Translabyrinthine Approach:
Indications, Techniques, and Results

Moisés A. Arriaga, MD, MBA*, James Lin, MD

KEYWORDS

• Vestibular schwannoma • Translabyrinthine • Surgical complications
• Surgical outcomes • Surgical techniques • Benign tumor

Key Abbreviations: Translabrynthine Approach

CPA	Cerebellopontine angle
IAC	Internal auditory canal
PTA	Pure tone average
SDS	Speech discrimination score

Otologists first described the translabyrinthine craniotomy as an approach to the cerebellopontine angle (CPA) at the beginning of the twentieth century; however, William F. House was the first surgeon to successfully perform the approach with regularity for vestibular schwannoma (VS) removal.[1] Although hearing is sacrificed in its traditional form, the translabyrinthine craniotomy allows the most direct access to the CPA, as well as exposure of the facial nerve from brainstem to stylomastoid foramen (**Figs. 1** and **2**). All drilling is extradural. The entire length of the internal auditory canal (IAC) from fundus to porus, as well as its connection to the CPA, is routinely exposed.

INDICATIONS FOR TRANSLABYRINTHINE APPROACH FOR VS

The translabyrinthine approach is used for VS when the hearing is poor or in cases in which hearing preservation would be unlikely. Advantages of the translabyrinthine approach are

- It is the most direct route to the CPA
- It exposes the IAC in its entirety
- The facial nerve can be found with typically undisturbed anatomy anterior to vertical crest (known as the Bill bar) at the fundus.

LSU Health Sciences Center New Orleans, Hearing and Balance Center, Our Lady of the Lake Regional Medical Center, 7777 Hennessey Boulevard, Suite 709, Baton Rouge, LA 70808, USA
* Corresponding author.
E-mail address: marria@lsuhsc.edu

Otolaryngol Clin N Am 45 (2012) 399–415
doi:10.1016/j.otc.2011.12.009 **oto.theclinics.com**
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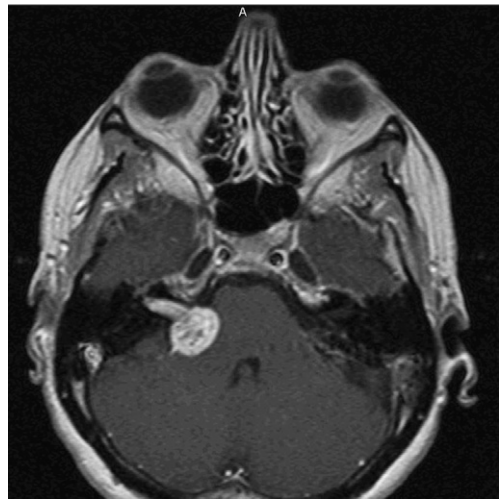

Fig. 1. Axial MRI of large VS with brainstem compression.

These factors allow for excellent tumor exposure and a reliable potential plane between tumor and facial nerve at the beginning of tumor dissection. The approach can also be used for facial nerve lesions of neoplastic or traumatic causes. The full-length exposure allows for decompression, involved facial nerve resection, translocation, and end-to-end anastomoses or nerve grafting (**Fig. 3**). The surgeon can extend the dissection through the stylomastoid foramen and into the parotid gland if required.

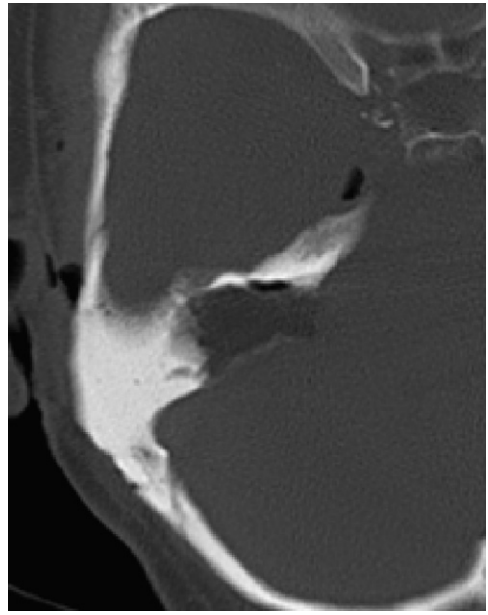

Fig. 2. Postoperative CT scan after translabyrinthine removal of tumor with abdominal fat medially and hydroxyapatite cement reconstruction of the mastoid defect.