

For this purpose, committees of experts in the field in the USA were organized to review and assess the voluminous medical literature on VS with emphasis on the period 1990 through 2014. Questions for assessment of the evidence were designed and writing groups for final reports for 9 major topics were formed, including: Audiologic Screening, Nerve Monitoring, Imaging/Wait-and-Scan, Surgical Resection, Radiosurgery and Radiotherapy, Hearing Preservation, Emerging Therapies. The following are “Summary of Results” for three of the nine final reports.

Imaging/Wait-and Scan: 25 full-text articles were reviewed; 15 were included as evidence. “Class 3 evidence [mainly retrospective] supports the conclusion that about two-thirds of patients with VSs may not exhibit measurable growth, while one-third demonstrated growth, defined as either any increase in size or a change in diameter. Intrameatal [in the canal] tumors are less likely to grow. While large literature surveys suggest average growth rates of 1.2 to 1.9 mm/year, separate analysis of actively growing tumors reveal faster rates. Early growth may predict future growth; however, late growth after 5 years of quiescence may occur. An MRI 6 months after tumor discovery may identify tumors likely to continue growing; otherwise, scans may be obtained annually for 5 years, and scan intervals should be lengthened if no growth is detected.”

Partial Removals: 17 full-text articles were reviewed; 13 (all retrospective) were included as evidence. “There is insufficient evidence to support [that] subtotal resection followed by SRS [stereotactic radiosurgery] provides com-parable hearing and [facial nerve] preservation to patients who undergo a complete surgical resection. . . When a VS is treated with subtotal resection followed by radiosurgery either primarily or because of tumor remnant growth, tumor control rates are consistently 93% to 96% with >90% of patients maintaining normal or near normal facial function. This tumor control rate is similar to that of series on gross total resection. . . Future studies directly comparing gross total resection to subtotal resection plus radiosurgery [are needed]. In addition, it would be highly valuable for a ‘lowest acceptable’ percentage of surgical resection to be determined that could still be followed by radiosurgery with com-parable results to gross total resection.”

Fractionated Radiation: 202 studies were reviewed; 15 (those using MRI for radiographic follow-up) were included as evidence. “As there is no difference in radiographic control and clinical outcome using single or multiple fractions, no recommendation can be given. . . High rates of tumor control (i.e., generally >90%) were afforded by single fraction, hypofractionated, and traditional hyperfractionated schemes. As compared to [the high] tumor control, lower rates of hearing preservation were reported, and hearing preservation rates lessened with longer follow-up assessment and for larger tumors. Rigorous evidence supporting a single fraction approach compared to others for preserving hearing seems lacking. Further clinical investigation will be required to determine an optimal fractionation approach for VS patients. However, a one-size-fits-all approach is not likely to be ascertained, and an optimal approach may vary based upon various factors, including tumor size (or volume). There is no recommendation that can be given based on the available data regarding the schemes of the fractionation and which patient population will benefit from that.”