

**Introduction**

Large vestibular schwannomas pose a unique challenge of achieving surgical cure while maintaining normal facial nerve function. Facial nerve preservation surgery, defined as attempted maintenance of normal facial nerve function at the cost of residual tumor when adherent to the facial nerve or root entry zone, is a novel idea. We present our experience and evaluate functional outcomes and extent of resection.

**Methods**

We performed a retrospective review of patients treated surgically by a single surgeon team (PVT, MP) for large (Koos 3 & 4) vestibular schwannomas between 2003-2012. We review the extent of resection, post-operative hearing and facial nerve function. We separated the patients into groups based on extent of resection (gross total, near-total and subtotal) and evaluated the tumor control rate and functional outcome.

**Results**

A total of 56 patients were included in the study. Four patients had received radiation treatment to their tumors prior to surgery. 18 patients underwent a retrosigmoid and 38 underwent a translabyrinthine approach. Serviceable Hearing (GR I-II) was preserved in 1 of 5 (20%) GTR patients, 0 of 2 NTR patients and 1 of 3 (33%) STR patients for an overall hearing preservation rate of 30%. Good facial nerve function (HBI & II) was achieved long term in 17 of 20 (85%) GTR patients, 11 of the 12 (92%) NTR patients and 22 of the 24 (92%) STR patients. Only the GTR group had HB IV or worse facial nerve function (3 patients). Long term tumor-control was 100% for GTR, 92% for NTR and 83% for STR. 9 STR patients and 1 NTR patient received postoperative radiation therapy. Average follow-up was 33 months.

**Conclusions**

Facial nerve preservation surgery is associated with increased chance of long term good facial nerve outcome. The rate of tumor progression following subtotal resection is 17%.

**Learning Objectives**

Understand the potential benefit of facial nerve preservation surgery in the management of large vestibular schwannomas.