthy 44-year-old woman presented for hysteroscopic myomectomy. She underwent spinal anesthesia uneventfully. For surgical hysteroscopy a roller pump and a hysteroresectoscope were used along with normal saline as the distending solution with a perfusion pressure of 100 mmHg. Within 35 min, she complained of chest discomfort and was sedated. Later she presented tachypnea, tachycardia, hypertension and low saturation unresponsive to bag and mask ventilation with 100% oxygen. Massive facial edema developed rapidly. An anaphylactic reaction was suspected and treated with 125 mgr of methylprednisolone and 1 mgr of IV adrenaline with no improvement. Orotracheal intubation was performed and pink frothy fluid came out of the ET. Fluid overload was suspected as the most likely diagnosis, intravenous furosemide was given and the hysteroscopy was discontinued. Laboratory findings revealed severe respiratory acidosis. She was treated with bicarbonate bolus, furosemide infusion, IV manitol and dopamine infusion. We retrieved 500cc of liquid through the endotracheal tube. A thorax x-ray confirmed the presence of massive pulmonary edema. After a highly negative fluid balance, the respiratory parameters improved very rapidly and she was extubated in the ICU 7 hours later. During the following days there were also signs of dilutional coagulopathy and anemia.

Discussion. Fluid overload due to absorption of irrigation fluid is seen in approximately 0.2% of patients. Hypovolemic syndrome and hyperchloremic metabolic acidosis have been reported in NS overload. In the mentioned case, a positive fluid balance of almost 6.5 l of NS was calculated; this was not identified before due to an error in the assembly of the circuit and bypass of the alarms thus leading to noncardiogenic pulmonary edema, anasarca, respiratory acidosis, hipocalcemia, coagulation and hemoglobin dilution, which resolved with forced diuresis and cardiopulmonary support. She was discharged after 7 days of the procedure.

Conclusion: General anesthesia and sedation can mask symptoms of irrigation fluid absorption. Anesthesiologists must monitor fluid balance and perfusion pressure, of
the irritation fluid at all times to avoid this event. The use of normal saline is not without life threatening complications.

References

Paper No: 1091.0

Day surgery at university of Uyo Teaching Hospital, Uyo: are we transferring the burden of care?
Catherine Eyo1, Isaac Udo2, Emem Akpanudo2 and Aniema Udo3
1 Department of Internal Medicine, University of Uyo Teaching Hospital, Uyo, 2 Department of Surgery, University of Uyo Teaching Hospital, Uyo and 3 Department of Anaesthesia, University of Uyo Teaching Hospital, Uyo

Introduction: The practice of day surgery and anaesthesia is increasingly popular. It is safe and nearly 50–70% of surgeries in the UK and the United States of America are now performed on day stay basis.1-3 It has many potential benefits including reduced disruption in patients normal lives since day stay present for surgery and anaesthesia and is discharged home on the same day.2 It is however thought that it leads to a transfer of burden postoperative care to caregivers who are often times the spouse, significant other and a responsible adult in cases of children.3

Objective: To assess the impact of day procedure on the functional status of patients in the immediate postoperative period as a measure of the burden placed on the caregiver.

Method: Patients who had daycare procedures in a general surgery unit in 2008 were assessed on their postoperative visit a week later for any adverse effect of the procedure on their functionality at home. Information on age, sex, type of procedure, pain, bleeding and level of activities (use of toilet, preparation and taking of meals or drinks and walking about in the compound) were entered into a format and analyzed.

Results: Ninety patients were involved in the study. Seventy six (77%) complained of varying degrees of pain at operation site for which simple oral analgesics were effective. 23 (23%) had no complaint whatsoever and there was no report of bleeding from the operation site by any of the patients. Eighty five patients (86%) were independent, 14 (14%) partially dependent and none completely dependent.

Conclusion: Day surgery would appear not to significantly alter the level of activity of patients in the immediate postoperative period, it does not also appear to involve transfer of care to the community or caregiver though this may depend largely on the type of surgeries performed. A more extensive study employing standardized instrument of assessing quality is required to verify this conclusion.

Keywords: Day Surgery; Level of Activity; Burden of Care

References

Paper No: 1093.0

Levobupivacaine 0.75% and hyaluronidase for peribulbar blockade in cataract surgery. is there any ideal volume?
Flavia Lopes Delgado, Daniel Espada, Lahoz Americo and Massafumi Yamashita

Introduction: Since the introduction of hyaluronidase in ophthalmology peribulbar blocks for cataracts extractions, different authors describe the most variable concentrations of hyaluronidase provide adequate anesthesia.

