Vestibular Ablation Enhances Recovery in Schwannoma Patients

Sven Lindberg (1), Babar Kahlon (2), Mikael Karlberg (1), Peter Siesjö (2), Fredrik Tjernström (2), Måns Magnusson (1)
Department of Otorhinolaryngology, Head and Neck Surgery (1)
Department of Neurosurgery (2)
University Hospital, SE-221 85 Lund, Sweden

Objectives
1. To treat patients scheduled for vestibular schwannoma surgery with gentamicin and a vestibular training program in order to facilitate postoperative recovery in patients with remaining vestibular function in their schwannoma ear.
2. To investigate if this treatment ablated their vestibular function.

Methods
12 patients considered for schwannoma surgery (mean age 50 years, range 22-70; mean largest extrameatal diameter 18 mm) with remaining vestibular function were treated with intratympanic gentamycin and a simultaneous vestibular PREHAB training program. After the vestibular-audiological work-up, patients started their homebased training program for 14 days after which they returned for intratympanic installation of gentamicin, 4 installations of in total 1,2ml gentamicin (30 mg/ml buffered solution) over 2 days. A second work-up were performed 6 weeks to 4 month later. The tests included calorics, vestibular video-impulse testing of all 6 canals, VEMP, Subjective Vertical and Horizontal and posturography.

Results
A loss of caloric function was achieved in all subjects. Before treatment the caloric side diff was 19.8% (SD 18.7%) and after treatment 97.9% (SD 7.2%). All subject exhibited a full compensation with no spontaneous, positional or gaze nystagmus in darkness.

Post op recovery was fast and allowed mobilisation within a day post surgery

Caloric test on a 49y male with a 25 mm extrameatal schwannoma

Conclusion
- Intratympanic gentamicin before surgery, combined with a vestibular training program - PREHAB- reduces post operative dizziness and balance disturbances and facilitates recovery after surgery of the cerebello-pontine angle.

It can be recommended to all patients planned for schwannoma or meningeoma surgery where there is remaining vestibular function pre-op.

- If hearing preservation is intended, the risk for a gentamicin induced hearing loss has to be considered

(Acta Otorhinolaryngologica 2007, Magnusson et al)
(JNNP 2009, Tjernström et al)