A comparison of quality of life in otosclerosis patients after hearing rehabilitation with surgery or hearing aids

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Introduction

Otosclerosis is one of the most prevalent causes of conductive hearing loss. Treatment options consist of hearing-aid rehabilitation or surgery. Most studies have focused on hearing outcome after surgery and not in terms of hearing disability, quality of life or the benefit of hearing rehabilitation with hearing aids. The aim of this study was to evaluate hearing disability and quality of life in otosclerosis after intervention with either stapedotomy or hearing-aid rehabilitation.

Material & Methods

This study was part of a larger prospective non-randomized intervention study comparing outcomes for otosclerosis subjects, after primary stapedotomy or hearing-aid rehabilitation.

One hundred and thirty-four individuals were included, 93 in the stapedotomy group and 41 in the hearing-aid group.

The questionnaire, the Glasgow Hearing Aid Benefit Profile (GHABP) was answered before intervention and 6-12 months after intervention. The GHABP consists of predefined listening situations, for each situation questions are raised. Before intervention questions regarding initial disability and handicap, after intervention residual disability, use, benefit and satisfaction[1]. The questionnaire has previously been adapted and validated for hearing rehabilitation with stapedotomy[2]. Domains were calculated from the items with all listening situations included and resulting in a scale ranging from 0 – 100 (mean value – 1 x 25).

Mean values and standard deviations are presented. Group comparisons were calculated with Fisher's permutation test.

Listening situations

1. Listening to TV with the volume adjusted for others
2. Having a conversation with one person in quiet environment
3. Having a conversation on a busy street or in a shop
4. Having a conversation with several people in a group

Additional listening situations

5. Telephone with an unknown person
6. Localization of sounds
7. Quality of voice

Fig. 1

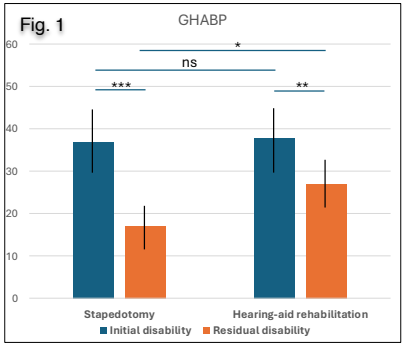
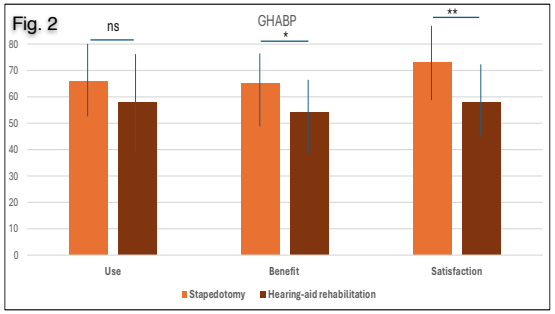


Fig. 2



For disability:
a higher score indicate a higher degree of difficulties.

For use, benefit and satisfaction:
a higher score indicate a more favorable outcomes.

Result

The study group consisted of 77 (58%) women. Mean age was 45.6 years. There were no significant differences regarding sex and age between the two intervention groups.

The GHABP demonstrated a similar level of disability before intervention. Both groups showed a statistically significant reduced disability after intervention. However, disability was significantly more reduced in the stapedotomy group compared to the hearing aid group, see figure 1. The domains for satisfaction and benefit showed high scores in both groups but statistically significant better outcomes for the stapedotomy group, see figure 2.

Conclusion

Hearing rehabilitation in subjects with newly diagnosed otosclerosis demonstrated decreased levels of hearing disability regardless of intervention. However, the scores indicated significantly better results after stapedotomy compared to hearing-aid rehabilitation.

1.Gatehouse, J Am Acad Audiol. 1999;10:80-103
2.Dahlin Redfors et al. Laryngoscope Investig Otolaryngol. 2022;7:807-815

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CoI statement on behalf of all authors:
The authors have no conflict of interest to declare