Vestibular schwannoma

Latest news

- Multiplatform molecular analyses reveal two molecular subgroups of NF2-related schwannomatosis vestibular schwannomas with distinct tumour microenvironment and therapeutic vulnerabilities
- Rare case of schwannomatosis presenting with cauda equina syndrome: a case report
- Analysis of quality of life and outcomes of vestibular schwannoma patients after resection and radiosurgery in an interdisciplinary treatment concept
- Stereotactic radiosurgery for tumor-related trigeminal neuralgia: a systematic review and meta-analysis
- Proton Radiotherapy for Unilateral Vestibular Schwannoma-A Histopathological Study
- Surgical management of schwannomas in schwannomatosis: a comprehensive analysis of clinical outcomes and determinants of local recurrence
- Automated Operative Phase and Step Recognition in Vestibular Schwannoma Surgery: Development and Preclinical Evaluation of a Deep Learning Neural Network (IDEAL Stage 0)
- A systematic review on the role of the endoscope in the surgical management of cerebellopontine angle tumors: is it time to draw the conclusion?

Definition

A vestibular schwannoma (also known as acoustic neuroma, acoustic neurinoma, or acoustic neurilemoma) is a benign, usually slow-growing cerebellopontine angle tumor that develops from the balance and hearing nerves supplying the inner ear. The tumor comes from an overproduction of Schwann cells.

They usually originate in the internal acoustic meatus, and gradually extend into the cerebellopontine cistern. Invasive growth into the petrous bone is extremely rare. This may have arisen because of an unusually peripheral site of origin on the vestibular nerve [1].

In the narrow confines of neurosurgery, neurology, and neuroradiology, changes in nomenclature have been motivated by improved understanding of disease states reflected in precision of the newly adopted appellation. Numerous examples of novel nomenclature demonstrate the potential benefit, including paradigm shifts in understanding as well as treatments for disease. For example, acoustic neuromas no longer exists, replaced with the more accurate vestibular schwannoma [2].

Epidemiology

see Vestibular schwannoma epidemiology.

Etiology

see Vestibular schwannoma etiology.

Classification

see Vestibular schwannoma classification.

Natural history

see Vestibular schwannoma natural history.

Pathology

Tumors are composed of Antoni A fibers (narrow elongated bipolar cells) and Antoni B fibers (loose reticulated). Verocay bodies are also seen, and consist of acellular eosinophilic areas surrounded by parallel arrangement of spindle shaped schwann cells (they are not a cell type).

Clinical Features

see Vestibular schwannoma clinical features.

Diagnosis

see Vestibular schwannoma diagnosis.

Scores

see Vestibular schwannoma scores.

Differential diagnosis

Vestibular schwannoma differential diagnosis

Guidelines

see Vestibular schwannoma guidelines.

Treatment

see Vestibular schwannoma treatment.

Outcome

see Vestibular schwannoma outcome.

Meta-analysis

see Vestibular Schwannoma Meta-analysis

Observational cohort studies

One hundred seventy-three patients diagnosed with unilateral vestibular schwannoma operated via the retrosigmoid approach were included in a study from the People's Liberation Army General Hospital Beijing. All patients underwent relevant examinations and completed the Tinnitus Handicap Inventory scale before surgery and 6 months after surgery. The prognosis of tinnitus was evaluated according to the changes in THI.

Of the 129 preoperative tinnitus patients, postoperative tinnitus resolved in 12.4%, improved in 29.5%, remained unchanged in 28.6%, and worsened in 29.5%. 18.2% of 44 patients without preoperative tinnitus appeared new-onset tinnitus postoperatively. Thirty-six patients never had tinnitus. Patients with smaller tumor sizes (≤ 3 cm) were more likely to experience preoperative tinnitus. Younger patients and those with serviceable hearing preoperatively were more likely to report their tinnitus unchanged or worsened. A new onset of postoperative tinnitus in the preoperative non-tinnitus group was found in better preoperative hearing function.

70% of patients had persistent tinnitus after vestibular schwannoma resection. The tinnitus prognosis was influenced by age and preoperative hearing function. Tinnitus is a bothersome symptom and is often underestimated by doctors. Assessment of tinnitus is mandatory during the vestibular schwannoma management [3)]

Case series

see Vestibular schwannoma case series.

Case reports

see Vestibular schwannoma case reports.

Books

Vestibular Schwannoma Books.

1)
Matsumura H, Matsuda M, Tabuchi K, Yamamoto T, Ishikawa E, Matsumura A. Vestibular schwannoma extending into the tympanic cavity and jugular fossa by invasion of the petrous bone. Br J Neurosurg. 2019 Mar 11:1-3. doi: 10.1080/02688697.2019.1588226. [Epub ahead of print] PubMed PMID: 30856348.
2)
Eldridge R, Parry D. Vestibular schwannoma (acoustic neuroma). Consensus development conference. Neurosurgery 1992;30:962–4
3)
You N, Zhang J, Zhang D, Zhao Y, Zhang J, Xu B. Predictive factors of tinnitus after vestibular schwannoma surgery: a case-control study. Chin Neurosurg J. 2024 Apr 3;10(1):10. doi: 10.1186/s41016-024-00363-6. PMID: 38566173.