SUBJECTIVE BENEFIT AFTER PARTIAL DEAFNESS COCHLEAR IMPLANTATION

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OBJECTIVE

Benefits after cochlear implantation are not limited to auditory gains, but also extend to improvement in physical, psychological, and social function. Cochlear implant (CI) eligibility criteria have broadened to now include a variety of patient groups. To clearly understand the complex change experienced by patients and their families, it is necessary to use subjective questionnaires for the individual patient groups. One distinct group of CI patients includes individuals with Partial Deafness (PD) who frequently have normal hearing in the low frequencies. Individuals with PD often do not wear a hearing aid. In 2002, our centre pioneered partial deafness cochlear implantation (PDCI).

Since 2004, children with PD have been implanted at the Institute of Physiology and Pathology of Hearing. The benefits of PDCI for both adults and children have been well documented (Skarzynski et al., 2009, 2007, 2006, 2003; Lorens et al., 2008). The benefits of PDCI have primarily been evaluated with objective measures of sound detection and speech discrimination. Although subjective benefit after conventional cochlear implantation for profound hearing loss has been assessed with a wide range of methodologies (Archbold et al., 2002), these techniques have not been extended to individuals undergoing PDCI. As the paediatric PDCI group is particularly unique, we were especially motivated to gather evidence of subjective benefit from multiple sources. We believe that parents are likely the primary source of information about PDCI children. We created an open-ended questionnaire to assess parent's perception of the process and outcomes of PDCI. Open-ended questions were seen as the most appropriate format to permit parents to freely describe their perceptions of the experience of PD children undergoing cochlear implantation.

MATERIAL AND METHODS

Parents of 20 PDCI children implanted at the Institute of Physiology and Pathology of Hearing in Warsaw completed the questionnaire. All children had used a CI for at least 2 years. Their experience with a CI ranged between 2 and 6 years (mean 3.51 years).The age of implantation varied between 5 and 13 years and age at the time of this study was between 6 and 16 years. All children were educated in a main stream setting and raised in hearing families. The children had no additional disabilities.

The questionnaire was completed by the children's parents. Parents were asked to answer the questions in their own words without any specific suggestions from the investigators. Questionnaires were sent to patients' homes for completion. The questionnaire consists of 12 open-ended questions arranged in chronological order that addressed the following issues: child's functioning prior to implantation, decision making, difficult moments, changes in hearing perception that appeared after implantation, influence of these changes on patient's life and family, appraisal of current situation, future concerns, advice for other patients in a similar situation.

RESULTS

The parents of all 20 children completed and returned the questionnaires. All questionnaires were analyzed by the investigators independently. For each area, the researcher would choose the most frequently mentioned response that underscored aspects of the patient’s experience. All answers were subsequently discussed by the investigators and a list of most common aspects constructed. The following table illustrates these areas, major factors mentioned, and number of responses.

AREA	**MAJOR FACTORS MENTIONED**	**NO.OF RESPONSES**
Child’s functioning prior to implantation	Communication difficulty Lack of perception of high frequency sounds Keeping distance from strangers Shyness	18 17 14 10
Decision making	No benefit from hearing aids Problem with speech understanding	18 16
Difficult moments	Surgery First few days after implantation	12 10
Changes in hearing perception that appeared after implantation	Improvement in speech comprehension Perception of new sounds Improvement in communication	17 16 16 12

	Enriched vocabulary	
Influence of these changes on patient’s life and family	Increased self-confidence Relationship improvement Increased use of computer, TV, radio	20 15 14
Appraisal of current situation	Good decision More independent	17 13
Future concerns	Education Device failure	15 13
Advice for other patients in similar situation.	Request more information Not to hesitate too long	14 13

CONCLUSIONS

The most common issues raised by parents were the child’s progress in developing communication and a general increase in confidence. Children undergoing conventional cochlear implantation have very similar results, primarily a change in confidence and improved communication ability (Archbold et al., 2002). Our research demonstrated substantial benefit for children with partial deafness who previously had not been considered for implantation.

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