Hearing&Implants Nijmegen

Long-term quality of life with a percutaneous implant for bone conduction hearing

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Introduction

Hearing-related quality of life (HRQoL) is known to improve with a BCD for specific indications. However, little has been published about long-term HRQoL, change in quality of life over time and differences in quality of life between different indications.

Objective
To evaluate long-term HRQoL outcomes and device usage in patients with a BCD

Material & Methods

In two previously conducted clinical trials[1,2] on BCD implantation (Ponto™ system), device use, and the Glasgow Health Status Inventory (GHSI) were assessed in 75 patients at baseline, 6 months and 36 months. The GHSI determines the effect of a health problem on quality of life at the time the GHSI is completed. Scores range from 0 to 100 with higher scores indicating higher quality of life.

GHSI scores and device use at 36 months, and changes over time, were evaluated for all patients as a whole, and also in four subgroups based on indication:

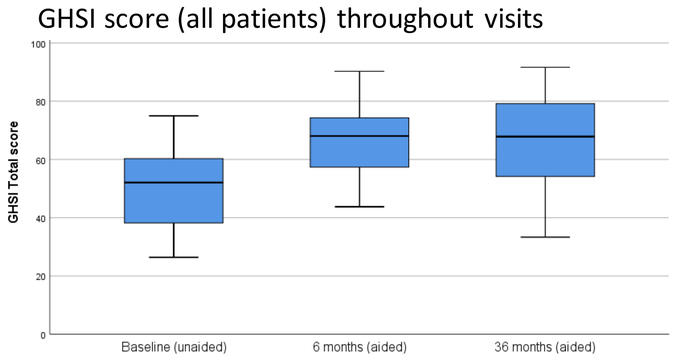
1a) Unilateral hearing loss – conductive/mixed (n=22)
1b) Unilateral hearing loss – single-sided deafness (n=14)
2a) Bilateral hearing loss fitted with one hearing device (n=16)
2b) Bilateral hearing loss fitted with two hearing devices (n=23)

Results

Device use

- 36 months: mean use 12.8 h/day (range: 0-18)
- Average usage higher in patients with bilateral hearing loss (Δ 4.3h)
- No changes over time

GHSI score (all patients) throughout visits



GHSI general subscore (all patients) throughout visits

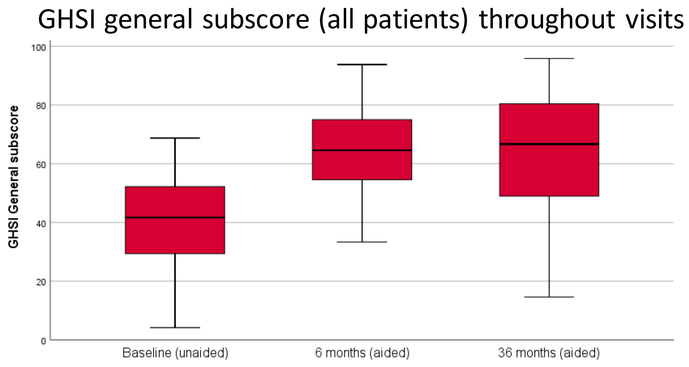
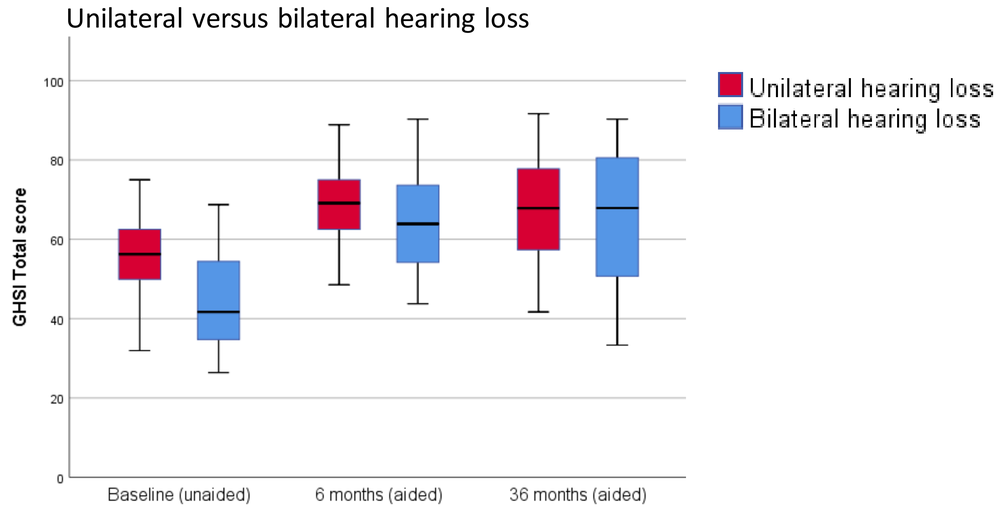


