

Abstract EFAS/DGA 2007

First results for the treatment of combined hearing loss using the Vibrant Soundbridge with a round window approach and prosthesis bound application

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Current criteria for treatment of patients with a Vibrant Soundbridge® (VSB) are limited to patients with an unimpaired middle ear and an intact ossicular chain. In the present study, these criteria were extended in order to treat patients with mixed hearing loss and ossicular chain defects.

In six patients with combined hearing loss either a floating mass transducer (FMT) was implanted in the round window niche or it was coupled with a modified ossicular replacement prosthesis (TORP or PORP). All patients had previously gone through multiple tympanoplasties because of varying chronic middle ear conditions. Their hearing improvement was poor though. At time of implantation none of the patients showed signs of recent or present inflammation.

The postsurgical thresholds were tested at an average of 30 dB [HL] after implant activation (unaided between 50 dB and 75 dB). The 50%-threshold for word recognition was reached at 45 dB [SPL] (unaided 60 dB). Most patients achieved 100% monosyllable comprehension at 65 dB [SPL] with this supply.

These results show that the implantation of the active middle ear implant VSB at the round window niche or coupled to a prosthesis in a tympanopasty type III offers a promising treatment option in patients with combined hearing loss.

