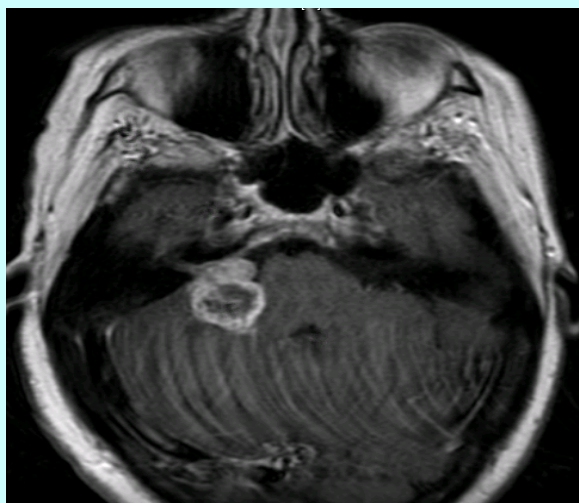


# Fractionated Conformal Radiotherapy in Vestibular Schwannoma: A single institution outcome

## Background/ Introduction

Fractionated radiotherapy is an alternative to surgery or stereotactic radiosurgery for vestibular schwannoma which can allow hearing preservation and low rates of cranial nerve toxicity<sup>1</sup>. We report our rates of local control and cranial nerve toxicity for fractionated conformal radiotherapy to a dose of 50 Gray in 30 fractions over 6 weeks using a linear accelerator and immobilisation by means of a GTC relocatable stereotactic frame or beam direction shell.



T1 axial MRI image with contrast, right sided VS

## Materials / Methods

95 patients referred for consideration from 1998-2006.

Patient records retrospectively reviewed.

42 had fractionated radiotherapy.

Baseline MRI and neurological assessment.

“Useful hearing”: able to use telephone on affected side.

## Results

Median age 63 yrs (range 28-81), 57% male, 5 have Neurofibromatosis type 2.

Mean tumour size 21.5mm on MRI.

Pre-treatment 20 (48%) had useful hearing, 18 (43%) had tinnitus, 4 (9.5%) had trigeminal and 2 (4.8%) facial nerve dysfunction.

Median follow-up 18.6 months from completion of radiotherapy.

Actuarial rates for local control, hearing preservation and preservation of trigeminal and facial nerve function were calculated by the Kaplan-Meier method using SPSS software and are quoted only to the timepoints where 5 individuals remained on follow-up.

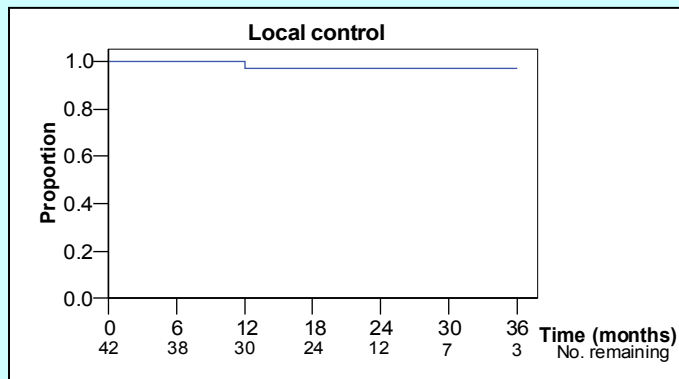


Figure: local control rate 96.9% at 1, 2, 2.5 years.

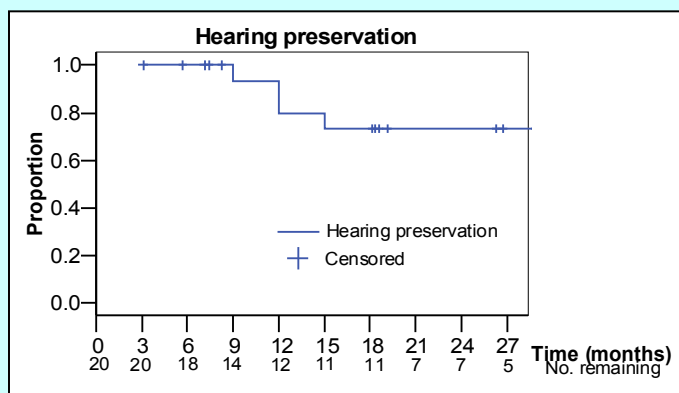


Figure: hearing preservation rate 80% at 1 year and 73.3% at 2 years among those with initially useful hearing.

Normal trigeminal nerve function (n=38) was preserved in 100%. Normal facial nerve function (n=40) was preserved in 96.8% at 1, 2 and 2.5 years.

## Conclusions

In this single institution series, fractionated linear accelerator radiotherapy gives excellent local control in vestibular schwannoma.

Although follow-up is relatively short, the rate of hearing preservation and excellent post radiotherapy cranial nerve function is promising.

## References

<sup>1</sup>Combs S, Volk S, Schulz-Ertner D et al. Management of acoustic neuromas with fractionated stereotactic radiotherapy (FRST): Long-term results in 106 patients treated in a single institution. *Int J Radiat Oncol Biol Phys* 2005;63:75-81