

ABSTRACT

**Role of surgery for small petrous apex meningiomas causing refractory trigeminal neuropathy in the minimally invasive era**

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**Background:** Radiosurgery seems to be a very appealing option for patients having a small petrous apex meningioma and presenting with trigeminal neuralgia, presumably because of the lower risk and cost involved. The aim of this study was to analyze the results of our surgical series of petrous apex meningioma presenting with trigeminal neuralgia, and to determine the efficacy of neurosurgical treatment with regard to pain control. The procedure-related complication and morbidity rates

were also evaluated. **Materials and Methods:** This is a retrospective study of 17 patients with a small (<3 cm) petrous apex meningioma. The

included patients were refractory to medical treatment for trigeminal neuralgia and were deemed as surgical candidates. Postoperatively, the patients were assessed for pain relief according to the Barrow Neurological Institute (BNI) scale. A P value of less than 0.05 was considered significant. Magnetic resonance imaging was also performed after 6 weeks to assess the radicality of resection. **Results:** In a median follow-up of approximately 2 years, the study showed that 14 of the 17 (82.4%) patients had complete pain relief, with very low morbidity and no mortality, and 100% tumor control. According to the Barrow BNI scale for the assessment of postoperative pain, 52.9%, 23.5%, 5.9%, 11.8%, and 5.9% of patients had grades I, II, IIIa, IIIb, and IV in terms of their pain relief, respectively. **Conclusions:** In our population of patients, surgery proved to be successful in providing symptomatic relief, with low morbidity and no mortality, and was comparable with other studies involving the minimally invasive

modalities. However, these results warrant further follow-up, with recruitment of more patients, to demonstrate whether or not, surgery should be the primary choice of treatment in this subgroup of patients

Key words: Petrous apex lesions; stereotactic radiosurgery; trigeminal neuralgia