Surgical treatment of a complex Grade III Spetzler-Martin posterior temporal arteriovenous malformation

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Grade III Spetzler-Martin arteriovenous malformations (AVMs) are a distinct subgroup of brain AVMs. Their variety in terms of location, type of venous drainage, and size makes them the most heterogeneous group in the AVM classification. The surgical risk of treatment is also variable depending on the specifics of a given Grade III AVM. In this video illustration, the authors describe the technical nuances of surgical resection of a very complex Grade III left posterior temporal AVM. According to supplementary grading, the unruptured aspect and patient age give this lesion a Grade III; therefore, the combined grading gives the patient a score of 6, which puts him at moderate risk of morbidity for surgery. The indication for surgery was based on the patient's young age, lifetime risk of hemorrhage, and the location of the AVM in the left inferior/posterior temporal gyrus.

The patient underwent 2 sessions of preoperative embolization of the posterior cerebral artery and the external carotid artery feeders prior to craniotomy. The day after the second embolization, the patient was operated on via a posterior temporobasal craniotomy. The dural supply attached to the draining vein was left intact during the dural exposure. The detail of the AVM resection is described in the video clip. A total resection was achieved, and the patient's neurological examination was intact after the procedure.

The video can be found here: <https://youtu.be/fj5Cwx3kpXQ>.

KEYWORDS AVM; arteriovenous malformation; brain; surgical technique; microsurgery

SUBMITTED February 26, 2017. **ACCEPTED** March 17, 2017.

INCLUDE WHEN CITING Published online July 1, 2017; DOI: <http://thejns.org/doi/abs/10.3171/2017.7.FocusVid.1786>.

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