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MANAGEMENT OPTIONS IN ADVANCED OTOSCLEROSIS AND THEIR OUTCOMES

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Introduction: Advanced otosclerosis affects nearly 10% of patients with otosclerosis. Ossification of the cochlea increases with the course of the disease and may cause sensorineural or mixed hearing loss. Hearing aids, middle ear implants, stapedotomy and cochlear implants are the various management options for hearing loss in such a scenario. Stapedotomy is a treatment option for patients with mixed hearing loss and good speech discrimination (SDS >50%) where by serviceable audiological outcomes are achievable when a hearing aid is given after obviating the air-bone gap with surgery. Cochlear implantation (CI) is used successfully in patients with far advanced otosclerosis with poor cochlear reserve (SDS <50%) either as primary treatment or for progressive sensorineural loss following stapedotomy.

Methods: This presentation highlights the surgical issues related to advanced otosclerosis and analyzes the outcomes of stapedotomy + H.Aid and cochlear implantation, in a cohort of 153 patients with advanced otosclerosis who were managed at a premier tertiary referral ENT centre in South India 1997-2017.

Results: Based on the rationale for candidacy as mentioned above, 110 of these patients underwent stapedotomy and received H.Aids while 43 patients received cochlear implants. Complete electrode insertion was possible in 39 patients and partial insertion was done in 4 patients due to partial cochlear ossification. Facial nerve stimulation was seen in 5 CI patients and appropriate management given. The outcomes of cochlear implantation and stapedotomy + H.Aid were both found to be satisfactory, with low complication rates (<5%). The patient related outcome measures were comparable in both cohorts with no obvious statistical differences ($p<0.05$).

Conclusion: A stringent candidacy criteria need to be defined for offering stapedotomy versus CI in advanced otosclerosis. Judicious counseling of patients regarding the rationale for choosing either intervention and explaining their realistic outcomes remains paramount.

Recent Publications

1. Kameswaran M, Natarajan K, Parthiban M, Krishnan P V and Raghunandhan S (2017). Tuberculous otitis media: a resurgence? The Journal of Laryngology & Otology, 131(9):785-792.
2. Raghu Nandhan Sampath Kumar and Richard M Irving (2017) Management of acute facial paralysis. Morecambe Bay Medical Journal (MBMJ) 7(9):224-229.
3. Geetha Nair, Raghunandhan Sampathkumar, Senthil Vadivu, Rabindra Bhakta Pradhananga and Mohan Kameswaran (2017) A study of anomalies of cochlea and cochlear nerve in children with congenital profound hearing loss – an Indian perspective. Journal of Scientific Research & Reports 13(1):1-11.
4. Raghunandhan Sampathkumar, Deborah Mawman, Divyan Sankaran, Christine Melling, Martin O'Driscoll, Simon M Freeman and Simon K W Lloyd (2016) Cochlear implantation in early deafened, late implanted adults: do they benefit? Cochlear Implants International DOI: 10.1080/14670100.2016.1161142.
5. S Raghunandhan, A Ravikumar, Mohan Kameswaran, Kalyani Mandke and R Ranjith. (2015) Electrophysiological correlates of behavioral comfort levels in cochlear implantees – a prospective study. Indian Journal of Otolaryngology and Head & Neck Surgery DOI: 10.1007/s12070-013-0679-x.

Biography

Raghu Nandhan Sampath Kumar is a Consultant ENT Surgeon at Madras ENT Research Foundation (MERF), Chennai, a premier tertiary referral ENT care Institute in South India. He specializes in Neuro-Otology, Auditory Implantation & Skull-Base Surgery having received higher surgical training from reputed centers like Manchester and Birmingham in the UK. He is a Fellow of the Royal College of Surgeons of Edinburgh, overseas member of ENT UK and British Cochlear Implant Group. He has a decade of experience with Cochlear & Brainstem Implants at MERF, which is today one of the largest centers in the world for Implantation Otology and he is currently the Clinical Lead for Otology at this Institute. He holds a PhD in Cochlear Implant Audiology and is also the Research Lead at MERF with keen interest in spearheading the various ongoing and future research programs of the institution. He has around 70 publications in indexed medical journals and has presented research papers in international conferences around the world, where he has received awards. He has co-authored seven textbook chapters and is one of the very few Indian authors to write chapters in Scott-Brown and Logan-Turner. Apart from his passion to be a competent clinician and skilled surgeon, he dedicates his professional time to being a researcher, academic, medical leader, teacher and trainer for his peers and junior colleagues.

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