Vestibular schwannoma treatment

- Falling Mechanics Are Altered After Vestibular Schwannoma Surgery-A Case Report
- Intralabyrinthine schwannoma masking as Meniere's disease
- Cerebrospinal fluid leakage after retrosigmoid craniotomy and craniectomy for cerebellopontine angle tumors: A comparative retrospective study
- Increased Hemorrhage During Excision of Bevacizumab-Treated NF2-Related Vestibular Schwannomas
- Producing high quality cranial SRS plans with 4Pi planning technique in a commercial clinical solution
- Hydrocephalus after Gamma Knife Surgery for Vestibular Schwannoma Resolved by Tumor Removal without Cerebrospinal Fluid Diversion: Report of Two Cases
- Whole Body-MRI assessment of peripheral lesions in patients with NF2-related schwannomatosis on systemic bevacizumab
- Impact of Vestibular Schwannoma Management on Cochlear Implant Programming and Outcomes

Treatment strategy depends on tumor size, hearing status, symptoms, and patient age:

- Observation: In small, asymptomatic tumors (especially in elderly)
- Microsurgical resection: Via translabyrinthine, retrosigmoid, or middle fossa approach
- Stereotactic radiosurgery (e.g., Gamma Knife): For tumors <3 cm or in patients unfit for surgery

Optimal decision-making in newly diagnosed vestibular schwannoma remains a matter of debate. For small- to medium-sized lesions (Koos grading scale I–III), the options are radiosurgery (RS), microsurgery, or a "wait and-scan" approach ¹⁾.

This is mainly based on the hospital setting, as well as surgeon's preference. It is worth noting that comparative studies advocate that GKS compares favorably with microsurgery, with high local tumor control, much lower rate of facial nerve palsy, and much higher rate of serviceable hearing preservation $^{2) (3) (4) (5) (6)}$.

Systematic reviews

A systematic review indicates that Single-fraction stereotactic radiosurgery has greater benefits than microsurgical resection in patients with unilateral vestibular schwannoma. However, it is unclear whether this conclusion still holds after 2 years, as long-term studies are lacking. It is also unclear whether the effects of Single-fraction stereotactic radiosurgery are similar in patients with bilateral vestibular schwannomas. Long-term prospective studies including patients with this condition would therefore be useful ⁷⁾.

Conservative treatment

see Vestibular schwannoma conservative treatment.

Fractionated stereotactic radiotherapy

see Fractionated stereotactic radiotherapy for vestibular schwannoma

Radiosurgery

see Vestibular schwannoma radiosurgery.

Surgery

see Vestibular schwannoma surgery.

Subjects presented to the Department of Otolaryngology-Head and Neck Surgery and the Department of Neurosurgery at the Johns Hopkins University, Baltimore, Maryland for management of unilateral vestibular schwannoma from 1997 through 2007, with at least two visits within the first year of presentation. The proportion of patients for whom initial management consisted of observation, surgical resection, or radiation therapy was determined, and the relative influence of study year, patient age, hearing status, and tumor size was analyzed.

RESULTS: Over the study period there was an increase in the proportion of cases that were observed with follow-up scanning (10.5% to 28.0%) and recommended for radiation (0% to 4.0%), whereas the proportion of operated cases declined (89.5% to 68.0%). There were no changes in mean age or hearing status at diagnosis, but mean tumor size declined significantly. Compared to those undergoing surgery, patients choosing observation and radiation therapy were on average 11.7 and 4.5 years older, respectively. Tumors that were surgically removed were on average 11.6 mm larger than those that were observed. The increasing frequency over time of observation relative to surgery was significant even after controlling for age, hearing status, and tumor size.

CONCLUSIONS: Among patients managed by our center, there has been a significant shift in management of vestibular schwannomas over the last decade, with increasing tendency towards observation. This trend implies changing provider philosophy and patient expectations⁸⁾.

Patients with VS completed a voluntary survey over a 3-month period. Setting Surveys were distributed online through email, Facebook, and member website. Subjects and Methods All patients had a diagnosis of VS and were members of the Acoustic Neuroma Association (ANA). A total of 789 patients completed the online survey. Results Of the 789 participants, 474 (60%) cited physician

recommendation as a significant influential factor in deciding treatment. In our sample, 629 (80%) saw multiple VS specialists and 410 (52%) sought second opinions within the same specialty. Of those who received multiple consults, 242 (59%) of patients reported receiving different opinions regarding treatment. Those undergoing observation spent significantly less time with the physician (41 minutes) compared to surgery (68 minutes) and radiation (60 minutes) patients (P < .001). A total of 32 (4%) patients stated the physician alone made the decision for treatment, and 29 (4%) felt they did not understand all possible treatment options before final decision was made. Of the 414 patients who underwent surgery, 66 (16%) felt they were pressured by the surgeon to choose surgical treatment. Conclusion Deciding on a proper VS treatment for patients can be complicated and dependent on numerous clinical and individual factors. It is clear that many patients find it important to seek second opinions from other specialties. Moreover, second opinions within the same specialty are common, and the number of neurotologists consulted correlated with higher decision satisfaction ⁹.

From a total of 8330 patients (average age 54.7 years, 51.9% female) were analyzed and from 2004 to 2011, there was a statistically significant decrease in tumor size category at time of diagnosis (P < .01). Overall, 3982 patients (48%) received primary microsurgery, 1978 (24%) radiation therapy alone, and 2370 (29%) observation. Within the microsurgical cohort, 732 (18%) underwent subtotal resection, and of those, 98 (13.4%) received postoperative radiation therapy. Multivariable regression revealed that surgical treatment was more common in younger patients and larger tumor size categories (P < .05). Management trend analysis revealed that microsurgery was used less frequently over time (P < .0001), observation was used more frequently (P < .0001), and the pattern of radiation therapy remained unchanged. Linear regression was used to create an equation that was applied to predict future management practices. These data predict that by 2026, half of all cases of VS will be managed initially with observation.

While the incidence of VS has remained steady, tumor size at time of diagnosis has decreased over time. Within the United States there has been a clear, recent evolution in management toward observation ¹⁰.

Immunotherapy

Rapid progression of residual vestibular schwannoma following subtotal surgical resection has an underlying immune etiology that may be virally originating; and despite an abundant adaptive immune response, T-cell immunosenescence may be associated with rapid progression of VS. These findings provide a rationale for clinical trials evaluating immunotherapy in patients with rapidly progressing VS¹¹.

Vestibular Schwannoma Treatment Cost

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