Objectives: The goal of this study was to analyze the influence of hyaluronidase, at different concentrations, in the anesthetic volume minimum necessary to provide peribulbar anesthesia with levobupivacaine 0.75% without epinephrine.

Methods: After approval by the committee of medical research and ethical, 210 consecutive ocular surgery patients were randomized into seven groups: 7.5UTR/ml, 15UTR/ml, 20UTR/ml, 30UTR/ml, 40UTR/ml, 50UTR/ml e 100UTR/ml. Peribulbar block was performed with injections of levobupivacaine 0.75%. Using parallel up–down sequential allocation from a 4.5 ml starting volume, the volumes in all the groups were changed using a testing interval of 0.5 ml according to the quality of globe akinesia, fifteen minutes after injection the block was deemed unsuccessful or failure. The minor effective local anaesthetic volume was calculated for all groups using the allocation method and Up-Down, Massey and Dixon, and also by the ROC curve.

Results: The groups were considered, significantly, similar the parameters sex, age, height, weight, ASA status and eye lateralization. The median effective anesthetic volume, by using the Up and Down method, required for clinical efficacy was 3.39 ml (standard deviation (σ), ± 0.18) in group H7,5UTR.ml–1, 5.21 ml (σ, ± 0.27) in group H15UTR.ml–1, 5.90 ml (σ, ± 0.32) in group H20UTR.ml–1, 4.22 ml (σ, ± 0.24) in group H30UTR.ml–1, 4.70 ml (σ, ± 0.20) in group H40UTR.ml–1, 4.29 ml (σ, ± 0.20) in group H50.ml–1 and 3.14 ml (σ, ± 0.15) in group H100UTR.ml–1.
Conclusions: Reduced concentrations of hyaluronidase associated with local anesthetic solution improves the diffusion of local anesthetics resulting in an adequate peribulbar block, as well as that increasing the high concentration of hyaluronidase.

References

Paper No: 1120.0

A novel approach to intraoperative peroneal nerve function monitoring during tibial osteotomy
Elie Joseph Chidiac and Michael Templer
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Introduction: Tibial osteotomy is commonly used for the treatment of varus deformity and osteoarthritis of the medial compartment of the knee (1-3). Peroneal nerve palsy resulting in weakness or paralysis of the extensor hallucis longus muscle (weakness on dorsiflexion) is a common complication of this procedure (4-6). Injury is thought to occur as a result of traction on the peroneal nerve either by intraoperative retraction, or by anatomic displacement of the osteotomy fragments (5).

Objectives: Various strategies have been described to access motor function intraoperatively including EMG (7,8) and direct nerve stimulation (9). These techniques enable quantification of the neural function throughout the entire operation (7), monitor the effect of ischemia on peripheral nerve function (7) and predict postoperative neurologic deficit (10). We describe the use of ropivacaine (NaropinTM) for selective sensory blockade under combined spinal and epidural anesthesia to assess motor function of the peroneal nerve intraoperatively.

Methods: Twenty one patients presenting for tibial osteotomy received a combined spinal-epidural anesthetic using 12.5 mg of intrathecal ropivacaine and an epidural infusion of 7.5cc/hr of 0.5% ropivacaine. Prior to surgery, a sensory level was checked and surgery proceeded. In all cases, ropivacaine provided adequate sensory blockade of the lower extremities while maintaining a moderate degree of motor function. During surgery a low dose IV infusion of propofol (50-75 mcg/kg/min) was used to provide sedation. At critical points during the surgery, upon the surgeons' request, the propofol infusion was stopped and the patient was awakened. Motor function of the peroneal nerve was then assessed by having the patient dorsiflex their foot.

Results: Tibial osteotomies are commonly performed under neuraxial anesthesia with bupivacaine. Ropivacaine produces relatively less blockade of motor fibers than bupivacaine but with similar sensory blockade. This is because low pKa and high lipid solubility (bupivacaine) are associated with preferential blockade of A-fibers, whereas high pKa and low lipid solubility (ropivacaine) are associated with preferential blockade of C-fibers (11). When used for prolonged femoral nerve blocks in minipigs, there was more tissue damage and muscle apoptosis with bupivacaine than ropivacaine (12).

