“Absent” Cochlear Nerve: Does the IAC Size Matter?

Jeffrey Carron, MD, FACS, FAAP
University of Mississippi School of Medicine
JB

- Born 2/2006
- Failed NBHS, confirmed NR on ABR
- HA use started 9/2007
- CT: narrow IAC, R>L; MRI IAC not available at that time
- Underwent bilateral CI (AB) 1/2009
  - Normal anatomy, complete insertion
  - Intraoperative testing: no responses elicited on right
• Postoperatively, no visible responses to sound
• Some facial stimulation that improved with selective deactivation
• Non-user after 2.5 years
• Other developmental delays
CM

- Born October 2009
- Failed NBHS, confirmed NR on ABR
- Absent DPOAEs
- HA fitted at 3 months: NR initially, but felt to respond some at school. Responses variable visit to visit and child is always resistant to testing.
- MRI: CN not seen, IAC normal size on CT
CM

- Enrolled at oral school at age 2
- HA use for most of the next 2 years, some words but could not form phrases
- 3/2013: inquired about pediatric ABI study
- 8/2013: on advice from Dr. Wilkinson, right implant done (Med-El Concert)
- Immediate improvement noted by parents and teachers
CM

- 7/2014: left CI placed with further improvement noted at school and at home.
- 7/2015: Ling thresholds at 40 dB right, 20 dB left
- Difficult to test behaviorally, follow ups quite variable
- Continues to progress with milestones at Magnolia Speech School
Questions

• Does the size of the IAC predict postoperative performance with absent or hypoplastic nerve?

• Did the MRI delay intervention for the second patient