

standard induction and maintenance of anesthesia with routine monitoring was placed in sitting position, and TEE monitoring was instituted to screen for intraoperative air embolism. Osmotherapy was initiated with 20% mannitol. The mid-esophageal bicaval view interrogation revealed a dense shower of bubbles as observed in VAE. The surgical team was alerted about the possible air embolism, but they responded in negative as there were no exposed venous spaces. The shower continued despite flooding the surgical field with saline. Other evidences of VAE, such as a fall in tidal carbon dioxide (ETCO₂), tachycardia, hypotension, desaturation and an arterial blood gas sample proved to be negative for the same. The shower phenomenon continued and as we verified the intravenous (IV) infusion sets, connectors and the IV bottles to rule out iatrogenic sources of air, we stopped the mannitol infusion, after which there was a simultaneous disappearance of the bubble shower, which again reappeared on restarting the infusion. The diagnosis of 'mannitol shower' was confirmed when no shower was visualized on the TEE when mannitol infusion was restarted after replacing the regular IV set with the IV infusion set with a filter. **Conclusion:** In neurosurgical patients, the use of TEE aids in determining the hemodynamic and volume status, screening for structural pathologies of heart such as patent foramen ovale in addition to diagnosing critical events like air embolism. The neuroanesthesiologist should be prepared to differentiate this 'Mannitol shower' from actual VAE, as they have an identical presentation on TEE imaging.

ISNACC-S-27

Venous air embolism during removal of bony spur in a child of split cord malformation: A case report

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Introduction: Venous air embolism (VAE) is one of the potential serious complication in neurosurgical patients. The incidence of VAE ranges from 16% to 86% but its incidence was reported to be lower in pediatric neurosurgical patients than adults. The incidence of VAE is higher in surgeries done in sitting position and VAE is not a common complication in patients operated in prone position especially in pediatric population. **Case Summary:** In our case, one year old female child with split cord malformation type 1 with tethered cord was operated for tethered cord release and one episode of VAE occurred while removal of bony spur. The child went into impending cardio-pulmonary arrest which was resuscitated with cardio-pulmonary resuscitation in prone position. Rest of surgery and anaesthesia was uneventful. In postoperative period, patient was

haemodynamically stable and discharged after 6 days. **Conclusion:** A special attention must be paid to detect and manage VAE in pediatric patients undergoing surgery for split cord malformation in prone position.

ISNACC-S-28

Time to emergence and factors affecting emergence in patients with aneurysmal subarachnoid hemorrhage following craniotomy: A prospective observational study

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Introduction: Rapid emergence is deemed necessary in the patients undergoing neurosurgery in order to permit an early neurological evaluation. The incidence of the early extubation in neurosurgical patients who underwent intracranial surgery has been around 82-89 %. However, the pattern of emergence in patients undergoing neurosurgery following an acute aneurysmal sub-arachnoid hemorrhage has not yet been reported.

Methods: The study is a prospective observational study conducted over a period of one and a half years. All the pre-operative (age, gender, weight, ASA, Hunt and Hess, WFNS, Fisher) and intra-operative data (Total anesthetic time, total surgical time, estimated total intraoperative blood loss, amount of intravenous fluids, urine output, temporary clipping time, IOR, temperature at the end of the surgery (≤ 36 or $>36^{\circ}\text{C}$), anesthetic drugs, brain bulge) data was recorded and analysed to assess the factors effecting emergence in the patients undergoing clipping.

Results: A total of 67 patients, aged 46 years [IQR - 40-53], 33 male and 34 female were included in the study. 44, 16 and 2 patients were of WFNS grade I, II and III at the time of the admission respectively. The number of the patients with admission CT Fisher grade I, II, III and IV were 6, 20, 25 and 16 respectively. At the time of the surgery 1 patient had GCS of 13 while 6 and 60 patients had a GCS of 14 and 15 respectively. The median time to emergence was 17 minutes (IQR 10-240 minutes). On univariate analysis the factors which were found to have significant co-relation with time to emergence were pre-operative GCS ($p = 0.002$, WFNS grade ($p = 0.005$, TC duration ($p = 0.03$) and the temperature at the end of the surgery ($p = 0.00$, In generalized linear model (γ - distribution), the temperature at the end of the surgery ($p = 0.0.00$), temporary clipping duration ($p = 0.008$), ASA grade ($p = 0.05$), Fischer grade ($p = 0.002$), duration of anaesthesia ($p = 0.042$) and GCS pre-induction ($p = 0.00$) had significant impact on the emergence time in patients undergoing clipping for ruptured aneurysm. **Conclusion:** None of the pre-operative and intra-operative factors had any

significant effect on the time to emergence. Of all the factors GCS and temperature at the end of the surgery had the maximum impact on the time to emergence in patients undergoing clipping for ruptured aneurysms.

