

Inclusion Criteria: Age between 18 and 65 years. Patients undergoing clipping, coiling for anterior circulation aneurysm with WFNS grade III, IV, and V. ICU admission within 48 to 72 hours of surgery.

Exclusion Criteria: Patient not giving consent. Contraindication for application of NIRS sensors (pneumocephalus). Data of rSO_2 , $SjvO_2$, and CBFV were collected at the following time points—arrival in the ICU (baseline), second hourly daily during the ICU stay (up to 5 days) prior to and after intervention. The significant changes were recorded.

Results: Injured side NIRS values were less compared with normal side. Injured side TCD values were always higher by > 25 cm/sec. The side-side differences existed for NIRS and TCD. The trend values were similar in all patients and consistent.

Conclusion: Interhemispheric differences in rSO_2 and TCD could be considered as an early sign of VS-induced DCI rather than absolute threshold values. However, large studies are needed to test our observations.

Keywords: rSO_2 , TCD, $SjvO_2$, vasospasm

References

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A003 Anesthetic Consideration in a Case of Von Hippel–Lindau Disease for Cervical Intramedullary Cyst Excision

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Introduction: Von Hippel–Lindau (VHL) disease is an inherited autosomal dominant disorder with predilection to develop characteristic tumors in the cerebellar hemispheres, retina, brain stem, and spinal cord with a prevalence of approximately 1/50,000.

Methodology/Description: A 29-year-old, 55-kg woman presented with tingling and numbness in all four limbs, difficulty in walking, constipation, and urge for micturition. MRI revealed multiple cystic enhancing lesions in cervical and dorsal cord with significant cord edema. Diagnosed with VHL disease, pancreatic cyst, and diabetes mellitus for past 5 years on treatment. Multiple hemangiomas in retina. Operated for right partial nephrectomy 5 years back. Patient had a Glasgow Coma Scale (GCS) of 15/15 preop. Power of 4/5 on right side, 5/5 on left side. Routine hematological, biochemical values, thyroxin, cortisol, chest X-ray, serum electrolytes, calcium and phosphorus levels, 12-lead electrocardiogram, and echocardiogram were normal. Patient was posted for

cervical laminectomy and intramedullary cyst excision from C2 to C7 level. Routine monitors were attached, left radial artery was cannulated. Patient induced with inj. midazolam, fentanyl, propofol, and atracurium. Anesthesia maintained with oxygen–air mixture with sevoflurane (<0.5 MAC), dexmedetomidine, and propofol infusion. Intraop neuromonitoring—somatosensory evoked potential (SSEP), motor evoked potential (MEP), bispectral index, neuromuscular monitoring done. MEP—amplitude decreased < 50 intraoperatively with baseline values, while SSEP were maintained. Postoperatively, patient had right upper and lower limb power grade 0/5, which improved significantly by POD-3 to preop level 4/5. Patient was discharged on POD-8.

Conclusion: There is very little literature available for anesthetic management in a VHL disease. Anesthetic management of VHL is by itself a challenge; this case was more challenging due to the presence of cervicodorsal and pancreatic cyst with multiple hemangiomas. The case was successfully managed by vigilant clinical and invasive hemodynamic and neuromonitoring with successful outcome.

Keywords: von Hippel–Lindau, anesthetic consideration, neuromonitoring

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A004 Novel Use of Transcranial MEP and SSEP in a Case of Sciatic Nerve Tumor

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Introduction: Sciatic nerve monitoring is commonly done in pelvic surgeries and total hip replacements to preserve sciatic nerve function and prevent foot drop.

Methodology/Description: We present a case of a 24-year-old woman with severe pain in left posterior thigh extending into the leg and foot. MRI revealed sciatic nerve tumor (neurofibroma) extending into the sciatic foramen. We planned for intraoperative neurophysiological monitoring to preserve her sciatic nerve function. As the tumor was extending into the sciatic foramen, we could not stimulate the proximal nerve or do nerve action potentials. So, we planned for transcranial (motor evoked potentials [MEPs]). MEP monitoring in the muscles supplied by sciatic nerve (biceps femoris, gastrocnemius, tibialis anterior, extensor hallucis longus, and abductor hallucis longus). Posterior tibial somatosensory evoked potentials (SSEPs) were also used to monitor sensory component. TIVA with entropy guidance using propofol and dexmedetomidine was used to maintain anesthesia. For control, opposite limb MEP and SSEP were also monitored. During

the tumor resection, there was a mild decrease in SSEP (<10%) and there was no change in TcMEP. Also, postresection intact triggered EMG was elicited in the muscle groups. This is the first such report on use of TcMEP and SSEP.

