Gamma Knife Radiosurgery for Large Vestibular Schwannomas: A Canadian Experience

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Background

- Treatment of small to medium sized vestibular schwannomas (VS) with Gamma Knife (GK) stereotactic radiosurgery is a well-documented treatment alternative to surgical resection, with prospective nonrandomized trials demonstrating facial nerve and hearing preservation rates favoring GK over microsurgery\(^1,2\).
Tumor control rates have been described upwards of 94% in recent literature, with acceptable complication rates when compared to microsurgery. Long term actuarial resection-free control rates have been documented at 98.3%, emphasizing the lasting effect post-GK.
Larger VS pose a difficult clinical challenge, with many authors favoring surgical resection due to concerns around radiation dosing and side effects.

GK for VS 3-4 cm maximal diameter as an isolated treatment, without surgical resection, has demonstrated an 89% tumor control rate at two years\(^8\) in the literature so far. Hearing, facial nerve, and trigeminal nerve preservation rates in these large VS treated with GK have been documented at 58%, 91%, and 86% respectively\(^9\).