A006 Anesthetic Considerations for Multimodal Intraoperative Neurophysiological Monitoring in Predicting Early Position Related Neurological Insult during Cervical Myelopathy Surgery: An Institutional Review of 56 Consecutive Cases

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Background: The risk of neurological injury is inherent during surgical positioning for patients with unstable surgical spine and patients with severe myelopathic changes. The role of Intraoperative neurophysiological monitoring (IONM) and anesthetic drug optimization in these scenarios are not well defined. This review is aimed to study the impact of choice and dosing of anesthetic drugs for obtaining consistent multimodal IONM signals and predicting early neurological deficits during surgical positioning of patients with cervical spine disorders.

Materials and Methods: Data from 56 adult patients undergoing cervical spine surgeries for spondylotic or traumatic myelopathy under IONM were reviewed (January 2017–June 2019). Data regarding anesthesia drugs, intubation technique, time to obtain consistent IONM signals, IONM data before and after positioning, and any corrective measures after positioning were collected and analyzed.

Results: Complete data were obtained form 46 patients. The patients were induced with fentanyl (2 µg/kg), propofol (2 mg/kg) and after checking mask ventilation atracurium (0.4 mg/kg) intravenous (IV) administration. All patients were intubated with manual inline stabilization. Anesthesia was maintained with propofol (75 µg/kg/min) and fentanyl (0.5 µg/kg/h). Motor and sensory evoked potentials (MEP and SSEP) were recorded every 10 minutes. The mean time required for obtaining SSEP signals were 15 ± 3 minutes and for MEP signals were 20 ± 5 minutes. In 43 patients, there was no significant change in IONM signals during positioning. In three patients, significant drop in IONM signals without change in EEG signals indicating local neurological injury. Surgical positioning was immediately adjusted to obtain baseline signals.

Conclusions: This study highlights the anesthetic feasibility of utilizing multimodal IONM during surgical positioning to predict and correct any position related neurological deficits prior to the start of definitive surgery. Prospective studies with adequate sample size will be needed to standardize the anesthetic protocol in these scenarios.

A007 Comparison of Total Intravenous Anesthesia (TIVA) versus Volatile Induction Maintenance Anesthesia (VIMA) Complemented by Controlled Hypotension on Quality of Surgical Field during Transsphenoidal Resection of Pituitary Tumor

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Background: To compare quality of surgical field assessed by the surgeon using Boezaart's score in patients receiving TIVA and VIMA complemented by controlled hypotension. Effect on the hemodynamic parameters, estimated blood loss, and recovery profile were recorded.

Materials and Methods: A prospective randomized controlled trial was conducted on 72 patients undergoing transsphenoidal resection of pituitary tumor after approval from Institute Ethics Committee and written informed consent from patients. TIVA group received propofol infusion and VIMA group received sevoflurane. Dexmedetomidine and lignocaine infusions were used for controlled hypotensive in both the groups. Primary objective was quality of surgical field assessed by the surgeon using Boezaart's score. Secondary objectives were to observe effect on the hemodynamic parameters, estimated blood loss and recovery profile.

Results: Thirty-six patients were included in each group. Quality of surgical field was good and comparable in both the groups. Both the groups have shown quality of surgical field with a median score of 1 in 15 minutes and a median score of 2 in the rest of the intraoperative period. Emergence time and extubation time were statistically shorter in TIVA group with a p-value of 0.005 and 0.038, respectively.

Conclusions: There was no difference in quality of surgical field using anesthetic technique TIVA or VIMA during transsphenoidal resection of pituitary tumor although emergence was faster in patients receiving TIVA.

A008 Comparison of Hemodynamics and Cardiac Function before and after Neurosurgery in Patients with and without Raised Intracranial Pressure: A Pilot Observational Study with Transthoracic Echocardiography

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Background: Raised intracranial pressure (ICP) can have profound cardiovascular effects which can adversely affect the prognosis of neurosurgical patients. Intracranial