Conclusion: The selective sensory block provided by ropivacaine may be beneficial in monitoring intraoperative motor function and may provide early detection of nerve injury. Further studies are warranted.

Paper No: 1139.0

Module based anesthesia training program in Mongolia
Ganbold Lundeg
Health Science University, Mongolia

Introduction: The main aim of the World Federation of Societies of Anesthesiologists (WFSA) is “to make available the highest standards of anesthesia, pain treatment and resuscitation to all peoples of the world”1. In spite of major advances in technology and training, the majority of the world’s population, still does not have access to acceptable standards of anesthesia and analgesia. Between the years 1960-2003, 350 trainees graduated as anesthetists. The training curriculum has been based on didactically outdated and fragmentary Russian education program. Currently 185 doctors are practicing as anesthesiologists in Mongolia2. Many hospitals, especially in district hospitals have a shortage of specialists in anesthesia, emergency medicine and intensive care doctors. There is a high turnover of anesthesia professionals in this country. One reason for this has been an inadequate curriculum in anesthesia training and postgraduate education. Due to inadequate training it will graduated low competent doctors with higher turnover, frequent shift into other specialty results heavy workload for rest of anesthesiologist appropriately less time to self learning and training the others. This is viscous circle needed to interrupted in Mongolia anesthesia education3.
The main objective of the training program Mongolia Society of Anesthesiologists (MSA) is to achieve desirable standards of training for anesthesiologists in international standards.

Methods: To achieve the objectives of MSA sent their key trainers to Bangkok Anaesthesia Regional Training Centre (BARTC) of the World Federation of Societies of Anesthesiologists (WFSA). In the past 16 years, BARTC has provided a one year training for 60 doctor anesthesiologists from 6 Asian countries. 19 doctors from Mongolia graduated from the program. All of them went back home and have been important driving force in improving teaching, training and anesthesia practice at home. Other source for improvements in training progress in Mongolia is the education link with Australian Society of Anesthesiologists (ASA). With financial support from the ASA, has established a new training center in Ulaanbaatar and employed an training officer. The trainers of both Societies established a new training program for anesthesia that comprises of 17 different learning modules. This module based new program is helping to eradicate the previous deficits in education in Mongolia and to address some important obstacles to anesthesia education in Mongolia. Since 2008, this program launched and graduated 36 residents so far. As main textbook for our residents training is “Developing Anesthesia Textbook” written by Dr. Pescod and “Module based textbook” written appropriately low and middle income countries.

Results: To measure the effectiveness the module based training, evaluated based on questionnaire filled by residents graduates the program: The adequacy of training policy and its objectives are corresponding appropriately to their needs were -95.5%. The effectiveness of this training program is reported positive in 98.2%. The efficiency the training program financial were assessed as 100% by participants. The difficult points were pointed out: language barriers of residents, textbook translation into Mongolian language quality found as not satisfactory, trainers didactic competencies were low. The residents final examination test question marks increased compared 2005 with 2010 by 22.5% (74.2% v 96.3%), practical skill marks increased by 15.8% (80.3% v 95.5%).

Conclusions: The Anesthesia training program progress made as the result of training the key trainers at the WFSA- BARTC and mutual cooperation in anesthesia education with ASA members.

References
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Paper No: 1159.0

Half-day Surgery - A Four Hour Patient's Journey
Carmen Ingrassia De Cruzado and Ian Mc Lean

Introduction: Day surgery is the admission of selected patients to hospital for a planned surgical procedure, returning home on the same day. In a well controlled day care centre, without beds, we have been testing the hypothesis of half-day surgery i.e. admission to discharge within a 4-hour window.

Half-day surgery is particularly suited to providing patient focused treatment as it is safe, efficient and effective, and provides the least possible disruption to patients lives. This concept can increase capacity and help to meet waiting time targets at a cost effective way.

Method: Patient selection and optimisation is the key to success. Once a patient referral is received a decision is made as to accept or reject a patient for half-day surgery. Rejections are kept to a minimum as the referring physicians are familiar with our admissions criteria (ASA I, II, BMI <40). Once accepted, the patient is called to a pre-assessment clinic where they receive a one-stop protocol specific service and leave with an operation date. Anaesthetic pre-assessment is also carried out at this stage, if indicated.

Procedures carried out include Major 3 for surgery (e.g. Hernia repair, Arthroscopy) and Major 4 Anaesthetics.

