Results: Personnel involved in the IOMRI theater were trained for a week before setting up the unit and mock drills performed. In a period of 1 month, 21 scans were performed, out of which 11 patients had residue and 9 underwent resurgery. The image quality was rated as good in 7 patients and satisfactory in 11patients. Personnel required to shift the patients into the MRI were reduced with 12 initially to 4 later. We were also able to reduce the time taken to shift the patients into the MRI room and back substantially by continuous training of personnel and remodifying our protocols (four times).

Conclusion: Setting up an IOMRI involves challenges. Institute-based checklists, protocols, and data recording of events help prevent untoward incidences and improve resources utilization.

Keywords: IOMRI, intracranial lesions, resurgery

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A043 Cervical Spine Movement during Awake Orotracheal Intubation with Fiberoptic Scope and McGrath VideoLaryngoscope in Patients Undergoing Surgery for Unstable Cervical Spine

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Introduction: Cervical spine (c-spine) movement during intubation with direct laryngoscopy (DL) can cause new-onset neurological deficits in patients with unstable cervical spine (UCS). While fiberoptic intubation is preferred, this is not always possible. Intubation using videolaryngoscope causes lesser C-spine movement than DL and may be better option for intubation in these patients. The primary objective of this study was to compare C-spine movement during awake fiberoptic-guided intubation (FGI) and McGrath videolaryngoscope-guided intubation (VGI) in patients undergoing surgery for UCS.

Methodology/Description: Following ethics committee approval and informed consent, 21 patients with UCS scheduled for fixation surgery were recruited over 1-year. Patients were included if they were 18 to 65 years and had upper C-spine instability. Based on computer-generated table, patients were randomized to FGI or VGI. Awake intubation was facilitated with airway blocks and fentanyl. C-spine movement during intubation was assessed by lateral fluoroscopy at three-time points (**T1**-baseline, **T2**-during glottis view, and **T3**-with tube in-situ). Motor power was assessed before and after intubation.

Results: The most common diagnosis was atlantoaxial dislocation followed by C1 or odontoid fracture. The mean age was 34.73 (13.63) and 33.70 (11.0) years in VGI and FGI groups, respectively. The degree of motion at C1/2 was 7.2 ± 1.9 in FGI and 6.5 ± 2.1 in VGI (p = 0.863). The movement at C3 was 5.01 ± 0.91 in FGI and 5.93 ± 2.52 in VGI. No patient developed new-onset deficits.

Conclusion: The degree of cervical spine movement was similar with both the techniques and no patient developed intubation-related motor deficits.

Keywords: UCS, VGI, FGI

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A044 Intracranial Hemorrhage in a Patient with Double Valve Replacement: A Balancing Act

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Introduction: Vitamin K antagonist “warfarin” is recommended in patient with prosthetic heart valve with aim to maintain international normalized ratio (INR) of 2.5. Intracranial hemorrhage is a dreaded complication in these patients. Optimum correction of anticoagulation to provide a window to allow neurosurgery while preventing valve thrombus is a delicate balancing act.

Methodology/Description: A 31-year-old patient, known case of rheumatic heart disease with aortic and mitral valve replacement done a month back, presented with emesis for a day and headache and fever. Computed tomography (CT) scan showed a right frontoparietal subdural hematoma and midline shift. The INR was 7.7 and 300 mL fresh frozen plasma was administered to correct it to INR 1.8. During the emergency decompression craniotomy, the main concerns were bleeding, thromboembolism, hemodynamic instability, valvular dysfunction, and infective endocarditis. Balanced anesthesia was used with invasive monitoring and transesophageal echocardiography. Intraoperative course was uneventful and patient was extubated. Intravenous heparin was administered. On day 2, CT suggested hematoma with midline shift. Patient was taken for re-exploration with repeat blood and plasma transfusions. After extubation, a single episode of convulsions occurred on the fifth day. Anticonvulsants were started. CT scan showed increased size of extra-axial hematoma. A third decompression craniotomy followed. Injection low-molecular-weight heparin (LMWH) 0.4 mg subcutaneous twice a day started. At present, patient is stable and shifted to ward.

Conclusion: Valve replacement patients are at high risk of intracranial hemorrhage due to anticoagulation. Appropriate management of anticoagulation is essential to ensure functioning of valve as well as prevent bleeding at other sites.

