

Impact of the Extent of Microsurgical Resection in Sphenopetro-clival Meningiomas Through a Multistaged Approach: A Volumetric Analysis

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Abstract

Objective Sphenopetroclival meningiomas (SPCMs) represent a challenge for surgical treatment. The authors used an objective volumetric analysis to assess the effect of the grade of resection and different surgical strategies that may affect the outcome of this tumors.

Methods Over a period of 4 years, patients with SPCMs were treated using a middle versus posterior fossa approach, or a two-stage surgery combining both approaches, based on the tumor location in relation to the petrous ridge and tumor volume. Retrospectively, all cases were analyzed with regard to tumor volume, extent of resection (EOR), functional outcome, and complications.

Results Twenty-seven patients with SPCMs met the inclusion criteria, and the mean follow-up was 24.8 months. Eleven patients underwent a two-stage surgery, while 16 patients had their SPCMs resected via a single craniotomy. Mean EOR was 87.6% and gross total resection was achieved in 48% of patients. Patients with greater EOR had better functional outcomes ($r=0.81$, $p<0.01$). Greater EOR was not accompanied by a significant increase in surgical complications. There was a trend toward lower postoperative volumes and better EOR with our two-stage approach (2.2 vs. 3.2cm (3), $p=0.09$; and 94.1 vs. 91.2%, $p=0.49$, respectively), without an increase in the rate of complications (18.7 vs. 18.2%, $p=0.5$).

Conclusion Staging of the surgical resection of larger tumors may lead to greater EOR, and this strategy should be considered for larger tumors.

Palabras clave

Palabras clave de autor: [petroclival](#); [meningioma](#); [volumetric](#); [extent of resection](#); [outcome](#); [combined approach](#)

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