

neurophysiological monitoring, transcranial motor-evoked potentials (MEPs), somatosensory-evoked potentials (SEPs) and electromyography (EMG). **Methods:** We conducted a prospective observational pilot study. High dose opioids, propofol and dexmedetomidine were administered for anaesthesia (BIS value of 45-55). Neuromuscular blockers, nitrous oxide, inhalational anesthetics were avoided and normothermia, euvolemia, normocapnia, mean arterial pressure >65 mm of Hg and hematocrit >21% were maintained. Cortical SSEP were recorded through monopolar needle electrodes placed on scalp. Changes were considered significant if the amplitude was decreased by more than 50% and/or the latency was increased by 10%. MEPs were elicited with electrodes inserted over motor cortex and recorded as compound muscle action potentials via surface electrodes placed in peripheral muscles. **Results:** Nine adolescents and 3 children underwent scoliotic corrective surgeries with Cobb's angle of 40°-90°. Combined MEPs and SEPs monitoring was successful in all patients. No significant intraoperative evoked potential changes were seen in any patient which coincided with the absence of any neurological deficit postoperatively. One patient developed intraoperative bradycardia, one patient had excessive blood loss with intraoperative metabolic acidosis and one patient developed surgical site infection postoperatively. No patient needed postoperative mechanical ventilation. **Conclusion:** Intraoperative neurophysiological monitoring is a safe, reliable and sensitive method for detection of intraoperative injury to spinal cord and nerve root damage during scoliosis surgery. The anaesthetic drugs administered must be compatible with the neurophysiological monitoring. Maintenance of adequate depth of anaesthesia, hemodynamic and physiological stability of the patient and postoperative pain management are the major concerns for the anaesthesiologist.

ISNACC-S-44

Hemodynamic changes in cervical myelopathy with prone position using non invasive cardiac output monitor

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Introduction: Prone positioning under anaesthesia alters cardiovascular physiology and cervical myelopathy patients are known to have autonomic dysfunction thus putting them at higher risk of developing hemodynamic changes when prone and this can compromise spinal cord perfusion. **Methods:** This prospective observational study was conducted on 30 patients with cervical myelopathy who were positioned prone at NIMHANS.

The non invasive cardiac output monitor (NICOM) was used to record hemodynamic parameters. The time points for recording were at baseline, post induction, post intubation, prone position, post prone position every 5 min. The hemodynamic parameters recorded: HR - heart rate (/min), MAP - mean arterial pressure (mmHg), CO - cardiac output (l/min), SV - Stroke volume (ml/beat), SVV - stroke volume variability (%), TPR - total peripheral resistance (dynes. sec/cm⁵). **Results:** We found significant decrease in HR ($p < 0.001$), MAP ($p < 0.001$), TPR ($p < 0.001$). SV, CO and SVV showed no significant change. This may be due to impaired compensatory ability (to increase HR and TPR in response to fall in MAP, SV CO as seen in other studies) due to combined effects of anaesthesia and autonomic dysfunction. 60% patients had Hypotension in the post prone period and mephentermine requirement was high in the post prone positioning period. **Conclusions:** Hypotension occurs commonly after prone positioning in these patients. We conclude that the decrease in MAP is due to decrease in TPR and HR. We recommend use of vasopressors rather than inotropes to treat such hypotension in these patients.

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Effects of different prone patient positioning on optic nerve sheath diameter in spine surgery

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Introduction: Prone position is associated with raised ICP which leads to various complications. Optic nerve sheath diameter (ONSD) is a non-invasive method of estimation of ICP. We studied the effects of prone and reverse trendelenburg position of 10° on ONSD in patients undergoing spine surgeries. **Methods:** Adult patients with ASA grade 1 and 2 undergoing lumbar and lower thoracic spine surgeries in prone positions were recruited. Patients were randomized into Group A (normal prone position) and Group B (10° reverse trendelenburg position). A standard anesthetic regimen was followed. ONSD was measured at supine position after induction (T_B), after turning patients to prone position (T_P), after completion of 2 hrs (T_{P2}) and then hourly (T_{P3} , T_{P4} and so on). ONSD was also measured after completion of surgery and turning patient supine (T_{ES}) and 30 minutes after 30° of head up position post-extubation (T_{E30}). ONSD changes were compared both within and between groups at various time points. **Results:** Sixty patient's data were analyzed. There was clinically significant increase in the ONSD between T_B and T_P in both groups. Significant increase of ONSD was

noticed in Group A between T_{P_1} , T_{P_2} and T_{P_3} . However, in Group B decrease was noted. Further significant decrease was noticed in ONSD of both groups in between T_{ES} and T_{E30} . **Conclusion:** Reverse trendelenburg position of 10° attenuates the changes in the ONSD in prone position signifying decrease in ICP. Head up of 30° for 30 minutes further decreases the ONSD from post extubation supine position.