The day before their procedure, all patients are called to remind them of fasting, medications, etc. and make sure they are fit to proceed. On the day of their procedure the patient is requested to arrive 30 minutes prior to their scheduled theatre slot, the 4-hour journey starts. Following normal theatre checks and consent, the patient walks to the operations room where induction takes place on the table employing a comprehensive patient specific anaesthetic technique to improve safety and reduce time. On completion the patient is transferred to First Stage recovery where they wake and are observed and monitored routinely for 20 minutes. They are then escorted to the Second Stage recovery sitting area to have a hot drink and biscuits prior to discharge. The entire episode takes no more than 4 hours as this is one of the unit’s key performance indicators (KPI’s).

Results: We present results from a 12 month period of half-day surgery covering 409 GAs undergoing surgical procedures from Inter 2 to Major 3 (Inter 4 to Major 5 Anaesthetics) for Orthopaedic, Ophthalmic and General Surgery. Complications, PONV and re-admissions were under 0.5%.

Conclusion: The model of Half-day surgery has been tested within laboratory type conditions i.e. well managed surgical environment with a stable clinical team employing proven surgical techniques with the majority of the variables...
controlled. It has proved achievable and consistently safe as well as cost effective.

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Paper No: 1193.0

Regional cerebral oximetry for neurosurgery patient: opportunity to monitor brain oxygenation

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Introduction: Regional cerebral oximetry provides a window to the brain allowing direct, continuous, noninvasive measurement of changes in oxygen saturation of cerebral blood. Near-infrared spectroscopy (NIRS) is one of the methods for such monitoring and might be applied to the scalp (frontal parts) of patient. Despite of this one of the most important limitations in neurosurgery – it’s application difficulties. Due to this reason feasibility studies can show the cerebral oximetry availability for different neurosurgery patient groups. Objective: Estimate the feasibility to monitor cerebral oximetry for neurosurgery patients in operating room and in neurosurgery intensive care unit and possible basic disturbances for study.

Material and methods: Prospective trial took place in Neuroanaesthesiology Unit of Lithuanian University of Health Sciences Hospital. The monitoring was performed with INVOS® Cerebral/Somatic Oximeter, which is based on near-infrared spectroscopy (NIRS). The monitoring places were operating room, neurosurgery intensive care unit and regular neurosurgery ward. 27 patients were included to the study.

Results: 16 were withdrawn from the study due to registration limitations. Records of 11 patients were analysed (18.2% women and 81.8% men). Age of the patients ranged from 19 to 76 years (average 50.3 ± 18.3). Performed operations with successful monitoring were: 3 craniotomies and subdural haematoma evacuations after traumatic brain injuries, 1 transfenoidal adenomectomy, 2 eliminations of neoplasma, 2 endarterectomies, 2 extra-intra cranial anastomosis operations, 1 clipping of aneurysma. Nine patients were monitored in operating room. Two patients were also monitored in neurosurgery intensive care unit and in traumatic brain injury department. The values of cerebral oxygenation in operating room were 62–82% before intubation and 72–93% in a period of operation. The biggest difference of cerebral oxygenation between brain hemispheres were registered for patient with traumatic brain injury: 42 and 68% before intubation, 60 ± 8.8 and 76 ± 4.0% during operation, 64 ± 4.9 and 80 ± 5.3% in the intensive care unit. The longest period for monitoring lasted 72 hour and the shortest – 2 hour (16.8 ± 27.3 hour).

Conclusions. Monitoring of regional cerebral oximetry for neurosurgery patient can be performed despite of that it has limitations, which includes surgery of frontal head’s region; application of Mayfield holder in the frontal region of the head; patients transferring from one department to another; intraoperative transcranial Doppler monitoring.

Paper No: 1210.0

Effective implementation of WHO surgical safety checklist

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Introduction: Surgery plays a cardinal role in global health care, with an estimated 234 million operations performed yearly [1]. At least half a million deaths per year would be preventable with effective implementation of the WHO Surgical Safety Checklist worldwide. The risk of complications is poorly characterized in many parts of the world, but studies in developed countries have shown a perioperative mortality from inpatient surgery of 0.4 to 0.8% and a major complications risk of 3 to 17% [2,3,4].

Objectives: The study was done to evaluate and improve the compliance in the use of the Checklist in two surgical centres of a district hospital in Slough, United Kingdom (Wexham Park and Heatherwood NHS Trust).

