Transpetrosal approach indications

1. lesions of the petrous apex (e.g. petroclival meningiomas).

2. lesions of the clivus (e.g. clivus chordomas) with both posterior fossa and supratentorial components

Intradural tumours affecting the clivus may be divided into three categories depending the area primarily involved by tumour.

The second area extends from the spheno-occipital synchondrosis to the level of the jugular foramen.

This area is best approached through the petrosal approach and suited for patients with serviceable hearing on the side of the lesion.

see Anterior transpetrosal approach indications.

The combined petrosal approach is an excellent method to access the petroclival region but has the inherent risk of injury to the temporal lobe and Vein of Labbé. Tentorial peeling has the potential to largely eliminate these risks during the classic combined transpetrosal approach [1)].

Vestibular schwannoma

Between 2010 and 2011, patients aged 18 to 75 operated on for VS by transpetrosal approaches were included. VS was characterized by its size (Koos classification) and the presence or not of a cystic component. Hearing was classified according to the Gardner Robertson grading. The preoperative workup included an audiogram, computerized video nystagmography (VNG) with caloric testing, gaze study, rotatory tests, click-evoked cervical vestibular evoked myogenic potential measurements (cVEMPs), and subjective visual vertical test. Patients were asked to complete a Dizziness Handicap Inventory (DHI). Postoperatively, patients were reevaluated on D7 (clinical status), D90 (VNG and DHI), and D180 (DHI). Timing and duration of vestibular rehabilitation were also recorded. RESULTS:

Forty-eight patients were included. Preoperatively, 77% experienced mild instability problems with a mean DHI score of 14.1 (range 4-32). Postoperatively, 71% reported stable or even improved perceived stability. Mean DHI scores were 28.1 on D90 and 19.8 on D180. Serviceable hearing, cystic transformation, normal cVEMPs, diplopia, and vestibular syndrome on D7 were found to be predictive of worse equilibrium outcome than when absent. A preoperative caloric deficit greater than 75% seemed to be a good prognostic factor. Vestibular rehabilitation was conducted in 56% of patients. Starting it early (<1 mo) seemed to be beneficial for final equilibrium outcome.

VS microsurgery provides good stability results. Some preoperative parameters may be predictive of worse or improved balance recovery, as is clinical status on D7 [2)].

1)
Giammattei L, Starnoni D, Ronconi D, Camara B, George M, Cossu G, Messerer M, Peters D, Daniel RT. Tentorial peeling during combined petrosal approach: a cadaveric dissection. Acta Neurochir (Wien). 2022 Sep 26. doi: 10.1007/s00701-022-05370-z. Epub ahead of print. PMID: 36163381.

2)

Thomeer H, Bonnard D, Franco-Vidal V, Porez F, Darrouzet P, Liguoro D, Darrouzet V. Prognostic Factors of Balance Quality After Transpetrosal Vestibular Schwannoma Microsurgery: An Instrumentally and DHI-based Prospective Cohort Study of 48 Patients. Otol Neurotol. 2015 Jun;36(5):886-91. doi: 10.1097/MAO.0000000000000740. PubMed PMID: 25811349.