Retrosigmoid Transmeatal Endoscope-Assisted Approach in Semi-Sitting Position for Resection of Vestibular Schwannoma: 2-D operative Video

Rocio Evangelista-Zamora[1] Stefan Lieber[1,2] Florian H. Ebner[1] Marcos Tatagiba[1]

[1] Department of Neurological Surgery, Eberhard-Karls University, University Hospital Tübingen, Tübingen, Germany
[2] Department of Neurological Surgery, Microsurgical Neuroanatomy Lab, University of Pittsburgh, Pennsylvania, United States

Address for correspondence Stefan Lieber, MD, Department of Neurological Surgery, Eberhard-Karls University, Hoppe-Seyler-Strasse 3, D-72076 Tübingen, Germany (e-mail: Stefan.Lieber@uclmail.net).

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Abstract

We present a case of a mid-sized vestibular schwannoma (T3b according to the Hannover classification) that was resected through a retrosigmoid transmeatal approach in semi-sitting position under endoscopic assistance. The patient is a 52-year-old male with acute loss of functional hearing on the right side. Audiometry confirmed a loss of up to 60 dB and lost speech discrimination, there were no associated symptoms such as tinnitus or vertigo. This 2D video demonstrates positioning, OR set-up, anatomical and surgical nuances of the skull base approach and the operative technique for microdissection of the tumor from the critical neurovascular structures, especially the facial and cochlear nerves. A gross total resection was achieved and the patient discharged home after four days with unaltered function of the facial nerve (HB I). At one year follow up there was no indication of residual or recurrence.

In summary, the retrosigmoid transmeatal approach is an important and powerful tool in the armamentarium for the microsurgical management of all kinds of vestibular schwannomas. Provided the necessary anesthesiological precautions and intraoperative procedures the semi-sitting position is safe and effective. If needed, the approach can be complemented by the use of an endoscope for visualization of the distal internal auditory canal.

The link to the video can be found at: https://youtu.be/pPKT4_5nIn0.

Keywords

- retrosigmoid transmeatal approach
- endoscope-assisted approach
- vestibular schwannoma
- semi-sitting position
- Tuebingen line

Disclosures

None; the authors have no personal, institutional, or financial interest in any of the materials, drugs, or devices described in this article.

Conflict of Interest

None.

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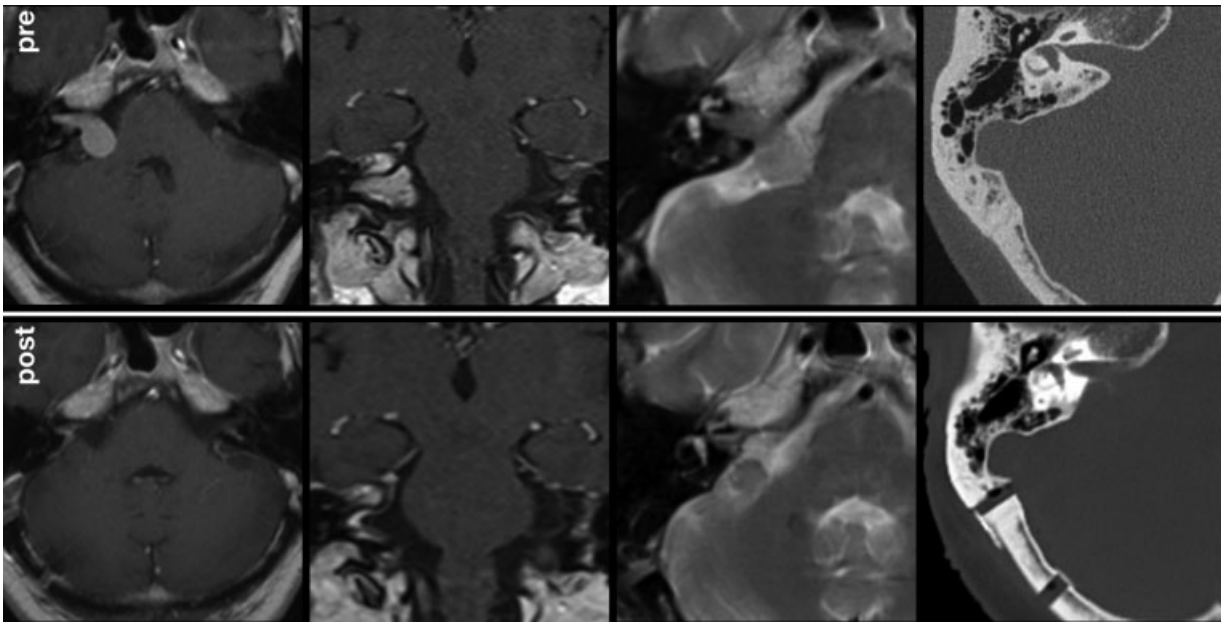

Fig. 1 Pre and postoperative magnetic resonance imaging (MRI) and computed tomography (CT) studies of the right sided vestibular schwannoma, occupying the cerebellopontine cistern and reaching the cerebral peduncle with early signs of compression.

