was done in supine position with 0°, 30°–45° and 60°–70° head elevations. Postural changes in hemodynamic variables (HR, MAP) were recorded. Estimated cerebral perfusion pressure (eCPP) was calculated as $MAP \times FVd/FVm + 14$. Near-infrared spectroscopy, invasive blood pressure data at two different transducer locations, and changes in neurological status as the secondary outcomes were simultaneously recorded.

Results: Out of 20 patients who underwent craniotomy for intracranial lesion, 14 patients (mean age 41 ± 14 years) were evaluated. Six patients were excluded due to poor cooperation and inadequate temporal window. On average, MCA mean flow velocity (mFV) on the right and left hemispheres decreased by 10% and 8%, respectively, due to the postural change from 0° to 60° with major change occurring at 60°. Mean mFV for the Rt MCA at 0 degree (mean 44.9 , $SD \pm 8.7$) decreased ($p = 0.04$) at 60° (mean 39.8 , $SD \pm 7.2$). Mean mFV for the Lt MCA at 0° (mean 44.0 , $SD \pm 14$) decreased ($p = 0.14$) at 60° (mean 39.9 , $SD \pm 12$). PI remained unchanged (mean 1.0 at 60°, 1.0 at 30°, and 0.9 at 0°) at each head position, indicating no distal increase in resistance to blood flow.

Conclusions: We found that up to 30° to 45° head elevation did not significantly affect the CBF velocity. Generalizability is limited by small sample size.

A0041 Pineal Region Space-Occupying Lesion Surgery in Sitting Position in a 2.5- Year-Old Patient: A Case Report **S. Ushakiran Singh,¹ Josemine Davies²**

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Background: The sitting position for neurosurgery was first introduced by De Martel in 1931, and it provides ideal access to the surgeon for suboccipital craniotomy. Sitting position in pediatric population presents unique physiological challenges for the anesthesiologist with potential for serious complications like venous air embolism, postural hypotension, and serious cardiac arrhythmias due to surgical stimulation of cranial nerves and brainstem. The present case is one of the youngest cases reported so far.

Case Description: A 2.5- year-old girl presented with complaints of intermittent fever and vomiting for 30 days, weakness of left upper limb and lower limb for 3 days and two episodes of generalized seizure. On evaluation, a pineal space-occupying lesion (SOL) was diagnosed. A ventriculoperitoneal shunt was placed to relieve the mass effect and a suboccipital craniotomy with excision of SOL in sitting position under general anesthesia was decided. After detailed evaluation by the neuroanesthesiologist, the patient was accepted for surgery in ASA III. The patient underwent the procedure with invasive monitoring, in addition to standard ASA monitoring. Modified sitting position was achieved with elevation of lower limbs, and lower limbs were wrapped with elastic bandage to prevent venous pooling. Intraoperative period was uneventful. Patient was not extubated and shifted

to PICU for elective postoperative mechanical ventilation and monitoring. The patient was extubated next day without any complication. The patient recovered with some residual weakness.

Conclusions: The sitting position still has a role in modern neurosurgical practice but should be considered following consideration of its potential complications. Proper vigilance and monitoring with appropriate precautions can prevent complications both during and after the surgery.

A0042 Incidence of Hypovolemia in Preoperative Period and Its Correlation with Induction Hypotension in Patients with Aneurysmal Subarachnoid Hemorrhage

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Background: Volume status is an important factor in the clinical outcome of aneurysmal subarachnoid hemorrhage (aSAH) patients. Previous studies reported that 36% to 100% of these patients have low intravascular volume. Various causes of contracted intravascular volume include poor intake, use of decongestants, supine diuresis syndrome, and cerebral salt-wasting syndrome. Various dynamic and static parameters and both invasive and noninvasive monitors are available in the literature. We plan to evaluate the efficacy of transthoracic echocardiography (TTE) and inferior vena cava collapsibility index (IVCx) to determine the prevalence of preoperative hypovolemia and its association with induction hypotension.

Materials and Methods: Hundred patients of age group 18 to 65 years, ASA I or II, with aSAH scheduled to undergo clipping surgery were included. Patients with stunned myocardium or valvular abnormalities, end-organ damage, and pregnancy were excluded. Hypovolemia was defined by Kissing Papillary sign, left ventricular end-diastolic area $< 10 \text{ cm}^2$, VTI variations with spontaneous respiration $> 12\%$, and IVC Collapsibility index $> 50\%$. Induction hypotension was defined as mean arterial pressure (MAP) $< 70 \text{ mm Hg}$ or $> 40\%$ decrease in from baseline till 10 minutes after induction.

Results: A total of 98 patients were analyzed, and 2 were excluded. Incidence of hypovolemia was 70.4%. Out of 98 patients, 69 patients were found to be hypovolemic and 29 patients were euvoletic. VTI variations and IVC collapsibility index were most sensitive parameters (sensitivity 89.5% and 88.4%, respectively). MAP was lower in hypovolemic patients ($p = 0.003$) during study period. Correlation between hypovolemia and hypotension was highly significant with p value of 0.001.

Conclusions: We conclude that noninvasive tools such as TTE and IVC collapsibility index should be used by anesthesiologists prior to induction for assessment of volume status and to facilitate fluid resuscitation so as to prevent hypotension in patients with a-SA. H.