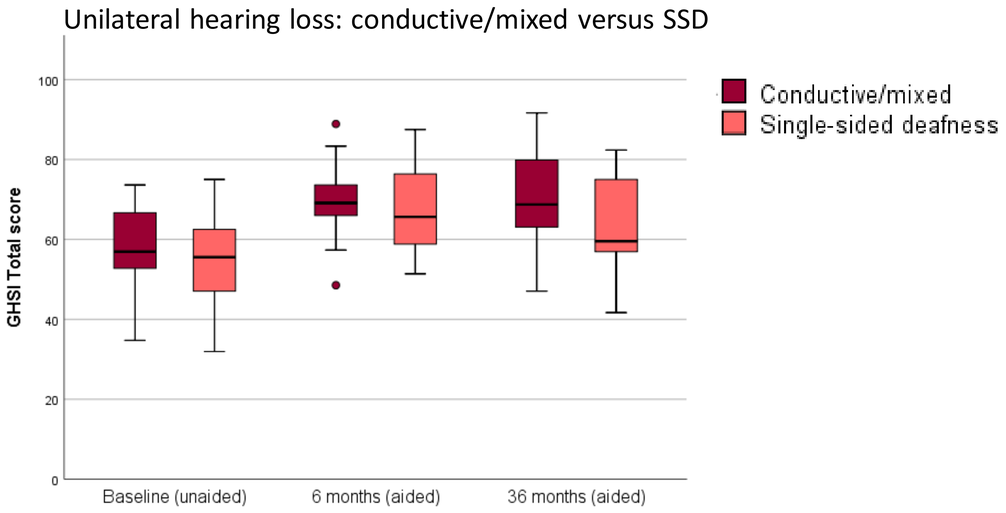
Fig 1: *Box plots illustrating the GHSI total and general scores at baseline, 6 months and 36 months after surgery for all patients together*

GHSI scores per subgroup

Unilateral versus bilateral hearing loss



Unilateral hearing loss: conductive/mixed versus SSD



Bilateral hearing loss: unilateral versus bilateral fitting

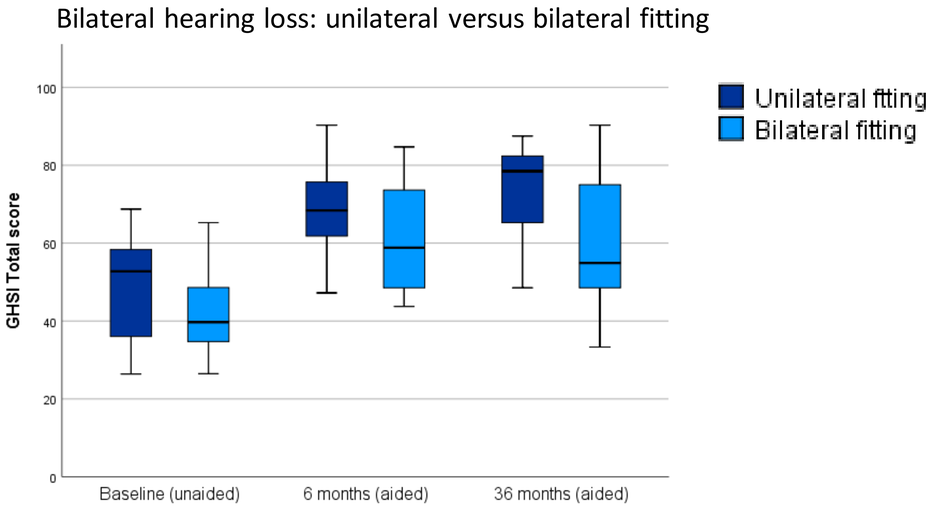


Fig 2: *Box plots illustrating the GHSI total scores at baseline, 6 months and 36 months for the four subgroups*

Discussion

- New insights into long-term HRQoL
- Prospectively collected data
- Large sample size
- GHSI: most improved patients with bilateral hearing loss

Conclusion

- **Postoperative GHSI scores are consistent over time**
- **GHSI scores improve after BCD implantation**
- **Patients with bilateral hearing loss**
  - Use their BCD more frequently than patients with unilateral hearing loss
  - Have worse HRQoL at baseline, but similar HRQoL after BCD implantation, compared to patients with unilateral loss

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Funding Oticon Medical AB (Askim, Sweden)

References

1. Nelissen RC, den Besten CA, Mylanus EA et al. Stability, survival, and tolerability of a 4.5-mm-wide bone-anchored hearing implant: 6-month data from a randomized controlled clinical trial. *European archives of oto-rhino-laryngology* 2016;273:105-11.
2. den Besten CA, Bosman AJ, Nelissen RC et al. Controlled Clinical Trial on Bone-anchored Hearing Implants and a Surgical Technique With Soft-tissue Preservation. *Otology & neurotology* 2016;37:504-12.

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