Bonebridge Implantation in the Middle Cranial Fossa: Clinical and Temporal Bone Study

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The recommended site of Bonebridge implantation is the Sinodural angle (SDA), followed by the Retrosigmoid region (RS). We assess the potential of a third implantation site in the Middle Cranial Fossa (MCF) (Fig 1).

Methods

Assess post-operative pain score and determine the effectiveness of each implantation site as measured with the Laser Doppler Vibrometer (LDV).

17 clinical cases. Outcome was measured with speech discrimination. Six human cadaveric temporal bone studies were performed with the transducer implanted in the three regions. Cochlear promontory vibration was measured with the LDV.

Results

LDV studies show no difference in cochlear promontory vibration with the different implant sites (Fig 2). There was significantly reduced postoperative pain in the SDA and MCF compared to RS (Fig 3).

Conclusions and Significance

The MCF is accessible from an extended post-aural incision and should be considered as an alternative implantation site.

Audiological results and cochlear promontory acceleration are comparable with the other sites.