

## [NM-302] Anesthetic Management for the Clipping of a Large Intracranial Carotid Artery Pseudoaneurysm with Thrombosis in an Infant

Rodgers M, Lozano S

Cleveland Clinic Foundation , Cleveland , Ohio, US

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**Introduction:** Intracranial aneurysms are rare in the pediatric population accounting for 0.005–2% of all diagnosed aneurysms. The incidence appears to be particularly low in neonates and children under 2 years of age.<sup>1</sup> Reports of the surgical and anesthetic management of such cases is lacking in the literature. This is a case report describing the management of an infant with a large left carotid artery intracranial aneurysm.

**Case Report:** An 8 month old, 5.6 kg boy presented with a pseudoaneurysm from traumatic dissection of the left carotid artery. Due to the patient's age and large size of the aneurysm, it was felt that surgical management was crucial to avoid risk of subarachnoid hemorrhage. A multidisciplinary team planned a craniotomy for surgical clipping of the aneurysm by utilizing high flow bypass from the left external carotid artery to the internal carotid artery via saphenous vein allograft. The patient was brought to the operating room and an inhalation induction was performed. Induction and intubation were uneventful. Two peripheral intravenous lines and an arterial line were placed. Internal jugular venous access was avoided due to a right subdural peritoneal shunt and the use of the left neck for external bypass. Anesthesia was maintained with Dexmedetomidine, Sevoflurane, and Rocuronium. Initially, the right saphenous vein was harvested, and through the stump a central line was placed by the surgeon. Next, a left craniotomy was performed. To promote brain relaxation, mild hypocapnia was induced and Mannitol was administered. Surgery was completed without intracranial to extracranial bypass due to two separate grafts thrombosing. During temporary clipping, burst suppression was achieved using a bolus of Propofol (4mg/kg) followed by a Propofol infusion (150 mcg/kg/min). A high-normal mean arterial pressure was maintained using a low dose epinephrine infusion. After Doppler and angiogram showed good flow through the carotid artery to the middle cerebral artery without filling of the aneurysm, closure began and a Morphine drip was started. The patient lost 300 cc of blood and required red blood cell transfusion as well as a combination of colloid and crystalloid replacement. The proposed procedure was successfully completed and the patient was transferred to the Pediatric ICU on Dexmedetomidine, Epinephrine, and Morphine. He was extubated the following day. On post op day 4, he was transferred to the regular nursing floor where neurological exam found him to be completely intact. He was discharged home on day 6 in stable condition.

**Conclusion:** Due to the exceedingly low incidence of intracranial aneurysms in the pediatric population, little information exists for the clipping of intracranial aneurysms. Highlighted is the importance of careful multidisciplinary planning and an anesthetic technique that facilitates brain relaxation, burst suppression, and manipulation of mean arterial pressure.

1 Brian, J., Hetts, S., Lawton, M., Gupta, S. Pediatric Intracranial Aneurysms. Neurosurgery Clinic North America. 21 (2010); 491-501

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