## Trigeminal schwannoma endoscopy

Recent advancements in endoscopic surgery have suggested a more minimally invasive and direct route for tumors in and around Meckel's cave, including the endoscopic endonasal approach (EEA) and endoscopic transorbital superior eyelid approach (ETOA).

The expanded endoscopic approaches are suited for tumors with predominately middle fossa and/or extracranial involvement along the V2 and V3 divisions and limited posterior fossa extension. The endoscopic endonasal resection of TNs within the middle fossa, pterygopalatine fossa, and infratemporal fossa is reviewed in a article of Raza et al.<sup>1)</sup>.

Samii et al., evaluated the efficiency and safety of the endoscope-assisted retrosigmoid intradural suprameatal approach (EA-RISA) for dumbbell trigeminal schwannomas and compare EA-RISA with classic retrosigmoid intradural suprameatal approach (RISA).

A retrospective study of all patients with trigeminal schwannomas was performed with a focus on dumbbell tumors. Tumors were classified according to a modified Samii classification. Extent of tumor removal, outcome, and morbidity rates in the 2 subgroups were compared.

Twenty patients were enrolled: 8 had dumbbell-shaped tumors (type C1), 8 had middle fossa tumors (A1-3), 3 had extracranial extension (D2), and 1 had posterior fossa tumor. Gross total resection was achieved in 15 and near-total resection in 5 patients. In 4 patients with dumbbell tumors, the classic RISA (Samii approach) was used; EA-RISA was used in the other 4 patients. The extent of petrous apex drilling was determined individually on the basis of the anatomic variability of suprameatal tubercle and degree of tumor-induced petrous apex erosion; in 2 patients, only minimal drilling was needed. The endoscope was applied after microsurgical tumor removal and in 3 of 4 patients revealed a significant unrecognized tumor remnant in the anterolateral and superolateral aspects of the Meckel cave. Thus, the EA-RISA technique allowed gross total resection of the tumor.

The EA-RISA enlarges the exposure obtained with the classic RISA. Its judicious use can help achieve safe and radical removal of dumbbell-shaped trigeminal schwannomas (C1 type)<sup>2)</sup>.

1)

Raza SM, Amine MA, Anand V, Schwartz TH. Endoscopic Endonasal Resection of Trigeminal Schwannomas. Neurosurg Clin N Am. 2015 Jul;26(3):473-9. doi: 10.1016/j.nec.2015.03.010. Epub 2015 May 14. Review. PubMed PMID: 26141365.

Samii M, Alimohamadi M, Gerganov V. Endoscope-assisted retrosigmoid intradural suprameatal approach for surgical treatment of trigeminal schwannomas. Neurosurgery. 2014 Dec;10 Suppl 4:565-75. doi: 10.1227/NEU.00000000000478. PubMed PMID: 24991713.

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