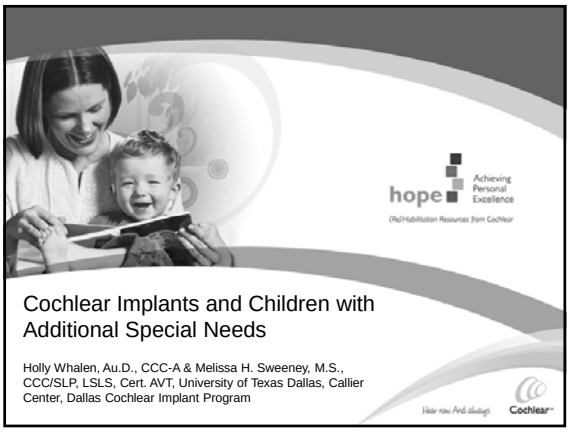

Cochlear Implants and Children with Additional Special Needs

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Introduction

Cochlear America's Commitment to Educational Outreach

Our Presenters

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The Callier Center is a member of the Dallas Cochlear Implant Program, a collaborative enterprise of the UT Dallas Callier Center, UT Southwestern Medical Center, and Children's Medical Center

Estimated that 30-40% of children who are deaf and hard of hearing have additional diagnoses such as:

- Autism
- Neurological Disorders
- CHARGE
- Cytomegalovirus
- Cognitive Impairments
- ADD/ADHD
- Meningitis
- Cerebral Palsy
- Usher's Syndrome
- DiGeorge Syndrome
- Goldenhar Syndrome
- Prematurity
- Trisomy 22
- Waardenburg Syndrome
- Sensory Integration Dysfunction

More Children with Additional Special Needs Receiving CI

- Based on surveys, approximately 25% - 50% of children followed by some Cochlear Implant programs have multiple disabilities (Johnson, K, & Wiley, S)
- The number has increased over the years due testing and programming techniques that do not require full participation on part of the child

Our Experience with CI and Additional Special Needs

- Our program strongly believes that children with multiple disabilities can benefit from cochlear implants
- For children who are deaf and have multiple disabilities to benefit and be successful with a cochlear implant it requires thorough evaluation, monitoring of progress, dedication by the family, and a total team approach

CANDIDACY EVALUATION

Questions To Answer During Candidacy Evaluation

- Is the child a candidate audiologically?
- Will the child get more benefit with a CI than with hearing aids?
- Will the child be able to use this information and demonstrate functional auditory skills?
- Does the child have the potential to develop spoken language? Will their oral communication skills improve in any way with a CI? What types of improvement expected?
- Will the child's quality of life improve?
- Will the child's overall general communication improve?
- Are there any medical contraindications to surgery?

Dallas Cochlear Implant Program Evaluation Process

- MRI
- Appointment(s) with Surgeon
- Genetic testing
- Discussion with reimbursement/business office
- Speech-Language Evaluation
- Audiological Evaluations
- Information also gathered from school, ECI, therapists, teachers, other professionals that have worked with or evaluated child
- Family meeting to discuss test results and prognosis
- Device Selection Meeting

Audiological Evaluation

- Unaided, ear specific testing
- Aided soundfield testing with appropriate amplification – ear specific (if possible)
- Speech perception testing
  - best aided condition
  - 55 dB HL with recorded stimuli (if possible)
    - ESP (low verbal/standard version)
    - single word discrimination tests – GASP, MLNT, LNT, PBK
    - sentence discrimination tests – HINT-C in quiet and in noise

Testing Children with Additional Special Needs

- Often children with additional special needs are unable to complete traditional testing
- While an ABR may be primary test used to diagnosed hearing loss, behavioral testing is also important
- Behavioral testing can show us the functional skills they have and the ability to be conditioned
- Conditioning the child with a vibrotactile stimulus as well as an auditory stimulus can help the a response may be more effective task

Testing Children with Additional Special Needs

- Using children's music to elicit a response may be more effective than speech
- Including the child's speech pathologist can help identify a typical response for that child is also helpful
- Using only one technique may not be enough
- You may need to incorporate multiple methods e.g., Play , VRA, BOA

Speech Perception Testing

- Many of these children will not be able to complete traditional testing
- Parent report measures can help provide additional information that you will not be able to gain from formal testing
- Training tasks (such as ESP low verbal version) help you to know if the child can be trained to do tasks such as pattern perception

Speech-Language Evaluation

- Expressive/Receptive Language Evaluation
- Articulation Evaluation
- Oral Motor Evaluation
- Evaluation of Communication Attitude
- How does the child communicate?
- Do they use listening for communication?
- Does the child exhibit non-verbal communication, such as eye contact, joint attention, turn taking?

Factors Related to Implant Use and Success

- Chronological Age
- Duration of Deafness
- Medical/Radiological
- Multiple Disability
- Hearing Aid Usage
- Receptive/Expressive Language
- Oral Motor Skills
- Speech Communication Attitude
- Behavioral Issues
- Family Structure and Support
- Expectations
- Educational Environment
- Availability of Support Services
- Other

Appropriate Expectations

- It is most important for the family and other individuals working with the child to have appropriate expectations and realistic goals.
- Hearing may not be the most significant concern at a particular time and other areas may need to be addressed more immediately
- If there is a suspicion of an additional diagnosis, it is also important to address the child as a whole and make necessary referrals.
- Breakdown goals into smaller more attainable successes
- Expectations should be consistent among all team members

Referrals

- As we work closely with the family it is important that when we recognize atypical behaviors, developmental or health concerns to refer the child to additional professionals to address these areas
- Referrals may include: neurologist, developmental pediatrician, developmental psychologist, psychiatrist, geneticist, occupational therapist, infectious disease specialist, or SLPs with other areas of expertise such as AAC

