TITLE OF ePOSTER:
Surgical Challenges in Paediatric Auditory Brainstem Implantation - A South Asian Experience

INTRODUCTION: Auditory brain stem implantation is an implantable electrode device to treat neural hearing loss. ABI system consists of a receiver- stimulator, electrode array and electrode plate internally and a speech processor, microphone and transmitter coil externally. The device is kept on the cochlear nucleus and it stimulates the nucleus by which the patient perceives sound[1]. Knowledge of the anatomical landmarks and variants in anatomy of the brainstem is vital for auditory brainstem implant surgery. Pediatric Auditory Brainstem Implantation is indicated for children with congenital cochlear aplasia, absent/hypoplastic vestibulocochlear nerve (VCN), for whom cochlear implantation is not possible[2]

AIM OF THE STUDY: To study the anatomical variants and the outcomes of auditory brainstem implant implantation. To determine if different grades of cerebellar flocculus and visibility of choroid plexus effect placement of ABI electrode. To determine the position of 7^{th},8^{th} and lower cranial nerves with respect to taenia of fourth ventricle and presence of the antero-inferior cerebellar artery. To assess the outcomes by CAP, SIR scores taken at 3^{rd}, 6^{th}, 9^{th} and 12^{th} month[3].

STUDY DESIGN: Retro prospective study (From- 2006 till date) at Auditory implant centre in Madras ENT research foundation, which includes 27 children who had undergone ABI surgery and are being followed up for 1year, post operatively.

COCNCLUSION: ABI surgery involves frequent anatomical variations surrounding the lateral recess which makes the positioning of the auditory prosthesis difficult[4]. Flocculus of the cerebellum can be of different grades[5]. Anteriorly placed AICA and higher grades of

flocculus can make the placement of ABI electrodes difficult and adversely affect the post-operative subjective outcomes in implantees.

Key words: ABI and electrodes, Cerebellar flocculus, cochlear nucleus, lateral recess, CAP and SIR scores.

References

1. Colletti.G, Marco Mandala, Colletti. L, Colletti. V Surgical Visual Reference for Auditory Brainstem Implantation in Children with Cochlear Nerve Deficiency, American academy of Otolaryngology–Head and Neck Surgery 2015, Vol. 153(6) 1071–1073

2. Noritaka Komune, Kaan Yagmurlu, Satoshi Matsuo, Koichi Miki et al Auditory Brainstem Implantation: Anatomy and Approaches operative Neurosurgery volume 11 number 2:306–321, june 2015.

3. Sennaroglu L, Colletti V, Manrique M, et al. Auditory brainstem implantation in children and non-neurofibromatosis type 2 patients: a consensus statement. Otol Neurotol. 2011;32:187-913.

4. Klose AK, Sollmann WP. Anatomical variations of landmarks for implantation at the cochlear nucleus. J Laryngol Otol Suppl.2000; 27:8-10.

5. Sunil Goyal, Shyam S.K, Mohan Kameswaran, Vasudevan M.C, Ranjith, Kiran Natarajan, does cerebellar flocculus size affect subjective outcomes in pediatric auditory brainstem implantation, International Journal of Pediatric Otorhinolaryngology 97 (2017) 30e34



Short Biography

Dr. Raghu Nandhan is 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 7 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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