Methods and Materials

In a retrospective study all consecutive 127 stapes surgeries are included in a comparative study on audiological results. Four different stapes prostheses were used by two surgeons. The significantly best results for improvement of hearing level, bone conduction level and speech understanding were achieved with the self-retaining Titanium CliP-Piston.

In the future crimping fixation on the long process of the incus might be abandoned by implanting stapes prostheses with a self-attachment mechanism.

Results

Pre- and postoperative results of pure tone audiometry reveal the best improvement of bone conduction levels by the CliP Piston compared to the other three pistons. This might be due to the improved fixation of the CliP Piston: the tighter the fixation the better the results.

Figure 7: Change of bone-conduction for the CliP Piston alone

Figure 8: Change of bone-conduction for all four prostheses

Figure 9: Change of air-conduction levels for the CliP Piston alone

Figure 10: Change of air-conduction levels for all four prostheses

Figure 11: Hearing improvement in % in Pure Tone Audiometry

Figure 12: Improvement of speech perception in Speech Audiometry

Conclusions

Among the four stapes prostheses evaluated the CliP Piston provided the patients with the best improvements in Hearing Level, in Bone Conduction and in Speech Perception. These effects might be due to the reliable and constant fixation by the self-retaining CliP Piston compared to the manual fixation by crimping in the other prostheses. In the future crimping might be replaced by prostheses that use a self-fixation attachment.

The data of this poster was originally collected by Nadine Annabelle Aufschlag, MD and published as a Medical Dissertation Thesis. Parts have also been previously published.

References