Initial Stimulation

- As with any child you can not predict how they will respond, this is especially true for children with additional special needs
- Caregivers should be prepared by the CI team that there may be limited to no response at initial activation. This preparation will help to reduce disappointment
- Some children with severe sensory difficulties may only be able to tolerate the device (without any stimulation) initially, once they are able to tolerate wearing the device turned “off” then stimulation can be added gradually

Consistency of Device Use

- The most important aspect of cochlear implant use is consistency
- Caregivers often have difficulty with retention
- Headbands and hats can be used, but be careful that the coil does not slip out of place
- Toupee tape is another option, but watch for irritation or redness
- Wheelchairs can make keeping a coil on very difficult, especially in bilateral recipients. Padded headrests that sit lower around the head are easier to work with than those with a metal backing. If this is a potential concern for a patient, it may be helpful to discuss placement with the surgeon prior to surgery

Alternative Wearing Options

- It may take several weeks and several trials of different options to identify the best wearing option
- Children without a pinna or severely malformed pinna may need to pin the processor to the shirt or use a longer cord. Other children may need to wear the speech processor on their contralateral ear.
- Make sure caregivers understand where the microphone is located to avoid covering it with clothing or tape
- Increasing the magnet strength may not solve the problem and may be dangerous to the patient.

Rehabilitation/Therapy

Goals

– Improve child's auditory/listening skills

– Establish communication system

TIPS TO IMPROVE LISTENING SKILLS

Specific Strategies

- Create a listening environment
- Create a communicative environment
- Hand Cue
- Acoustic Highlight
- Auditory Sandwich
- Parent participation
- Dialogue
- Developmental Order
- Follow the Child's Lead
- Flexibility is the key!!!

MOVE ALONG A "CONTINUUM OF CUEING"

Least to Most

An Important Consideration

Child's Developmental Level

Child's Motor Limitations

Child's Sensory Needs

Establishing Communication Mode

- Do not limit yourself to one method
- Children with CI and additional special needs may need alternative communication modes
- After assessment and consideration, consider picture systems or other alternative communication devices

- Strategies may change over time for a child
- Just because you start with one "plan" does not mean you are "stuck" with it. However, be clear to caregivers that you are changing your recommendation, your prognosis, or your approach.

MONITORING PROGRESS IS ESSENTIAL TO DETERMINE NEED FOR CHANGE AND FUTURE INTERVENTIONS

WHAT IS SUCCESS?

Success is Individual

- Defining success may be difficult in children with additional disabilities
- Seeing change may take months and years of training
- Success may have a very wide range of skill level from one child to another
- Help the family identify success
- The success is a result of the family's hard work and dedication
- The feeling of success encourages the family to continue on this journey

Success may be:

- Improved sound awareness
- Increased ability to “be a part” of the family
- Increased ability to respond to environmental sounds
- Increased ability to recognize environmental sounds
- Increased attentiveness to caregiver’s voice
- Increased “focus”, connection to environment
- Improved overall communication

WORKING TOGETHER

Working Together is Critical

- All professionals working with the child must work together
- Different professionals bring different areas of expertise to the discussion
- Management discussions amongst team members may initiate ideas of alternative and creative test and therapy techniques to meet the needs of the child

- It is helpful to discuss ideas and share techniques that are working in one setting that may transfer to another
- It also may be helpful to verify atypical behaviors that may require referral
- Staffing meetings help to bring a fresh perspective on the approach being used with the child
- Celebrating the successes of the child within the team help to identify strategies that may work with other children and provides encouragement and reinforcement to team members

Case 1

- Congenital CMV
- DNP Newborn Hearing Screen
- ABR at 1 month
- Cortical Blindness
- Swallowing disorder
- Seizure Disorder requiring medication
- Global developmental Delay
- Parent had appropriate expectations at time of candidacy evaluation
- Received a CI at 12 months of age
- Child is wearing the device consistently, becomes upset when device does not work, alerts to some sounds (not consistent)

Case 2

- Hearing loss diagnosed at 5 months of age
- Fit with hearing aids at 6 months of age
- Enrolled in PT, OT, and AV Therapy
- Received cochlear implant at 2 years 8 months of age
- Diagnosis – Autism
- Currently, child is in high school and while her spoken language is excellent, she continues to require support related to pragmatics

Reference

Johnson, K.C. & Wiley, S. (2009). Cochlear implantation in children with multiple disabilities. Published in *Clinical management of children with cochlear implants*, L.S. Eisenberg (ed.), Plural Publishing, San Diego.

Upcoming Online Session

Next Up—Last HOPE Online for the Season

Tuesday, June 8, 3:00 pm ET

High Expectations and Optimal Outcomes for Students with Cochlear Implants (Professionals)

Judy Horvath, M.A. CED, LSLS Cert AVEd.
Bolesta Center, Tampa FL

- Recorded HOPE sessions are available at any time—take advantage of the summer months to catch up
- CEUs awarded for recorded courses and a certificate of participation is available from Cochlear Americas

New HOPE Website!

- Launched June 1, 2010 at: www.cochlearamericas.com/HOPE
- Provides new content never before available on the Web
- Clear organization to a range of HOPE resources
- Content for all audiences—parents, adults and professionals

New HOPE Website

www.cochlearamericas.com/HOPE

Contact Cochlear Americas

- For questions about this seminar, contact msweeney@utdallas.edu, holly.whalen@utdallas.edu
- For inquiries and comments regarding HOPE programming, please contact: dsorkin@cochlear.com
- For a Certificate of Participation, please send your completed Feedback Form to: hopefeedback@cochlear.com

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Questions?