

Tubular Retractor System for cerebral arteriovenous malformation surgery

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Five patients from a single institution were operated on for deep-seated AVMs using [tubular retractor systems](#). Collected data included demographics, AVM specifications, preoperative neurological status, postoperative neurological status, and postoperative/intraoperative angiogram results.

Five patients, ranging from age 10 to 45 years, underwent mini-craniotomy for stereotactically guided tubular retractor-assisted AVM resection using neuronavigation for selecting a safe operative corridor. No preoperative embolization was necessary. The mean maximum AVM nidus diameter was 8.2 mm. All deep-seated AVMs were completely resected without complications. All AVMs demonstrated complete obliteration on intraoperative angiogram and on 6-month follow-up angiogram.

Minimally invasive tubular retractors are safe and present a promising surgical option for well-selected deep-seated AVMs. Furthermore, the study may elucidate whether tubular retractors improve outcomes after microsurgical AVM resection secondary to mitigation of iatrogenic retraction injury risk ¹⁾.

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4: Fahim DK, Relyea K, Nayar VV, Fox BD, Whitehead WE, Curry DJ, Luerssen TG, Jea A. Transtubular microendoscopic approach for resection of a choroidal arteriovenous malformation. *J Neurosurg Pediatr*. 2009 Feb;3(2):101-4. doi: 10.3171/2008.11.PEDS08280. PMID: 19278307.

¹⁾

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