ISNACC-S-46

Anaesthetic management of a known case of Werner syndrome for excision of left frontal meningioma

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Introduction: Progeria or premature ageing is a rare congenital abnormality in children, with a higher risk of complications during sedation or anaesthesia, due to their challenging airway anatomy and the potential for cardiovascular events. We report the successful anaesthetic management using general anaesthesia of a known case of Werner syndrome. **Case Summary:** A 34 year old, 37 kg, male presented with a history of numbness and tingling sensations in right upper and lower limb with blurred vision. Investigations revealed a meningioma in the left frontal region and patient was posted for craniotomy for tumor excision. Progeria was diagnosed during the preoperative work-up based on physical appearance and history of diabetes mellitus, hypertension, hypothyroidism, chronic kidney disease and early onset bilateral cataract. His GCS was 15 and vital parameters were normal. Airway assessment was normal. Routine investigation showed FBS: 210 mg/dl, creatinine: 2.7 mg/dl and potassium: 4.5 mEq/L. ECG showed ST segment elevation in V1 - V6 and LVH, baseline echo showed EF = 55% with global hypokinesia. Anticipating a difficult airway, difficult airway trolley was kept ready in OR. Preoxygenation preceded invasive monitoring. Standard intravenous induction with etomidate 0.3 mg/kg, and after confirming adequate mask ventilation, Atracurium 0.5 mg/kg was given and patient was intubated. Anaesthesia was maintained with oxygen: Air-50%, sevoflurane (MAC 0.5-0.6) and atracurium infusion. The patient was reversed, extubated and shifted to ICU. Procedure was uneventful. **Conclusion:** Anaesthetic problems encountered in a case of progeria include difficult airway and myocardial infarction. Prior IDL to rule out any airway abnormality and cardiac work up to rule out myocardial infarction helps one be better prepared. Anticipation of difficult airway and managing the patient like geriatric age group is a key to management of such patients.

ISNACC-S-47

A prospective randomized single blind study of a comparison between total intravenous anaesthesia with propofol and conventional sevoflurane (inhalational) anaesthesia for their effect on the brain bulk during elective craniotomy for supratentorial tumor

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Introduction: Inhalational agents cause a dose dependant cerebral vasodilation and increase intracranial pressure (ICP). Total intravenous anaesthesia (TIVA) has no cerebral vasodilatory effect, A combination technique of inhalational and intravenous anaesthesia combines the advantage of both. We conducted a study to compare brain relaxation in three groups: TIVA, inhalational and IV+ (IV plus inhalational). **Methods:** Following institutional ethics committee approval, 80 patients (n = 80, calculated by ClinCalc Sample Size Calculator), posted for elective neurosurgery were included in this study. After intubation, in Group TIVA, anaesthesia was maintained with propofol infusion. Group INH, anaesthesia was maintained with sevoflurane. Group IV+, anaesthesia was maintained with combination of propofol and sevoflurane upto 1 MAC, titrated to keep bispectral index (BIS) 40-50. The brain relaxation/bulge and surgical field was graded according to a subjective four point scale. **Results:** The brain relaxation score was significantly better (p = 0.033) in Group TIVA. Grade I relaxation was higher in Group TIVA n = 25 (62.5%) than in Group IV+ n = 14 (35%). Group INH was discontinued because in the 8 cases conducted, there was unacceptable brain bulge requiring intervention. **Conclusion:** We concluded that TIVA provide a better surgical field in view of brain relaxation as compared to the combination of IV+ Inhalational and the conventional Inhalational anaesthesia. Though the measurement of brain relaxation in our study was subjective, monitoring of ICP during first burr hole in the skull would have been objective and ideal.

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Refusal of treatment: Using four box approach to guide decision-making

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Introduction: Four box Approach includes: (1) Medical Indications - High chance of fatal aneurysmal re-rupture