**Placement of a Medel Combi 40 + Cochlear Implant after a modified translabyrinthine approach for acoustic neuroma removal in an NF2 patient (Video - surgical techniques)**

M.A. Aristegui Ruiz MD, A. Denia Lafuente
ENT Department, Hospital Central Cruz Roja Madrid
We will show a video of the surgical strategy used in a 53 year old female patient with NF2. The patient had a 2cm AN in the right side with a deaf ear, and sensorineural hearing loss in her only hearing ear (left side); she had a 4 cm multicystic AN in that side. The smallest tumor was first removed through a TLA with the facial and the cochlear nerves being preserved. She had a right facial nerve paralysis which recovered to a grade III (House and Brackmann). No other complication occurred. A cochlear implant (CI) failed to be placed in that right side months later because of cochlear ossification. After several months removal of the largest AN and placement of a cochlear implant in a single stage was planned. The tumor was completely removed through a modified translabyrinthine approach with facial and cochlear nerves preserved, and a Medel COMBI 40 + cochlear implant successfully placed. The patient had an uneventful recovery with normal facial motor function and left the hospital one week later. The implant was adequately programmed and the patient is still under rehabilitation reaching quite good level of discrimination.

Mailing Address: Dr. Miguel Aristegui Servicio ORL - Hospital Central Cruz Roja Avda. Reina Victoria 26 - 28003 Madrid SPAIN Phone: 00 34 629 020537 Fax: 00 34 91 3559612 E-mail: aristegui@ctv.es

**The relationship between primary caregiver input and 5 year outcomes for young children using the multichannel cochlear implant.**

Dettman, S.J.1,2; Brown, P.M.1; Blamey, P.J.1 & Dowell, R.C.1,3,4
1. The University of Melbourne, Department of Learning and Educational Development.
2. The Royal Victorian Eye and Ear Hospital.
3. Cochlear Implant Clinic.
4. Cooperative Research Centre for Cochlear Implant and Hearing Aid Innovation.
5. The University of Melbourne, Department of Otolaryngology.

Primary Caregivers make a number of systematic modifications to linguistic, semantic and prosodic cues when speaking to young hearing impaired children. No studies have specifically addressed the existence of linguistic, semantic and prosodic modifications used by Primary Caregivers of hearing impaired children using cochlear implants. It is not known whether such modifications facilitate or interfere with communication development and implant use. This study examined 8 mother/child dyads using detailed analysis of pre-implant and 3, 6, 12 month post implant video recorded play samples. At 5 years post implant open set speech perception tests and formal language measures were completed. Preliminary results suggest that, in addition to factors already known to affect implant use such as age at implant and duration of hearing loss, specific features of the Primary Caregiver’s input in the crucial first year post implant will affect the child’s speech perception and language outcomes. The results of this study will be used to develop materials and methods for professionals guiding parents working with young hearing impaired children.

**Factors affecting speech perception outcomes for older children using multichannel cochlear implants**

Richard Dowell1,2, Shani Dettman1,4, Katie Hill1, Elizabeth Winton1, Rod Hollow1, & Graeme Clark1,3
1. The University of Melbourne, Department of Otolaryngology.
2. The Co-operative Research Centre for Cochlear Implant and Hearing Aid Innovation.
3. The Bionic Ear Institute.
4. Cochlear Implant Clinic, Royal Victorian Eye and Ear Hospital, Melbourne, Australia.

Experience with cochlear implantation in early-deafened teenagers or young adults has been somewhat disappointing, however, in recent years a proportion of older children have demonstrated excellent speech perception performance. There appears to be a wide gap between the good and poor performers within this group. It is important to investigate the possible factors influencing performance so that adolescents and their families are able to make informed decisions regarding cochlear implant surgery. This study considered a number of factors in a group of 25 children implanted in Melbourne between the ages of 8 and 18 years. Each subject completed open set speech perception tests using BKB sentences before and after implantation and pre-operative language testing using the Peabody Picture Vocabulary Test. Data were collected regarding the type of hearing loss, age at implant, age at hearing aid fitting, audiometric details, and the pre- and post-operative communication mode. Multivariate analysis suggested that three factors have a significant predictive value for post-implant speech perception: pre-operative open set speech perception test score, duration of profound hearing loss and equivalent language age. These three factors accounted for 66% of the variance in this group. The results of this study suggest that children who have useful pre-implant speech perception, and higher age-equivalent scores on language measures, would be expected to do well with a cochlear implant. A shorter duration of profound hearing loss is also advantageous. Mean speech perception scores for the older group were not significantly different from younger children.

**Relation between MCL and ESRT in young children, experienced implant users**

Lorens A., Piotrowska A., Sliwa L., Walkowiak A., Skarzynski H.
Institute of Physiology and Pathology of Hearing Pstrowskiego 1, 01-943 Warsaw, Poland

Aims: The aim of this study was to determine the correlation between the maximum comfort loudness levels (MCL) and the electrical elicited stapedius reflex threshold (ESRT).

Method: Material consists of 6 prelingually deafened children, sampled from the group of the experienced users of Combi 40+ implant system. Their processors have been programmed according to the paediatric fitting procedure based on behavioural observation. Duration of experience with Combi 40+ implant was at least one year. The age of children ranged from 2 years and 3 months to 5 years and 7 months. The ESRT was measured postoperatively, contralaterally, using an up/down protocol. ESRT values were compared with MCL of child’s map in each channel.

Results: The ESRT was possible to be measured in each case. The fairly high correlation between the MCL and ESRT was observed. Although in 2 cases in some channels the ESRT was relatively higher than the programmed MCL, however, in these children, there were no evidences of discomfort during the measurements. The child’s map was than corrected according to the measurements results. Children accepted the new map.

Conclusion: Obtained results confirmed the results of other studies that the ESRT could be very useful in estimation of MCL in paediatric population.
Author/s:
Dowell, Richard C.; Dettman, Shani J.; Hill, Katie; Winton, Elizabeth; Hollow, Rod; Clark, Graeme M.

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