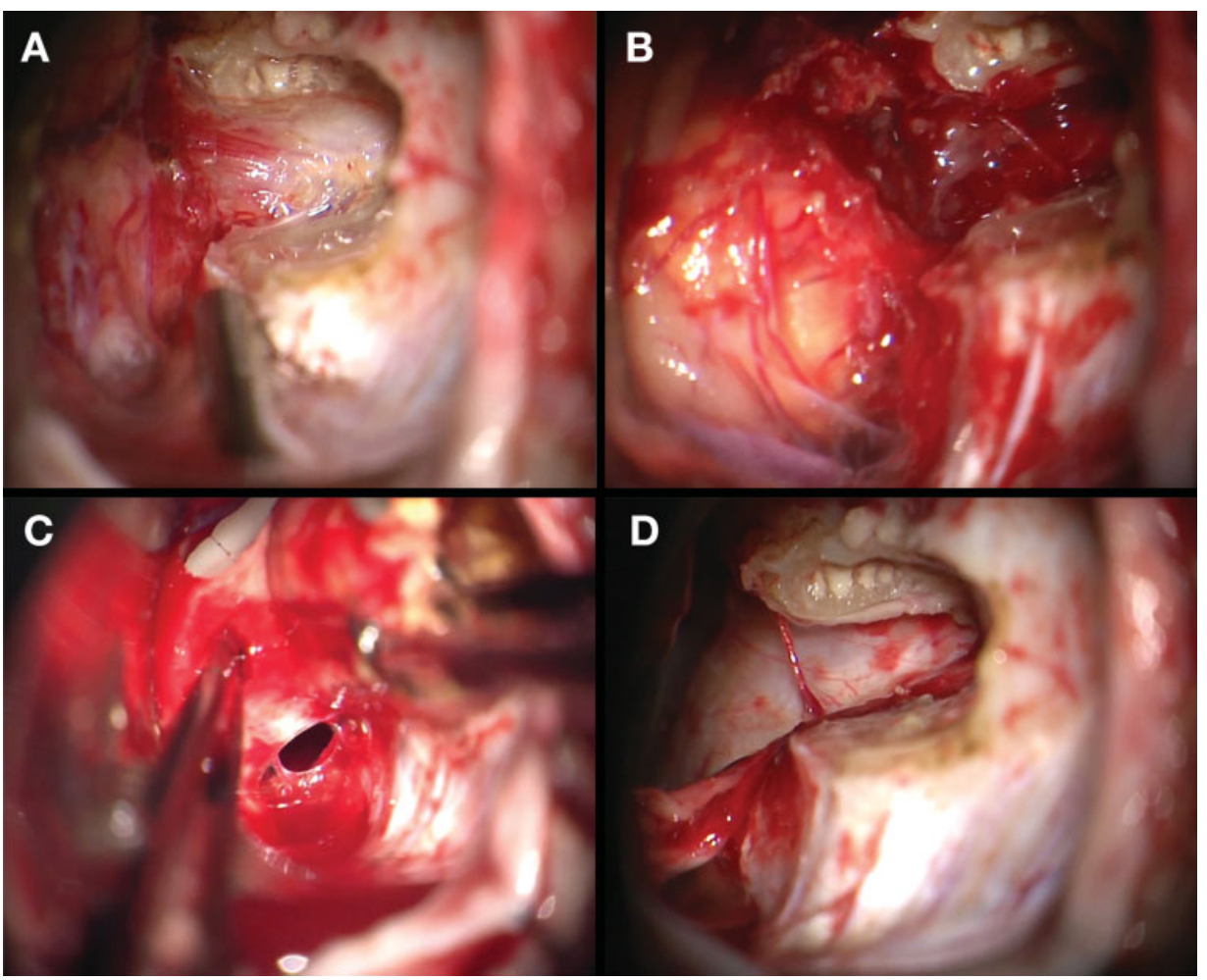

Fig. 2 Still images of the retrosigmoid transmeatal approach for resection of this vestibular schwannoma: (**A**) exposure of the intrameatal portion following opening of the internal auditory canal; (**B**) extrameatal cisternal portion; (**C**) the facial and cochlear nerves are dissected off of the tumor capsule; (**D**) complete removal of the vestibular schwannoma with preservation of the facial and cochlear nerves.