**Title:**

Outcomes of Vestibular Schwannoma after Stereotactic Radiosurgery: A 20-year retrospective cohort study.

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**Abstract:**

***Background:***

Stereotactic radiosurgery (SRS) has been of excellent utility in vestibular schwannomas demonstrating excellent local control rates. In this study, the change in hearing after SRS was assessed to determine which patient, tumour, treatment-related factors influence outcomes.

***Methods****:*

Retrospective review of hearing outcomes in patients with vestibular schwannomas who had received stereotactic radiosurgery (SRS) between 1999 and 2019 was performed. SRS had been delivered as a single fraction of a median dose of 12 Gy. SRS utilized either a frame-based and a frameless system in our cohort. Outcomes assessed were post treatment Gardner Robertson (GR) class, facial neuropathy (both cranial nerve V and VII), tumour control and SRS side effects .

***Results:***

A total of 52 patients over 20 years were assessed. Of the patients receiving SRS, 25 received SRS via a frameless system. Size of tumours ranged from 0.22 to 10.32 with a mean of 2.39 at SRS. There were no new neurological deficits after SRS. Interval decrease in size in over 70% of the tumours. Factors affecting the outcomes are yet to be determined pending further analysis.

***Conclusions:***

Preliminarily, no significant difference in outcomes was found between frame-based and frameless SRS.