

A0017 Opioid-Free Anesthesia with Neuromonitoring in Acoustic Neuroma Surgery: Case Report

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Background: Perioperative opioid administration is associated with adverse effects, particularly in neuroanesthesia. The opioid-free anesthesia (OFA) with propofol, ketamine, and scalp blockade helps to prevent those side-effects and eases neuromonitoring during the intervention.

Case Description: A 59-year-old woman presented with a history of unilateral hearing loss, muscle cramps in the neck, and balance disturbances over the past few months. The magnetic resonance imaging (MRI) revealed a right cerebellopontine-angle lesion compatible with an acoustic neuroma. The patient was scheduled to undergo elective surgery (retromastoid suboccipital craniectomy and excision of the tumor) general anesthesia. Standard monitors included were electrocardiogram (ECG), noninvasive and continuous blood pressure, pulse oximeter, capnograph, brain function monitor (Sedline), and electrophysiological monitoring (somatosensory evoked potentials, motor evoked potentials, electromyography); and use of intraoperative neuromuscular blockade (NMB) was avoided.

General anesthesia was induced in the standard way, a scalp block was performed, and it was maintained with a continuous infusion of propofol and ketamine throughout the procedure, which lasted approximately 12 hours. During the procedure, some disturbances in the electrophysiological recording of the right facial nerve were reported. After the intervention, she was admitted to the PICU and had good control of the pain during the postoperative period, with a visual analog scale (VAS) score of 2, requiring just 2 mg of morphine. The patient was discharged to the ward the next day.

Conclusions: The use of OFA during neurosurgery offers significant advantages, including improvement of hemodynamic stability, adequate hypnotic state, and maintenance of a stable plane of anesthesia. In this case, OFA with propofol and ketamine combined with scalp block provided good pain relief without altering the electrophysiological recording.

A0018 Anesthetic Management of Children with Craniosynostosis for Corrective Surgery: A 10-Year Experience

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Background: Craniosynostosis is a developmental defect characterized by premature fusion of one or more skull sutures leading to deformity and restricted growth of brain. It is associated with different syndromes and compounded by the various inherent intricacies of infant physiology making it a challenge for the neuroanesthesiologist.

Materials and Methods: Perioperative data of infants and children who had undergone craniosynostosis correction surgery by a single surgical team over a period of 10 years were retrospectively collected after IRB approval.

Results: There were 22 patients, of whom 9 (40.9%) were females; Mean age-21.4 months; weight of 8.6 kg. The most common suture involved was coronal in 18 (81.8%), followed by sagittal 13 (59.1%), metopic in 12 (54.6%), and lambdoid in 11 (50%). Seven (31.8%) infants had all four-suture involvement, two had three sutures, seven had two sutures, and six had single-suture involvement. Of these, 13 (59.1%) were syndromic (Crouzon's, Apert's, and Down's syndromes).

Sevoflurane induction was performed in 17 (77.3%), and rest had intravenous induction. Anesthesia was maintained with inhalational in 18 (81.8%), and 4 (18.2%) had combination of IV and inhalational agents. Eighteen (81.8%) had an anticipated difficult airway; of these, 5 had CL grade of 3, most of them (4/5) were syndromic.

Average blood loss was 40.9 mL/kg; syndromic group had higher loss 51.2 mL/kg vs. 25.9 mL/kg ($p = 0.049$). Three out of 22 patients did not receive tranexamic acid, these children had increased blood loss 68.3 vs. 36.5 mL/kg ($p = 0.09$). Hypofibrinogenemia was the most common coagulation abnormality. Those who had intraoperative coagulation abnormality had higher blood loss, 58.0 mL/kg vs. 29.7 mL/kg ($p = 0.004$). 14/22 (64%) had intraoperative hypotension requiring nor-adrenaline infusion. Few (2/22) had both nor-adrenaline and adrenaline. Children who had intraoperative ABG (15/22), six (40%) had lactate of > 2 mmol/L. Hyperchloremia (45.4%) was the most commonly observed electrolyte abnormality, followed by hypocalcemia. Average duration of anesthesia was 352 minutes. There was no correlation between the number of sutures involved and the duration of surgery ($p = 0.418$) nor with the blood loss ($p = 0.331$).

Four (18%) out of 22 children had postoperative ventilation. The mean ICU and hospital stays were 1.7 and 5 days, respectively. Seven out of 22 had postoperative coagulation profile, of whom 1 had both low levels of fibrinogen and a prolonged APTT and 4 had purely hypofibrinogenemia; 1 had thrombocytopenia. No postoperative complication or death noted in these series.

Conclusions: Anticipation, adequate preparation for airway and blood loss, administration of titrated anesthetic, maintenance of hemodynamics, and timely administration of tranexamic acid and blood and blood products reduced the complication in these children.

A0019 Requirement of Propofol for Induction of Anesthesia in Patients with Traumatic Brain Injury Using Bilateral Bi-spectral Index

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Background: Studies have demonstrated a decreased requirement of propofol for induction of anesthesia in patients undergoing neurosurgical procedures as compared with non-neurological procedures. There is a paucity of