Methods: Recovery staff were given a single tick box format form to document the completion of the Surgical Safety Checklist in consecutive cases over a 1 month period. Considering the poor results of the first survey, a targeted education and theatre policy change campaign were implemented prior to another survey done 5 months later.

Results: The first survey done in February 2011 had enrolled 177 consecutive cases (127 Wexham Park and 50 Heatherwood) showed a poor compliance in Sign Out section of the Checklist with only 31% being filled and only 17% complete. After implementing education and new theatre policies a second survey was done in July 2011 (193 total, 139 Wexham Park and 54 Heatherwood). Overall improvement was seen in each part of the Checklist: Sign In 8.1%; Time Out 15.2%; Sign Out 20.2% and complete forms improved by 20.8%. The audit identified clearly which specialities, theatres, grades of surgeons and anaesthetists were associated with the compliance of each case.
**Objectives:** We evaluated the safety and efficacy of ketamine. The main pitfall in the completion of the surgical checklist seemed to be in the compliance of the surgical team in completing the sign out section of the checklist.

**Conclusion:** The WHO Surgical Safety Checklist is a useful tool in preventing perioperative mortality if used correctly. The adequate implementation can be monitored and improved by a simple survey process with profound improvement in patient safety as shown by this study. This survey showed that this compliance can be significantly improved in a short period of time by targeted education and theatre management policies. Overall improvement was seen in each part of the Checklist: Sign In 8.1%; Time Out 15.2%; Sign Out 20.2% and complete forms improved by 20.8%.

**References**

**Paper No: 1220.0**

**Sedation/Analgesia in outpatient autistic children with Ketamine S(+)**

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**Introduction:** Performing painful outpatient procedures in children and adolescents is a challenge for all; the patient, parents and health professionals. The communication and psychosocial interaction difficulty, as found in children with autism spectrum disorder, makes the procedure an even greater challenge, being that the anesthesiologist make it feasible in a safe manner.

**Objectives:** We evaluated the safety and efficacy of ketamine S(+) and midazolam as a protocol for sedation/analgesia during lumbar puncture in children with autism.

**Method:** As part of the diagnostic investigation for the clinical trial CAST (Corticosteroids for Autism — A Scientific Trial), 20 male autistic children between 3-7 years of age were evaluated who underwent lumbar puncture to collect 10 ml of cerebrospinal fluid (CSF). The protocol consisted of oral midazolam, 1mg/kg (maximum 20mg) as premedication 30 minutes before admission to the procedure room, and ketamine S(+) intramuscular or intravenous 3-5mg/Kg and 1-3mg/Kg respectively, and for sedation and analgesia. All subjects also received atropine 0.01mg/kg and ondansetron, 0.15mg/kg. They were monitored with NIBP, ECG and continuous peripheral O2 saturation from the beginning of the procedure until complete recovery. The incidence of side effects/complications and variability of vital signs were compared between the two groups.

**Results:** Ten patients received Ketamine S(+) IV (group 1), while ten others received Ketamine S(+) IM (group 2). The comparison between the two groups showed that neither age nor body weight have a statistically significant difference (p = 0.35 and 0.53). The average Ketamine S(+) dose was 3.37 mg/kg for group 1 and 1.61 mg/kg for group 2. The lumbar puncture was successful in all patients, and the sedation administration time to discharge did not differ significantly between the two groups. Common side effects were salivation (3IM and 2IV) and vomiting (2IM and 3IV). As for complications there was one case of laryngospasm in group 1, and symptoms of low CSF pressure after the procedure in three patients. These results are preliminary.

**Conclusions:** Ketamine S(+) IV or IM (after premedication with midazolam) was shown to be safe and effective as a protocol for sedation/analgesia for lumbar puncture in autistic children. Side effects and complications were rare and easily managed. Promotion and conflicts of interest: Laboratório Cristália provided the medication used in the research. Approved by the CEP: CMM/HUAP No. 294/2010

**References**

**Paper No: 1258.0**

**Hypnotic depth and duration measured by bispectral index with propanidid versus propofol during the curettage in abortions**

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**Introduction:** The use of hypnotics dates back many years, have used a countless number of agents to achieve hypnosis, however currently there is no ideal drug that meets all the anesthesiologist pharmacological characteristics required. The propanidid this it was introduced to the clinic by hiltmann in the year of 1963-1975; its use was suspended due to severe hemodynamic effects caused by cremophor el is used as a solvent and not by the same propanidid, which showed the large release of histamine that was causing anaphylactic reactions occurred in hypersensitive patients. Recently cryopharma laboratories of guadalajara mexico changed their preparation for a solution with a new
Objectives: Compare the depth, time of action and recovery induced hypnosis propanidid 7 mg / kg and propofol 2 mg / kg, using bispectral index during curettage for abortions under 14 weeks gestation.

