Introduction

“Maximal safe resection” is an optimal surgical strategy for moderate-to-large vestibular schwannomas, however data on the long-term outcomes of residual tumor after STR is lacking. The goal of this study was to review our rates of residual tumor growth, and the control rates of salvage versus upfront stereotactic radiosurgery (SRS).

Methods

This retrospective single-institution study included all sporadic vestibular schwannomas treated primarily with STR at our institution from 2002 – 2015. The primary outcome was tumor growth requiring salvage treatment, and response to salvage treatment (surgery or SRS). Patients treated with upfront SRS after surgery were analyzed separately.

Results

295 patients underwent primary surgery for a vestibular schwannoma between 2002 - 2015, including 140 STRs. 49 cases with < 1 year follow-up were excluded. 17 cases received upfront SRS after surgery (12 Gamma Knife, 12Gy; 5 CyberKnife, 25Gy in 5 fractions), with 2 failures requiring salvage surgery at 1.6 and 2.6 years (88% control rate at 1.8 years). Seventy-four residual tumors were managed with observation after STR. 57 (77%) remained stable at a median 4.1 years. 17 tumors (23%) progressed, requiring salvage treatment at a median of 2.8 years. Eleven received Gamma Knife (12.5 Gy) with a 100% control rate 2.3 years after SRS. One received Cyber Knife (18Gy, 3 fractions), ultimately requiring repeat surgery 3 years later. 4 residual tumors received salvage surgery at a median interval of 5 years after STR, and one was lost to follow-up. The control rate of salvage SRS was 92% at 2.3 years median follow-up.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the rate of residual tumor growth after subtotal resection 2) Describe salvage treatment options and their associated effectiveness for growing residual tumor

Conclusions

A majority (77%) of residual vestibular schwannomas remained stable after a primary STR. Both upfront and salvage SRS had good control rates (~90%) in our series. Further study is needed to define the role of upfront versus salvage SRS after a primary STR.