PREOPERATIVE EMBOLIZATION OF SPETZLER MARTIN GRADE 3 ARTERIOVENOUS MALFORMATIONS: A MULTI-CENTER PROPENSITY ADJUSTED ANALYSIS

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Background Spezler Martin (SM) grade 3 arteriovenous malformations (AVMs) are challenging lesions, often treated with preoperative embolization before definitive microsurgical resection. However, no significant difference in outcomes has been reported in patients with preoperative embolization for these lesions.

Objective To compare neurological outcomes of microsurgically treated SM grade 3 AVMs with vs without preoperative resection.

Methods A retrospective analysis of prospectively collected AVM databases from two large tertiary centers for all microsurgically treated SM grade 3 AVMs during 2011–2018 was performed. Comparison of neurological outcome (modified Rankin Scale score [mRS] >2 and change in mRS on last follow-up) between patients with vs without preoperative embolization was performed.

Results Of 102 patients with microsurgically treated SM grade 3 AVMs, 57 (56%) underwent preoperative embolization. Significant differences between patients with vs without embolization were found for eloquence (75% vs 93%, p=0.02), diameter ≥3 cm (53% vs 27%, p=0.01), difficulty (7% vs 22%, p=0.04), and mean follow-up mRS (1.1 vs 2.0, p=0.005). A higher percentage of patients without embolization (38%) than with embolization (7%) had an mRS >2 on follow-up (p<0.001). A propensity-adjusted analysis matching for age, supplemental grade, hemorrhage, eloquence, and location was performed, and no embolization (odds ratio, 4.2; 95% confidence interval, 1.1–16; p=0.03) was a risk factor for an mRS score >2.

Conclusion Lack of preoperative embolization in SM grade 3 AVMs may be associated with increased risk of poor outcome following microsurgical resection. Hence, evaluation for preoperative embolization is essential for all intermediate-grade lesions.


HIGH-RESOLUTION CONTRAST-ENHANCED CONE BEAM CT IN PLANNING OF ENDOVASCULAR TREATMENT FOR COMPLEX DURAL ARTERIOVENOUS FISTULAE

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Purpose Treatment of dural arteriovenous fistulae (DAVFs) is based on obliteration of the fistula via trans-arterial/transvenous approaches or a combination thereof. In complex cases it can be difficult to determine the fistulous point, and large segments of normal vascular structures are sacrificed to cure