

**Results:** Recovery time in group PD ( $15 \pm 7.0$  min) was comparable to group P ( $17.35 \pm 7.4$  min) unlike values in group D ( $27.58 \pm 8.09$  min) with a statistical significance ( $p < 0.05$ ). Emergence delirium scores were significantly less in group PD ( $5 \pm 1.08$ ) and group D ( $5.6 \pm 2.4$ ) unlike scores in-group P ( $9 \pm 2.43$ ,  $p < 0.05$ ). 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

### References

1. Fang H, Yang L, Wang X, Zhu H. Clinical efficacy of dexmedetomidine versus propofol in children undergoing magnetic resonance imaging: a meta-analysis. *Int J Clin Exp Med* 2015;8(8):11881–11889
2. Mason KP, Zurakowski D, Zgleszewski SE, et al. High dose dexmedetomidine as the sole sedative for pediatric MRI. *Paediatr Anaesth* 2008;18(5):403–411

### 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, ASA I/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

### References

1. Bithal PK. Anaesthetic considerations for evoked potentials monitoring. *J Neuroanaesth Crit Care* 2014;1:2–12
2. Nathan N, Tabaraud F, Lacroix F, et al. Influence of propofol concentrations on multipulse transcranial motor evoked potentials. *Br J Anaesth* 2003;91(4):493–497

### 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 ( $0.05$ – $0.07$   $\mu\text{g}/\text{kg}/\text{min}$ ), and intermittent fentanyl at  $1$   $\mu\text{g}/\text{kg}$ . 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 ( $50$ – $75$   $\mu\text{g}/\text{kg}/\text{min}$ ) 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

## References

1. Sheshadri V, Raghavendra S, Chandramouli BA. Perioperative anaesthetic concerns during paediatric epilepsy surgeries: a retrospective chart review. *J Neuroanaesth Crit Care* 2016;3:110–114
2. Bithal PK. Anaesthetic considerations for evoked potentials monitoring. *J Neuroanaesth Crit Care* 2014;1:2–12

#### A034 Effect of Comorbidities on the Outcome of Patients with Aneurysmal SAH: A Prospective Observational Study

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**Introduction:** Subarachnoid hemorrhage (SAH) carries a high mortality of 30 to 40%. Among survivors, 40 to 50% suffer disability and cognitive decline. Comorbidities can have a contribution in the disease process. With this background, we hypothesize that comorbidities in a patient with aneurysmal SAH can influence the course of disease and thereby the neurological outcome.

**Methodology/Description:** This prospective observational study was commenced after ethics committee clearance and written informed consent. We enrolled 89 (59 females and 30 males) consecutive patients of aneurysmal SAH, scheduled for clipping/coiling from July 2016 to October 2017. Patients' comorbidities were recorded and outcome followed in postoperative period using MRS at discharge and MRS and GOS at 1 month after discharge. Analysis was done using chi square test.

**Results:** In patients undergoing clipping, smoking was associated with worse outcome (0.01). Smoking and alcohol intake was associated with increased incidence of vasospasm, infarct, and rebleed ([0.02 and 0.04], [0.001 and 0.003], [0.02 and 0.04], respectively). In patients undergoing coiling, CAD was associated with worse outcome (0.02), increased incidence of rebleed (0.007), and hydrocephalus (0.03). Smoking, alcohol intake, and DM were associated with increased incidence of vasospasm (0.014, 0.04, and 0.04, respectively). Smoking was also associated with increased incidence of rebleed (0.005). Hypertension, thyroid dysfunction, TB, and joint disease were not associated with worse outcome or increased incidence of complications.

**Conclusion:** Various comorbidities, including DM, CAD, smoking, and alcohol intake, were associated with increased risk of perioperative complications in patients after SAH. Other comorbidities, such as hypertension, thyroid dysfunction, TB, and joint disease, neither affect outcome nor increase risk of complications.

**Keywords:** SAH, CAD, DM, MRS

## References

1. Rosengart AJ, Schultheiss KE, Tolentino J, Macdonald RL. Prognostic factors for outcome in patients with aneurysmal subarachnoid hemorrhage. *Stroke* 2007;38(8):2315–2321

#### A035 Anesthetic Approach to a Patient with Intracranial Aneurysm, Severe Ischemic Heart Disease, and Poor Left Ventricular Function

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**Introduction:** The incidence of a cerebral aneurysm in general population is 0.5 to 5%. The annual incidence of rupture of an asymptomatic aneurysm has been estimated at 7 to 10 cases per 1 lakh population. Rupture results in subarachnoid hemorrhage causing death or permanent disability in approximately 50% of patients. Prevalence of ischemic heart disease (IHD) is 7.4 to 14%. Together, IHD and stroke are responsible for more than one-fifth (21.1%) of all deaths and one-tenth of the years of life lost in India. Myocardial infarction within 6 months of noncardiac surgery was found to be an independent risk factor for perioperative stroke. A condition with intracranial aneurysm and IHD is a situation of dilemma to decide which one to be treated first; however, existing literature is limited in such cases. We are presenting this case report to discuss the approach and anesthetic considerations for such a patient.

**Methodology/Description:** A 62-year-old male patient, known case of hypertension, diabetes mellitus, and past history of cerebrovascular accident presented with left arm pain, episode of transient ischemic attack, pedal edema, and exertional dyspnea. On neurological and cardiac evaluation, he was diagnosed with unruptured left middle cerebral artery aneurysm measuring 4 × 4 mm with a neck width of 3 mm and triple vessel disease with severe left ventricular dysfunction with ejection fraction of 20%. Considering the risk associated with general anesthesia for aneurysm coiling versus risk of rupture, we decided to go ahead with off-pump coronary artery bypass grafting (CABG) first to prevent cardiopulmonary bypass-related coagulation abnormalities. Aneurysm is managed conservatively in view of size and location. Management of this case is a challenge for anesthesiologists to keep a balance of hemodynamics to prevent the rupture of intracranial aneurysm on one side and maintaining coronary perfusion pressures to prevent perioperative myocardial infarction on the other side.

**Conclusion:** Off-pump coronary artery bypass grafting is a good option for preoperative optimization in a patient scheduled for intracranial aneurysm surgery with poor left ventricular dysfunction.

**Keywords:** intracranial aneurysm, ischemic heart disease, off-pump coronary artery bypass grafting

## References

1. Mayer RC, Krohn JS, McLaughlin DF. Coronary artery bypass grafting in a patient with multiple intracranial aneurysms and recent subarachnoid hemorrhage. *Anesth Analg* 1993; 76(4):887–891
2. Bose B, McNicholas KW. Clipping of cerebral aneurysm under hypothermic cardiac arrest and simultaneous coronary artery