

Gamma Knife Radiosurgery for Treatment of Koo's Grade 4 Vestibular Schwannomas: Outcomes and Complications at Long Term Follow up (>10 years) in a Series of 37 Patients

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Introduction

Gamma knife Radiosurgery(GKRS) is well accepted treatment modality for small to medium size vestibular schwannomas however its application in larger tumours remains controversial.

Methods

Single centre retrospective evaluation of patients undergoing GKRS for Koo's grade 4 vestibular schwannomas was done. All patients except NF2 cases with more than 10 years of clinical, radiological and audiometric follow up were included. Outcomes measured were tumour control rate, serviceable hearing preservation, facial nerve preservation rate and complications at more than 10 years follow up. Various factors were analysed to assess statistical significance.

Results

37 patients were included in the study out of which 25 were males. Mean age was 39.2 years. Mean tumour volume was 6.6 cm³ (range, 3-17.5 cm³). Median marginal dose was 12 GY at 50 % isodose line. Tumour control rate at median follow up of 12.5 years was 86%. Functional hearing preservation was 23 % and facial nerve preservation rate was 94 %. Five patients (14%) needed salvage treatment in form of surgery (3), Redo GK (1) and cyst aspiration (1).

complications were noted in 6 patients (16%). Five patients developed trigeminal neuralgia and 1 patient developed hydrocephalus for which vp shunt was done 6 months post GKRS.

Conclusions

Gamma knife Radiosurgery is a safe and effective option for larger vestibular schwannomas with minimal symptoms of brainstem compression.

Learning Objectives

To study 1. tumour control rate 2. functional hearing and facial nerve preservation rate and 3. complications of GKRS for Koo's grade 4 vestibular schwannomas at more than 10 years follow up.