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Effectiveness of Preoperative DTI Tractography for Preservation of Facial Nerve in Large Vestibular Scgwannoma: Interim Results of a Prospective Randomised Study

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Introduction

Facial nerve preservation is a very important aspect of vestibular schwannoma surgery. Facial nerve paresis is a devastating complication and has an adverse psychosocial impact.In this prospective randomized study, the investigators attempts to know whether knowing facial nerve position preoperatively using DTI tractography could translate into better facial nerve preservation rates in surgery for large Vestibular schwannoma(>3cm).

Methods

After obtaining Institute Ethics Committee approval and after obtaining a written informed consent from the patient and/or his relative,100 consecutive patients of either gender with large vestibular schwannomas (>3cm) undergoing surgery will be randomized into two groups using a computer generated randomization chart – group I (DTI tractography done) and group II (DTI tractography not done). The operating surgeon will be informed about the DTI tractography predicted facial nerve position before surgery. The facial nerve preservation rates between the two groups will be compared. Various subgroup analysis has been planned depending upon the position of the facial nerve in relation to the tumor, experience of surgeon etc.

Results

The interim analysis has been done for a total of 59 patients recruited till December 2016 in the study(30 in DTI tractography group,29 in the control group).Facial nerve could be preserved in 28/30(93%) patients in the DTI group; and 22/29(76%) in the control group.

Learning Objectives

To know the efficacy of preoperative DTI tractography for identification of facial nerve in large vestibular schwannoma

Conclusions

The interim results point towards superiority of preoperative DTI tractography for facial nerve preservation in large Vestibular schwannoma.Conventional MRI should be integrated with DTI tractography in all such cases.