Results: Recovery time in group PD (15 ± 7.0 min) was comparable to group P (17.35 ± 7.4 min) unlike values in group D (27.58 ± 8.09 min) with a statistical significance ($p < 0.05$). Emergence delirium scores were significantly less in group PD (5 ± 1.08) and group D (5.6 ± 2.4) unlike scores in-group P (9 ± 2.43, $p < 0.05$). Children in group P had lower blood pressure and heart rate values in comparison to the other groups. The quality of MRI was comparable between all the three groups.

Conclusion: The regimen with propofol bolus and dexmedetomidine infusion provided adequate sedation and better recovery characteristics in children aged between 2 and 12 years without hemodynamic and respiratory complications, as compared with the use of either agent alone.

Keywords: dexmedetomidine, propofol, MRI

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A032 Comparative Assessment of Variation in Motor Evoked Potential Recordings in Upper versus Lower Limbs under Propofol-Based Anesthesia

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Introduction: Different anesthetic agents including propofol exhibit variable motor evoked potential (MEP) recordings in upper and lower limbs. Hence, we designed this study primarily to compare effects of propofol on amplitude and latencies in upper versus lower limbs and secondarily to compare requirement of current and stimulating pulse needed to elicit same.

Methodology/Description: After ethics committee approval and informed consent, 25 ASA I/II patients, 18 to 65 years of either gender, undergoing elective neurosurgery were included in a 6-month study. Sample size was calculated using previous studies and power size calculation, 80% statistical power, type-II error = 0.20, Alpha error = 0.05. We performed transcranial electrical stimulation of motor cortex using 200 to 400 V current with 4 to 6 stimulating pulses. MEP responses recorded in 50 upper and lower limbs at abductor pollicis brevis and tibialis anterior, respectively. Baseline MEPs were recorded after standardized induction of anesthesia, before atracurium and repeated at BIS 40 to 60 under propofol anesthesia. We used paired t-test for statistical analysis using SPSS software version 11.5.

Results: Mean age 43.24 years, ASAI /II 10:15 and M:F 13:12. There was a reduction in mean amplitude and increase in mean latency under propofol anesthesia as compared with baseline. These changes were statistically significant in lower limbs ($p < 0.05$). Overall success rate of MEP recordings was higher in upper limbs. The current and stimulating pulse needed to elicit responses was also higher in lower limbs. Limitations: single institutional study, smaller sample size.

Conclusion: Thus, propofol-based anesthesia appears to suppress MEP recordings in lower limbs as compared with upper limbs.

Keywords: anesthesia, propofol, MEP

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A033 Anesthetic Challenges for Intraoperative Neurophysiological Monitoring under General Anesthesia

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Introduction: Intraoperative-neurophysiological monitoring (IONM) is important to delineate the epileptogenic lesions from the eloquent cortex. Many anesthetic agents have significant interference in monitoring of electrocorticography (ECoG), somatosensory evoked potentials (SSEPs), and motor evoked potentials (MEPs). Complete relaxation with moderate depth is needed for ECoG, while muscle relaxation will not elicit MEP. Hence, a narrow balance is required to conduct recording of ECoG, SSEP, and MEP simultaneously. Here, we present successful management of two such cases under general anesthesia where judicious use of anesthetic agents provided least interference to IONM.

Methodology/Description: A 7-year-old child presented with premotor cortical dysplasia posted for right frontotemporal craniotomy. Aim was to develop anesthetic technique to elicit adequate ECoG and MEP/SSEP waveforms. The patient was maintained on desflurane (MAC 0.4–0.5) with oxygen-nitrous oxide (N_2O), dexmedetomidine (0.05–0.07 µg/kg/min), and intermittent fentanyl at 1 µg/kg. Depth of anesthesia was lightened for ECoG recording by shutting off N_2O 10 minutes prior and intermittent succinylcholine was given to avoid motor movement. This provided short duration relaxation and did not interfere with ongoing MEP and SSEP recordings. Similar case was performed in a 28–year-old young adult where depth of anesthesia was maintained with propofol infusion (50–75 µg/kg/min) and dexmedetomidine and fentanyl boluses. Total intravenous anesthesia was sufficient to provide adequate plane for ECoG, MEP, and SSEP recordings continuously. No form of muscle relaxation was used in this case. Depth of anesthesia was monitored by bispectral index (BIS) and supplemented with scalp block in both cases.

Conclusion: Hence, IONM can be used conducted under general anesthesia successfully.

Keywords: electrocorticography, evoked potentials, general anesthesia, depth of anesthesia