



THE IMPORTANCE OF PARTNERSHIP BETWEEN ENT AND AUDIOLOGY FOR PEDIATRIC POPULATIONS

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DISCLOSURES

- Financial - Philip Rosen is a paid employee of Children's of Alabama and will be mentioning his place of employment in his presentation.
- Non-financial Philip Rosen has no relevant non-financial relationships to disclose
- Financial - Hannah Widner is a paid employee of Children's of Alabama and will be mentioning her place of employment in her presentation.
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LEARNING OUTCOMES

1. Describe how audiology screens, assesses and refers patients in need of ENT intervention.
2. List how ENT depends on audiology for assistance in medical and surgical decision making.
3. Outline possible interventions ENT at COA can offer patients who are assessed by audiology.

HEARING LOSS STATISTICS

Nearly half a billion people suffer from hearing loss worldwide with 34 million of these being children

- WHO estimates costs of ~\$980 billion annually

40+ million people in US have hearing loss

- Estimates that costs **\$100+ billion** annually

2-3 in 1000 US newborns

- 90% to hearing parents

NEWBORN HEARING LOSS - CDC 2020 DATA

- 3,587,350 occurrent* births in US
- 98.2% underwent newborn hearing screening
 - 1.9% of screened newborns “referred”
- 6,321 (9.0%) failed screenings were diagnosed with permanent hearing loss
 - 1.8 in 1000 screened
- However, 39.9% of “refer” results went undiagnosed

NEWBORN HEARING LOSS - CDC 2020 DATA

More and more babies who are born deaf or hard of hearing are being **identified early** in the United States

