Cochlear implantation in patients with common cavity deformity

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Introduction
Cochlear implantation for patients with common cavity deformity (CCD) can be difficult, with a higher incidence of intra- and post-operative complications; outcomes with CCD patients are also highly variable. In this study, intra- and post-operative complications were compared between the traditional facial recess approach (TFRA) and the transmatoid lateral semicircular canal approach (TLSCA). Audiological outcomes and the benefit of using customized electrode arrays for CCD patients are also discussed.

Methods
Retrospective review of 13 cochlear implant (CI) patients with CCD. Six patients were implanted with the TFRA using traditional electrode and 7 patients were implanted with the TLSCA using customized electrode. Intra- and post-operative complications were reviewed. Audiological outcomes were measured three months to two years after activated.

Results
Intra-operative cerebrospinal fluid (CSF) leakage of TLSCA group was significant less than the TRFA group (P < 0.05). What’s more, the surgical time of TLSCA is significant shorter than the TRFA (P < 0.05). The average outcome scores of TLSCA are also better than the TFRA, but there was no significant difference.

Conclusion
For CCD patients, the TLSCA for cochlear implantation is recommended; customized electrode arrays may be additionally advantageous. The intra-operative CSF occurs less for TLSCA using customized electrode than TFRA using traditional electrode, and the TLSCA spend less surgical time.