[NM-223] Post Operative Seizures and Stroke in a Patient with Moyamoya Disease

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A fourteen year old male with history of sickle cell disease and a cerebrovascular accident at the age of four presented with seven month history of left sided weakness. A MRI showed evidence of Moyamoya disease and the patient was scheduled for bilateral encephaloduroarteriosynangiosis (EDAS). Preoperatively the patient was admitted for hydration and blood transfusion to minimize the risk of perioperative ischemia and stroke as per the recommendations of the Hematology service.

General endotracheal anesthesia with invasive arterial pressure monitor was selected and induction proceeded uneventfully. The surgeons requested end tidal CO2 be maintained at forty and mean arterial pressures maintained above seventy. The patient’s blood pressure was labile for the first several hours of the case. Anesthesia was maintained with a low dose propofol infusion and sevoflurane. Systolic pressures ranged from the seventies to one hundred and sixty and the patient received five liters of crystalloids and 3 units of packed red blood cells over the duration of the ten hour procedure. During the latter half of the procedure, the patient was hemodynamically stable and the decision was made for extubation prior to the transfer into the pediatric intensive care unit. As the patient emerged from anesthesia, pulsations of the tongue were noted and the concern for seizure activity was brought to the attention of the neurosurgeons. Tongue pulsations progressed to right-sided tonic-clonic activity. Midazolam and propofol were administered and the patient remained intubated. An emergent CT scan of the brain was requested and the patient was transported by Anesthesia team to the Radiology suite. The CT scan demonstrated normal postoperative changes with no evidence of bleeding and the decision was made to transfer the patient to the PICU. Upon leaving the CT scanner, the patient began to seize. Midazolam and propofol were again administered.

In the PICU, the patient was started on anticonvulsant therapies including levetiracetam, phenytoin and a midazolam intravenous infusion. On postoperative day one, a MRI of the brain was performed which demonstrated bilateral thalamic areas of ischemia. Evidence of ischemia was also
noted in areas of the cortex including the perirolandic areas and the precentral gyri bilaterally. No further seizures were observed and the patient was extubated on postoperative day number three. He was noted to be unable to follow commands, speak and swallow after he was extubated. Over the next week, the patient improved neurologically. He was able to follow simple commands and move all his extremities with some right upper extremity weakness. He was maintained on levetiracetam and phenytoin, and the seizures did not return. The patient was discharged to rehabilitation facility for further physical therapy.
