Internal Auditory Canal Decompression

Hearing response following an osteodural decompression of the internal auditory canal (IAC) is controversial.

To evaluate the course of auditory brainstem responses (ABRs) and the early hearing response during the first year following IAC decompression for small to medium-sized vestibular schwannomas occurring in neurofibromatosis type 2 (NF2).

Retrospective chart review of middle fossa craniotomy for IAC osteodural decompression in NF2-related vestibular schwannomas.

Twelve NF2 patients were operated on from 2011 to 2016 for IAC decompression. All had NF2 according to the Manchester criteria. All had a progressive change of their ABRs documented from the diagnosis of NF2 over a mean period of 6.25 [0.36;10.9] yr. Treatment was proposed to stop hearing progression based on the speech discrimination scores (SDSs; n = 4) or for hearing maintenance (n = 8). In patients with prior hearing progression, hearing responses were observed in 3 of the 4 patients during the first year. One patient kept on progressing. In the hearing maintenance group, the SDSs remained stable. SDSs improved from 85% [20-100] to 92.5% [60-100] on average (n = 12) and from 55% [20-80] to 77.5% [50-100] in the hearing progression group (n = 4). ABRs improved in 4 patients following decompression.

IAC decompression allows early objective hearing responses in select patients. Bonne et al., suggest that the procedure should be offered to patients with hearing progression based on their SDSs and/or associated progressive increases in their wave III and V latencies on ABRs [1].

1)
Bonne NX, Risoud M, Hoa M, Lemesre PE, Aboukais R, Rhun EL, Dubrulle F, Baroncini M, Lejeune JP, Vincent C. Hearing Response Following Internal Auditory Canal Decompression in Neurofibromatosis Type 2. Neurosurgery. 2019 Mar 19. pii: nyz057. doi: 10.1093/neuros/nyz057. [Epub ahead of print] PubMed PMID: 30888036.