

INVESTIGATION OF CURVED INTRACOCCHLEAR ELECTRODE ARRAYS

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It has been demonstrated that the Melbourne/Cochlear multi-channel cochlear implant is safe and effective for use in profoundly-totally deaf patients. Recent studies have highlighted the importance of deep insertion and placing the electrodes closer to the spiral ganglion neurons. In order to improve the electrode insertion depth and proximity to the modiolus, we have investigated curved electrode arrays. Prototypes of such arrays and their accessory inserter have been made. Trial insertions were performed on skeletonized cochleae of human temporal bones. The preliminary results showed that, when compared with conventional straight electrode arrays, the curved arrays could be inserted deeper and located closer to the modiolus. These findings indicate that the curved electrodes currently under investigation should result in a reduction in stimulus threshold and improve pitch perception and may also result in the use of more channels of stimulation.



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