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## Revision Stapes Surgery

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### Abstract

We present the results of our revision stapes operations from 1989 to 2004 (n = 217). Long-term follow-up was performed in the first 135 cases. Eighteen of these patients were revised because of inner ear symptoms, predominantly within the first year. One hundred and sixteen cases underwent revision surgery due to conductive hearing loss, on average after 10.6 years. One patient was operated because of dysgeusia. In 1999, we first described inner ear damage after implantation of gold prostheses. Therefore, we developed a titanium implant that was initially investigated in cell culture and subsequently tested in a clinical trial. We report on the most frequent causes that led to revision surgery such as adhesions, prosthetic problems, erosions of the long process of the incus, or refixation of the footplate, and on the different surgical techniques. In a first series of patients with a conductive hearing loss, a significant hearing improvement of 69.4% of these cases was obtained. However, this result very much depends on the selection of cases. There was no case of additional sensorineural hearing loss. Since 1999, we had mainly used titanium implants for replacement in stapes revision surgery. In a second series, a significant hearing improvement of 76.2% was found. One patient with a platinum Teflon implant had to be revised because of vertigo and conductive hearing loss which was observed during MRI.

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Stapes surgery is one of the most standardized and successful procedures in otology. This does not apply to revision surgery, which is performed after shorter or longer periods of time due to very different causes of failure. The results of the revision surgery are considerably influenced by the selection of cases and the specific surgical techniques used.

The aim of this study was to describe pre- and intraoperative findings in 217 cases, our general surgical rules and special techniques as well as the post-operative results of the first 135 cases.