

Four patients with spinal AVMs were retrospectively reviewed. All 4 patients were with a nidus-type AVM. Treatment for all patients required embolization. Clinical features, imaging, treatment, and clinical results were observed. All 4 patient's clinical outcome was assessed using the Modified Ranked Scale.

Result: The follow-up after management showed that all four-patient recovered without any residual deficit. All four-patient scored zero (0) on the Modified Ranked Scale.

Conclusion: Pediatric spinal AVMs are rare and require complex multimodal approach to achieve favorable outcomes ¹⁾

From November 2012 to January 2016, 55 patients underwent SAVM surgery with IONM at the Neurosurgery Department of Xuanwu Hospital of Capital Medical University, China. Modified McCormick grading scale was used to evaluate patients' function 3 days before and immediately, 1 week, 3 months, and 6 months after surgery. IONM was performed including somatosensory evoked potential (SEP), trans-cranial motor-evoked potential (tcMEP), and electromyography (EMG). All patients were followed up every 3 or 6 months.

RESULTS: The SAVM locations were cervical spine in 15 (27.3%) patients, thoracic in 24 (43.6%), thoracolumbar in 12 (21.8%), and lumbar in 4 (7.3%). TcMEP and SEP were could be monitored in 53 (96.4%) and 33 (60.0%) patients, respectively. Using >80% irreversible amplitude reduction of the tcMEP as threshold, the sensitivity, specificity, and positive and negative predictive values were 77.3%, 87.1%, 81.0%, and 84.4%, respectively; using >50% irreversible amplitude reduction of the tcMEP as the warning criterion, these values were 81.8% 74.2%, 69.2%, and 85.2%, respectively.

CONCLUSION: In practical applications of tcMEP for SAVM surgeries, the 50% irreversible amplitude reduction of the tcMEP criterion can be used to warn the surgeon, while the >80% criterion can be used to stop the operation in order to avoid neurological impairments ²⁾.

¹⁾

Khalid SH, Khan Y, Bashir S, Awan SI, Mustafa S, Bari ME. Endovascular Management of Type III Perimedullary Spinal Arteriovenous Malformations in Pediatric Population. *Pediatr Neurosurg*. 2021 Jun 2;1-7. doi: 10.1159/000516445. Epub ahead of print. PMID: 34077932.

²⁾

Li X, Zhang HQ, Ling F, He C, Hu P, Hu T, Yu J. Intraoperative neurophysiological monitoring during the surgery of spinal arteriovenous malformation: sensitivity, specificity, and warning criteria. *Clin Neurol Neurosurg*. 2017 Dec 21;165:29-37. doi: 10.1016/j.clineuro.2017.12.016. [Epub ahead of print] PubMed PMID: 29289918.

From:

<https://neurosurgerywiki.com/wiki/> - Neurosurgery Wiki

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=spinal_vascular_malformation_case_series

Last update: **2024/06/07 03:00**

