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Microsurgical Anatomy of Acoustic Neuroma

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Albert L. Rhoton, Jr and Helder Tedeschi

This article reviews the microsurgical anatomy important to preserving the involved cranial nerves and adjacent neural and vascular structures during acoustic neuroma removal. These anatomic considerations are divided into sections dealing with the relationships at the lateral end of the tumor in the meatus and those on the medial end of the tumor at the brain stem. The anatomy of the region offers the opportunity for three approaches to the tumor in the meatus and cerebellopontine angle. One is directed through the middle cranial fossa and the roof of the meatus. Another is directed through the labyrinth and posterior surface of the temporal bone. The third is directed through the posterior cranial fossa and posterior meatal lip. The anatomy presented by all three approaches is reviewed in this article.

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Hugh D. Curtin and William L. Hirsch, Jr

Diagnosis of acoustic neuromas has been simplified considerably by computed tomography (CT) and magnetic resonance imaging (MRI). Either enhanced method will visualize almost every acoustic neuroma. MRI is more sensitive inside the internal auditory canal. Currently, a gadolinium-enhanced MRI scan is considered an accurate indicator of whether or not an individual has an acoustic neuroma, although there have been false-positive enhanced MRI scans recently reported.

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Julian M. Nedzelski, David A. Schessel, Andrew Pfleiderer,
Edward E. Kassel, and David W. Rowed

An expectant, nontreatment strategy for acoustic neuromas implies an understanding of the natural biologic behavior of these tumors. This study describes the long-term follow-up of a group of unoperated acoustic neuroma patients. Patterns of tumor growth are discussed in light of clinical outcome. Patient selection and a follow-up protocol are recommended for those individuals in whom a nontreatment strategy is contemplated.

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costs. The goals of the treatment of acoustic schwannomas are prohibiting tumor growth and alleviation of symptoms caused by damage to local structures. These symptoms—tinnitus, ataxia, and hearing loss—secondary to eighth nerve dysfunction, as well as symptoms arising from damage to adjacent structures such as the facial nerve, trigeminal nerve, or pons, can be caused by tumor growth or treatment. Determination of optimal therapy must also take into account an understanding of the natural history of the disease, because acoustic schwannomas are slow-growing benign tumors that when left untreated, usually enlarge over time and cause problems.

Guiding Patients Through the Choices for Treating Vestibular Schwannomas: Balancing Options and Ensuring Informed Consent

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Douglas D. Backous and Huong T. Pham

Counseling patients who are diagnosed with vestibular schwannomas, formerly known as acoustic neuromas, can be challenging. The health care provider has the responsibility to explain, in understandable language, to the patient or legal representative the proposed treatment options, risks and complications associated with each form of treatment, and alternatives to treatment, including no therapy. Patients should be encouraged to gather information before making a treatment decision. For the physicians managing these patients, information should be delivered in a balanced way to ensure patient understanding of their options leading to adequate informed consent.

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