Material and methods: 62 Female patients 18 to 40. asa i with a diagnosis of abortion in all its forms, and pregnancy under 14 weeks gestation, undergoing suction curettage, divided into 2 groups, propofol group a (n = 31) and propanidid group b (n = 30 ). spss version 10.0 statistical analysis, using student's t test and mann-whitney test.

Results: Demographic data were statistically similar in both groups, as well as the time of curettage. surgical bis values with a value of p <0.002. maximum bispectral index value of p <0.0001. emersion bispectral index value of p <0.0001. With regard to surgical time value of p <0.0005; emersion time a p-value <0.01, and time to awaken a p <0.0002.

Discussion: When hypnosis is induced propanidid the first value is recorded as surgical deeper and you get faster than that induced with propofol (bisx, taq), the maximum hypnotic effect (bismax) is also higher and significant, it is interesting to note the time required both drugs to exert their maximum effect is not significant. The degree of satisfaction of patients receiving propanidid was better to have no pain during the administration of the drug, shorter and emergence in the state of consciousness without further drowsiness. Interestingly, there is activation of the respiratory center resulting in increased ventilatory rate at therapeutic doses, also the positive chronotropic effect observed, it must be further explored in future studies.

Conclusions: Propanidid 7 mg / kg has greater hypnotic depth, get it in less time and its elimination is higher compared to 2 mg / kg propofol.

References

Application of propofol for ambulatory anesthesia in gynecology patients

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In this effort are shown propofol application for ambulatory anesthesia in gynecology patients. Propofol is a short, effective immediately, anesthetic that is widely used in ambulatory anesthesia, with its properties for a quick introduction and awakening from intravenous anesthesia.

Method: In this study will be comparatively analyzed in two groups, 100 patients the age of 55-80 years, in a period of one year, in which the often (constantly) cause to implement the ambulatory anesthesia is metoragija prolongata.

Results: The second group, which was numerous, were analyzed patients with bronchitis chronika; astma bronhiale and patients with allergic disease with the ASA classification II. In patients with lung disease after prior premedication with Amp.Amylophilin 125-250mg. In infusion solution of 250ml 0,9%NaCl and Amp.Ranital and Reglan with initial TA140/90mmHg approached towards the introduction of intravenous anesthesia with 2mg. Dormikum,0,1mg.Fentanyl and Propofol 100mg. During and after intervention patients for all the time hemodynamically stable with TA from 110/70 to 130/90mmHg puls65-70/min and SaO2 od 99%. From laboratory values without major drawing of the hemoglobin of 10% compared with initial values. At the allergic patients in the premedication prior with Amp.Synopen i.m. and Urbason 60-80mg.i.v. with initial TA 130/80mmHg, puls80/min.i SaO2 100%, approached towards the introduction of intravenous anesthesia with 1mg. Dormikum,0,1mg.Fentanyl and 120-140 mg. Propofol. During and after intervention patients with stable vital signs TA110/70mmHg,puls 70/ min. and Sao2 100%. Another group of patients judged have to estimated with a) ASA III were cardiac patients and they have been directed to make an additional investigation: ECG, ECHO at the heart and laboratory analysis. From the results in more of them had been ascertained Myocardiophatia chronika so EF<55% and the same have been treated with adequate therapy prescribed by...
a cardiologist. From labaratoy analysis in 10% of them was found Trombocitoza Tr>500 and the same were on therapy with Sintrom prescribed by a transfusiology. Since it was taken cardiac therapy that was on the stage of premedication with initial TA 160/100mmhg,puls 70/min. and Sao2 od 96% access to an introduction to the intravenous anesthesia with 3mg.Dormikum; 0,1mg.Fentanyl and 40-70mg.Propofol. During and after intervention patients cardiocirculatory stable with TA 140/90mmhg,puls 60/min. and Sao2 from 97%.

**Conclusion:** From above we can conclude that in both groups of patients balanced with the provision of propofol, intervention has passed without major drawing of in hemodynamics, both during and after the intervention. With this one can be note benefit from the use of propofol in ambulatory anesthesiology in gynecological patients.

**References**


