Residual vestibular schwannoma

see also Recurrent Vestibular Schwannoma.

The vestibular schwannoma treatment (VS) with residual tumor following incomplete resection remains controversial and little is known regarding postoperative tumor volume changes.

Residual tumor following vestibular schwannoma surgery is more common today than in the pre-SRS era. Availability of SRS may encourage leaving residual tumor intraoperatively to preserve neural structures. Current surgical strategies decrease surgical morbidity but necessitate further treatment in over 10% of cases.

Postoperative recommendations should now include the vestibular schwannoma natural history of VS residue after resection: even though the growth rate differs between STR and NTR residues, most VS residues showed no growth.

GKRS of residual or recurrent tumor is safe following STR of VS and appears to carry a low risk of worsening facial nerve function when performed for progressive tumor growth.

The behavior of residual tumors was analyzed for 111 patients who underwent surgery for newly diagnosed vestibular schwannoma between September 2006 and July 2017. The postoperative tumor volume changes were assessed during a mean follow-up of 69 months (range 36-147 months). Fifty-three patients underwent imaging surveillance following incomplete resection. There was no residual tumor growth in 44 patients (83%). A significant regression of residual tumor volume was noted in the no growth group at postoperative 1 year (p = 0.028), 2 years (p = 0.012), but not from 3 years onwards. Significant predictors of regrowth were immediate postoperative tumor volume ≥ 0.7 cm³ (HR 10.5, p = 0.020) and residual tumor location other than the internal auditory canal (IAC) (HR 6.2, p = 0.026). The mean time to regrowth was 33 months (range 5-127 months). The 2-, 5-, and 10-year regrowth-free survival rates were 90.6%, 86.8%, and 83%, respectively. In conclusion, significant residual tumor regression could occur within 2 years for a VS with an immediate postoperative tumor volume less than 0.7 cm³ or residual tumor in IAC.

Tertiary otologic and skull base referral center. PATIENTS Twenty-three patients with residual vestibular schwannoma from a total of 637 patients who underwent surgery during the same time (April 1987 to April 2001). Only 1 patient had previously been treated in the same center. All but 1 patient had previously undergone at least 1 retrosigmoid approach. The majority of patients experienced an extensive list of complications and additional treatments after the first operation. Only 2 patients experienced some measurable hearing preoperatively. Previous hospitalization averaged 34.9 days, with a minimum of 5 and a maximum of 150 days.

Interventions: 16 patients were treated through an enlarged translabyrinthine approach and 7 through a modified transcocchlear approach.

Main outcome measures: Total tumor removal, postoperative complications, hospital stay.

Results: All but 2 patients underwent a total removal. Complications recorded were 1 temporary
hemiparesis and aphasia, 1 subcutaneous abdominal hematoma, and 2 transitory VIth cranial nerve palsies. No additional treatment was required. The postoperative hospital stays ranged from 3 to 22 days, with a mean of 6.9.

Conclusions: Patients with vestibular schwannoma should be treated by an experienced team in a referral center to reduce postoperative morbidity and decrease the need to resort to only partial removal. Planned subtotal removal should be reserved for a few selected cases. The retrosigmoid approach is considered to have the highest risk that tumor remnants will unintentionally be left. In surgery of a residual vestibular schwannoma that has previously been treated through the retrosigmoid approach, the translabyrinthine approach offers some advantages with respect to performing another retrosigmoid procedure. In the presence of long-lasting facial palsy, the modified transcochlear approach represents the safest and most viable option available 5).