Keywords: double valve replacement, warfarin, intracranial hemorrhage

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A045 Suppression of Motor Evoked Potentials with Low MAC Sevoflurane

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Introduction: Intraoperative motor evoked potentials (MEP) help prevent postoperative motor deficits in complex spine surgeries. Changes in MEP, that is, decrease in amplitude >50% or absence of response can occur due to various metabolic, hemodynamic, and technical causes.

Methodology/Description: Our case was a 50-year-old lady with Arnold Chiari malformation and syringomyelia without any motor deficits. She was posted for foramen magnum decompression. Intraoperative MEP monitoring was planned to avoid spinal cord damage during surgery. After fiberoptic awake intubation, anesthesia induction was performed with propofol (2 mg/kg) and fentanyl (2 µg/kg). For maintenance, sevoflurane (0.8–1 MAC) with O_2 + air and dexmedetomidine (0.5 µg/kg/h) + fentanyl 1 µg/kg/h infusion was initiated. Once the patient was prone, there was significant hypotension and corrective measures taken (inotropes). The anesthesiologist was hesitant to switch to propofol and decided to continue with low-dose sevoflurane (0.3 MAC). We tried to achieve baseline recordings but were unsuccessful. After confirming all hemodynamic, metabolic parameters, and checking connections again (RAW EMG), anesthesia protocol was changed to TIVA (entropy guided) with propofol, fentanyl (1 µg/kg/h), and dexmedetomidine (0.5 µg/kg/h) and successful baseline MEP recordings were achieved. Thorough checklist, proper anesthesia protocol, and communication with surgeon help us to warn, predict, and prevent postoperative deficits during intraoperative neuromonitoring in complex spine surgeries.

Conclusion: Sevoflurane even at low MAC (0.3 MAC) can suppress MEP recordings and should preferably not be used during MEP. TIVA is preferable.

Keywords: motor evoked potentials, spine surgeries, neuromonitoring, inhalational anesthetics

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A046 GPi-Targeted DBS Placement using Optic Tract Stimulated VEP and Corticospinal Tract Stimulation in a Case of Severe Primary Dystonia

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Introduction: Optical tract stimulated visual evoked potential (VEP) is useful during deep brain stimulation (DBS) in the globus pallidus internum (Gpi) for the treatment of primary dystonia. Recordings of cortical VEPs obtained after stimulation of the optic tract may be a potential option to microelectrode recordings (MERs), since optic tract lies just beneath the best target for Gpi DBS.

Methodology/Description: A 25-year-old patient with severely symptomatic dystonia on multiple drugs was posted for DBS placement into GPi. Awake DBS placement was ruled out (severe symptoms with opisthotonus paroxysms every 15 to 20 minutes and noncooperative). The patient received all drugs for dystonia on the day of surgery. Once shifted into OT, baseline VEPs were recorded with LED goggles. Then general anesthesia was induced with fentanyl, propofol, and atracurium and changes in VEP were noted. Steady-state anesthesia with entropy-guided TIVA with propofol and dexmedetomidine was achieved where recordings of the VEP (P100) were sufficiently good. Bilateral scalp block and pin site infiltration were given to decrease the requirement of anesthetics. Computed tomography (CT) scan was done with the same infusions and atracurium boluses. On returning to the OT, the patient was repositioned and entropy reattached. Goggles and O1, O2, Oz, FZ were attached. Corticospinal tract monitoring with needle electrodes in mentalis, deltoid, adductor pollicis, and tibialis anterior was planned. Anesthesia was maintained with entropy-guided dexmedetomidine and propofol infusions and hourly fentanyl boluses targeting <60 without muscle relaxants. DBS placement was done with neuronavigation + CARM and mainly optic tract stimulation and recording N40-P70. DBS electrodes were placed at 1mm away from the distance where optic tract) VEP amplitudes were maximum and no positive corticospinal stimulation even with 5 mA current. DBS electrode placement was confirmed with intraoperative MRI after sanitization and removal of all metallic electrodes, entropy sensors, etc. Later the battery was placed and the patient was extubated.

Conclusion: Challenges faced in such GPi targeted DBS placements are enormous and careful planning and teamwork are utmost important in such cases

Keywords: visual evoked potentials, dystonia, GPi

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