Conclusion: TcMEP and SSEP can be used in tumors on peripheral nerves where nerve action potentials are not feasible.

Keywords: sciatic nerve tumor, transcranial motor evoked potentials, somatosensory evoked potentials

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A005 Effect of Intra-arterial Nimodipine on Cerebral Oxygen Saturation and Cardiac Indices in Patients with Cerebral Vasospasm after Aneurysmal Subarachnoid Hemorrhage

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Introduction: Delayed cerebral ischemia from vasospasm results in morbidity and mortality after aneurysmal subarachnoid hemorrhage (aSAH).¹ Intra-arterial nimodipine (IaN) relieves symptomatic vasospasm after aSAH with both angiographic and neurological improvement.² However, hypotension is common during IaN treatment and can result in cerebral hypoperfusion thus negating the net benefit. This study aimed to assess the effect of IaN on cerebral oxygen saturation (cSO₂) and cardiac indices during IaN therapy for cerebral vasospasm.

Methodology/Description: The ISNACC-funded prospective cohort study was conducted in 17 patients over 16 months after ethics committee approval and informed consent. Patients with neurological/angiographic evidence of vasospasm received IaN (3 mg over 20 minutes) in the spastic vessel. The cSO₂, heart rate, mean blood pressure (MBP), and cardiac indices (cardiac index [CI], stroke volume index, stroke volume variation, and systemic vascular resistance index [SVRI]) were recorded from baseline until completion of IaN treatment.

Results: The mean age and BMI was 52.7 (10.8) years, 24.2 (3.6) kg/m², respectively. On paired *t*-test analysis, mean change in ipsilateral and contralateral cSO₂ (%) after IaN was not significant (0.13 ± 3.7 [*p* = 0.89] and 1.3 ± 5.4 [*p* = 0.37], respectively). After IaN, mean change in diameter (mm) of spastic vessel was significant (0.48 ± 0.47; *p* = 0.007), but not in contrast transit time (sec; 1.3 ± 2.2; *p* = 0.08). Significant decrease in MBP (mm Hg) and SVRI (dyne*sec/cm⁻⁵/m²) and increase in CI (L/min/m²) were noted after IaN (mean change 13.8 ± 11.8 (*p* < 0.001), 685 ± 644 (*p* = 0.001), and 0.62 ± 0.56 (*p* = 0.002), respectively).

Conclusion: IaN resulted in dilation of spastic vessel without change in cSO₂. Cardiac indices changed significantly with IaN.

Keywords: aneurysmal subarachnoid hemorrhage, IaN, SVRI

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A006 Comparison of Two Infusion Doses of Dexmedetomidine on Perioperative Hemodynamics and Recovery Characteristics in Patients Undergoing Endoscopic Pituitary Decompression Surgery: A Randomized, Prospective, Single-Blind Study

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Introduction: Endonasal transsphenoidal resection of pituitary tumor involves wide fluctuation in hemodynamic parameter due to intense noxious stimulus at various stages of surgery. None of routinely used anesthetic agents effectively blunts undesirable hemodynamic responses with favorable recovery. Dexmedetomidine significantly attenuates the hemodynamic responses and maintains intraoperative cardiovascular stability which depends on its concentration. Primary aim of this study is to compare maintenance of hemodynamic stability and recovery characteristic between 0.5 and 0.7 µg/kg/h infusion doses of dexmedetomidine.

Methodology/Description: Study was conducted after obtaining approval from Institutional Review Board. Sample size of 42 patients (21 + 21) was determined using “MedCalc” and patients were randomized into one of the two arms based on computer-generated random numbers. Hemodynamic parameters and recovery characteristics were noted at various time intervals. Results were analyzed by ANOVA.

Results: Both groups were comparable in terms of demographic characteristics. There was statistically significant difference in hemodynamic parameters at all the mentioned time interval between Group D0.5 and Group D0.7, with patients in Group D0.7 being more stable. Recovery characteristics also showed statistically significant difference, that is, extubation time being 13.35 ± 2.47 and 20 ± 3.88 minutes in Group D0.5 and Group D0.7, respectively.

Conclusion: Use of dexmedetomidine infusion in endonasal pituitary decompression surgery offered equivalent hemodynamic stability and an optimal surgical field at both the infusion regimes without any hemodynamic complications. However, the recovery characteristics were significantly desirably faster with the lower concentration