Acoustic Neuroma Treated Successfully with "Bloodless" Radiosurgery

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CLINICAL PRESENTATION:

This is a 55-year-old woman with a history of hypertension who had one year of progressive hearing loss and ringing (tinnitus) in the left ear. The hearing in that ear was now about 50% of normal. She had no problems with her right ear, balance was normal, and she had no other complaints. Formal audiology testing confirmed hearing loss in the left ear only. MRI with and without gadolinium demonstrated a 1.3 cm solid mass in the left cerebello-pontine angle and internal auditory canal that showed homogeneous enhancement, consistent with an acoustic neuroma.

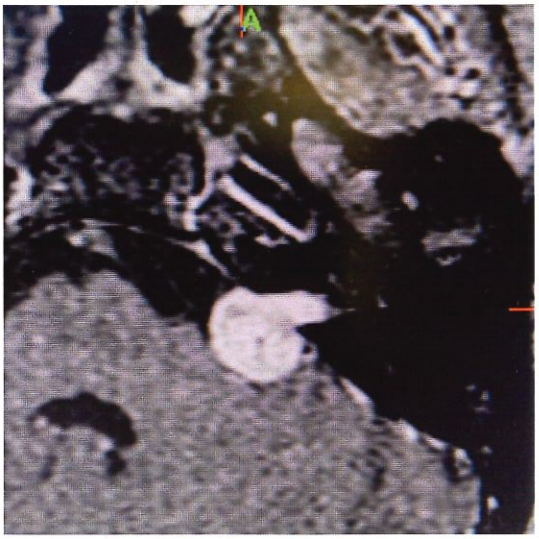

Figure 1: Baseline brain MRI showing mass in the left cerebello-pontine angle consistent with an acoustic neuroma (enhanced lesion in center).

CLINICAL MANAGEMENT AND TREATMENT:

Treatment options included (1) observation; (2) stereotactic radiosurgery; and (3) surgery. Stereotactic Radiosurgery (superfocused radiation treatments), specifically Gamma Knife (GK), was chosen because the tumor was of moderate size and GK offered comparable control to open surgery / craniotomy, but with a much lower risk profile. A treatment plan was made that was conformal to the tumor. A prescription of 12.5Gy to the 50% isodose line was delivered (Figure 2). This plan involved a mean cochlear dose of 3.5Gy.

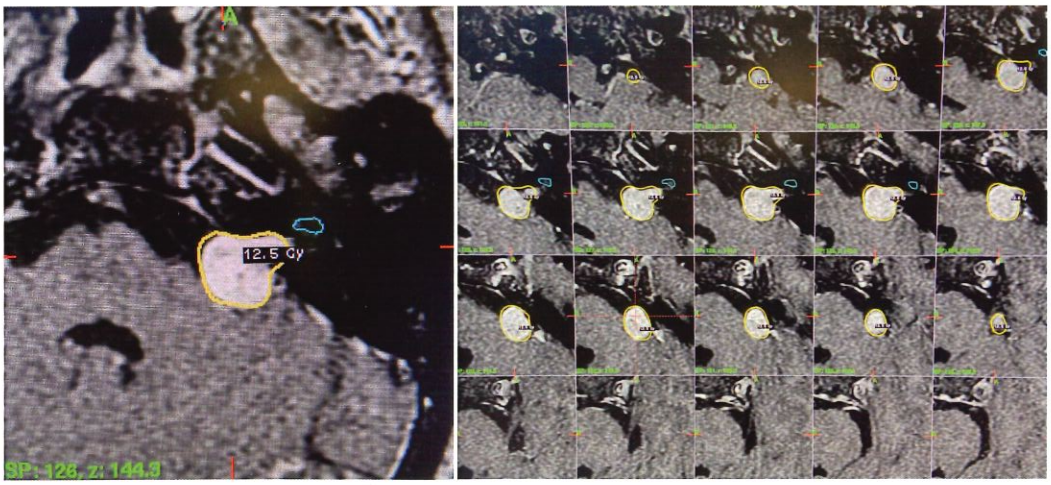

Figure 2: Intra-operative Gamma Knife treatment planning for the left acoustic neuroma. A tightly conformal treatment is set for 12.5Gy to the 50% isodose line (green circles). The cochlea has also been contoured, based off a fused image from a fine cut T2 sequence (blue circle).

Going forward, the patient will be followed clinically and with brain MRIs. It was very likely that this patient is cured of her acoustic neuroma.