

Posterior intradural petrous apicectomy approach (PIPA)

From 2005-2013, 29 patients with a [petroclival meningioma](#) underwent tumor removal through a PIPA approach. The approach consists of a [retrosigmoid approach](#), intradural anterior resection of the [petrous apex](#) and microsurgical removal of the tumor, followed by endoscopic-assisted visualization and removal of tumor parts in the [middle fossa](#) or anterior to the brainstem.

Patients consisted of 7 men and 22 women; the mean age of patients was 52.7 years. In 24 patients, surgery was performed with the patient in a semisitting position; in 5 patients, surgery was performed with the patient in a supine position. A total resection was achieved in 19 patients (66%). A Karnofsky performance scale score >60% was recorded in 27 patients (93%), with surgical complications that involved a cerebrospinal fluid leak in 3 patients, bleeding in the surgical cavity in 2 patients, and pneumocephalus in 1 patient. The most frequent postoperative neurologic deficit was facial palsy (34%), which disappeared or improved consistently in all but 1 patient, who required a cranial nerve VII-cranial nerve XII anastomosis.

For petroclival meningiomas extending into the middle fossa, the endoscopic-assisted PIPA approach is safe and straightforward. The principal advantages of the PIPA approach are familiarity with the retrosigmoid route; the absence of temporal lobe retraction; and early control of the cranial nerves, vessels, and brainstem. However, careful patient selection regarding tumor extension is fundamental to obtaining optimal outcomes ¹⁾.

¹⁾

Tatagiba M, Rigante L, Mesquita Filho P, Ebner FH, Roser F. Endoscopic-Assisted Posterior Intradural Petrous Apicectomy in Petroclival Meningiomas: A Clinical Series and Assessment of Perioperative Morbidity. *World Neurosurg.* 2015 Dec;84(6):1708-18. doi: 10.1016/j.wneu.2015.07.033. Epub 2015 Jul 23. PubMed PMID: 26210709.

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