ISNACC-S-29

Airway management in cervical spine disease - Observations from a tertiary care hospital

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Introduction: Airway management in patients with pre-existing cervical spine disease carries potential for further injury and requires careful consideration. Different studies have highlighted the anatomic considerations of different airway techniques. Generally, awake fiberoptic intubation is considered Gold Standard. We sought to study the airway management methods employed in patients presenting for cervical spine surgery at a tertiary care hospital and their impact. **Methods:** We conducted a retrospective observational study at a tertiary care hospital in Qatar as part of an institutional audit. Consecutive cases with cervical spine disease posted for elective spine surgery between July 2012 and December 2014 were observed for type of airway management technique, anesthetic used and signs of immediate post-operative neurological deterioration or any change in status from baseline. **Results:** A total of 98 patients met the inclusion criteria. 3 were excluded due to lack of data. 85% were males and 15% females. 55% had traumatic cervical spine disease and 34% degenerative cervical spine disease. 61 patients had preoperative motor weakness. For airway management, 56/95 patients underwent awake techniques (55 flexible fiberoptic; 1 Glidescope) with majority opting for remifentanyl plus propofol infusion (21/56) or TCI remifentanyl (18/56) for sedation. Remaining 39 patients were anesthetized before intubation. Only 2 patients developed neurologic deterioration after surgery. **Conclusions:** Majority of anesthetists had opted for awake fiberoptic technique. Progressive neurologic deterioration after surgery, occurred in only 2.1% of patients. No particular technique has conclusively shown superiority over others. Familiarity with a particular technique and good team communication is recommendable.

ISNACC-S-30

Effect of dexmedetomidine infusion of two different doses on cognitive function after surgery in elderly patients

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Introduction: Postoperative cognitive dysfunction (POCD) is a significant social and financial problem occurring in a high percentage of cases in peoples over 60 years old. POCD is associated with additional costs due to hospital stays and increased need for institutionalization, rehabilitation, and home care. Dexmedetomidine (DEX) has been demonstrated to have a neuroprotective effect. **Methods:** The present study was a randomized, case-controlled double-blind trial of 90 patients who had undergone surgery with general anaesthesia (GA). The cognitive deficit of each patient was assessed using the Mini-Mental State Examination (MMSE). The 90 patients were randomly allocated into three groups: Group I: Patients receiving 0.25 mcg/kg/hr continuous infusion. Group II: Patients receiving 0.50 mcg/kg/hr continuous infusion. Group III: Normal saline group (control group). The SPSS Version 15.0 statistical Analysis Software was used for the statistical analyses. **Results:** Intragroup change in MMSE Score (from Baseline) at different time intervals (Paired 't' test) p values shows that there is no significant changes in MMSE score at 24 hr and at 72 hr in group II patient.

Post-op Group I (<0.001), group II (0.013), group III (<0.001)

At 24 hr op Group I (0.009), group II (0.489), group III (<0.001)

At 72 hr op Group I (0.009), group II (1.000), group III (0.003)

Conclusion: The findings of the present study shows that DEX infusion 0.50 mcg/kg/hr after loading with 1 mcg/kg over 10 min may be an effective method for ameliorating postoperative cognitive impairment in elderly patients who have undergone surgery. Only a small number of patients were recruited. Therefore, larger studies should be performed, expanding the present study to a broader population.

ISNACC-S-31

Anaesthetic management of a patient with permanent pacemaker posted for frontal lobe tumor excision

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Introduction: Patients undergoing neuro-anaesthesia with cardiac co-morbidities pose a considerable challenge to anaesthesiologists. Management of patients