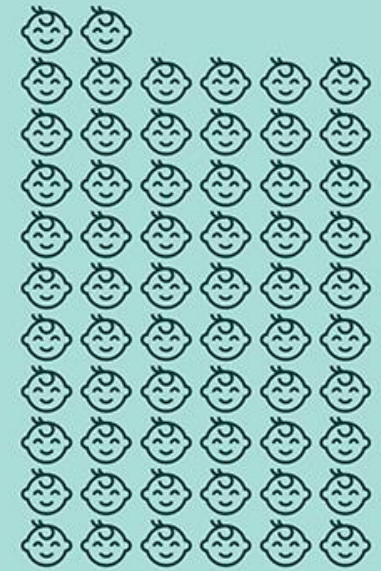


2005




2,634
babies


2020

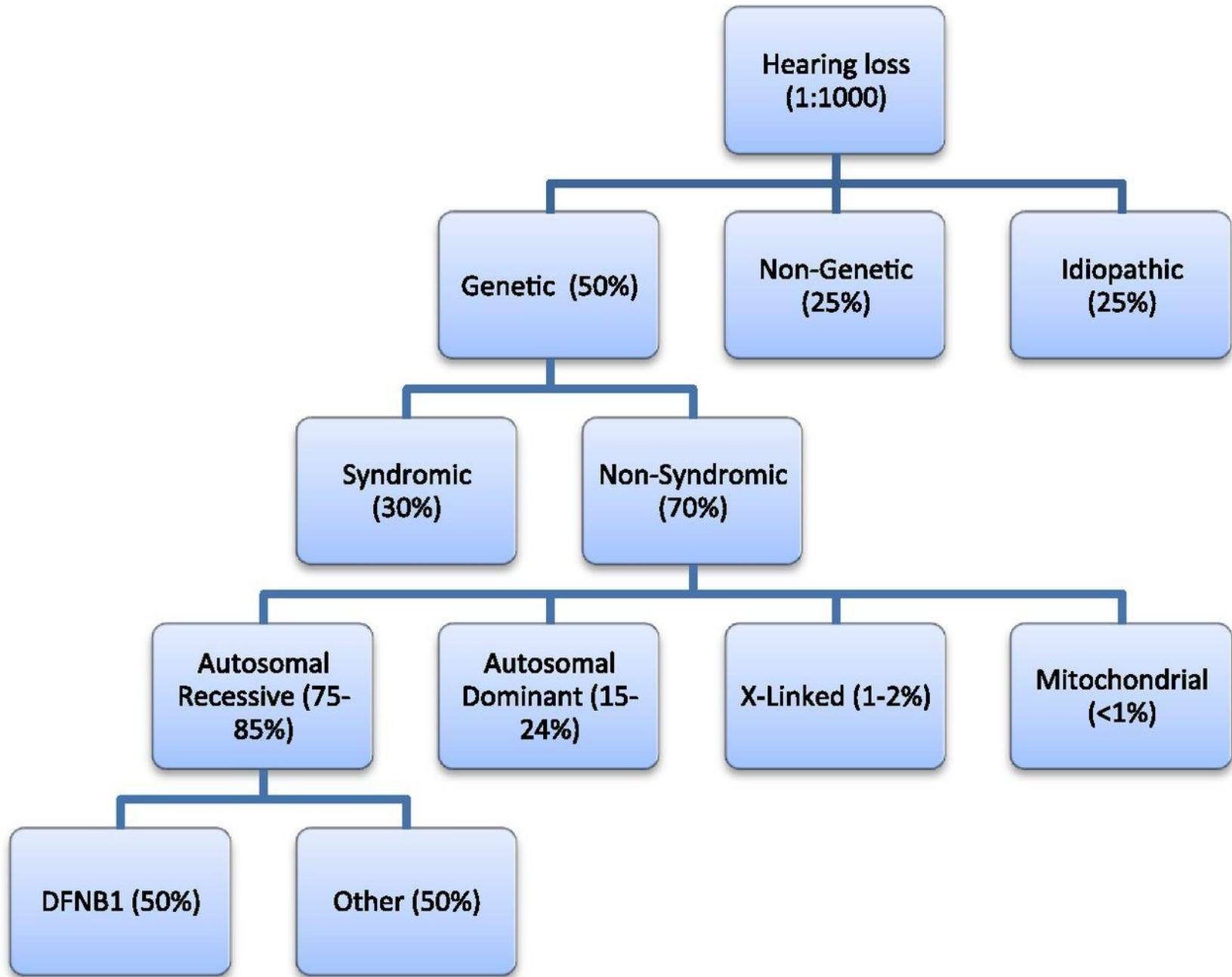


6,291
babies



Prevalence of pediatric hearing loss increases with age when you consider otitis media, delayed onset or progressive hearing losses, etc.

- 
- 5 out of 6 children experience ear infections (otitis media) by the time they are 3 years old
 - Worldwide, more than 3 in 1,000 people are estimated to have permanent hearing loss in at least one ear due to otitis media
 - Noise-Induced Hearing Loss
 - An estimated 12.5% of children/adolescents aged 6–19 years have permanent damage to their hearing from excessive exposure to noise





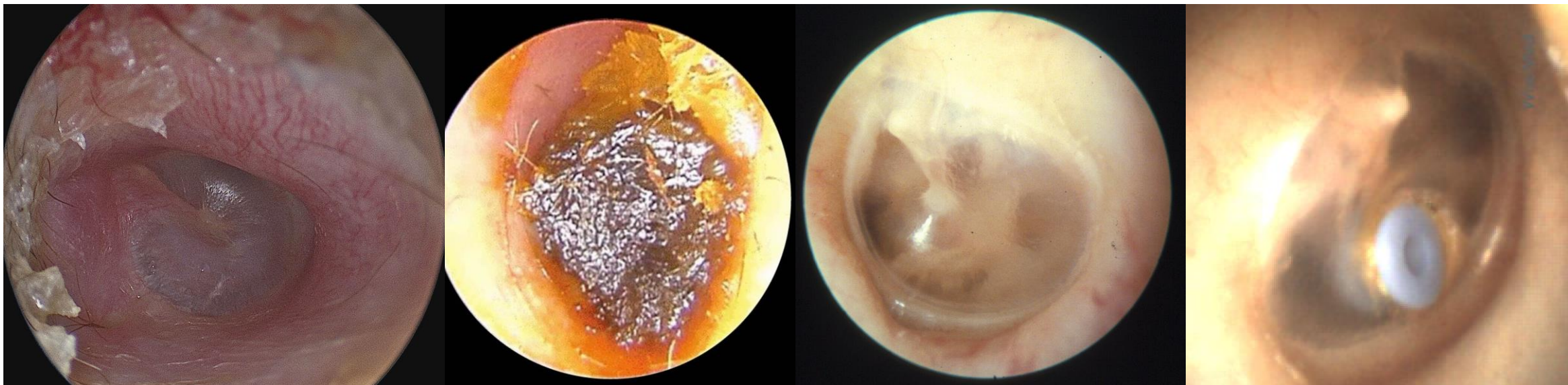
WHY IS COLLABORATION SO IMPORTANT?

SIMILAR GOALS – WE WANT WHAT IS BEST FOR THE PATIENT!



WHY IS COLLABORATION SO IMPORTANT?

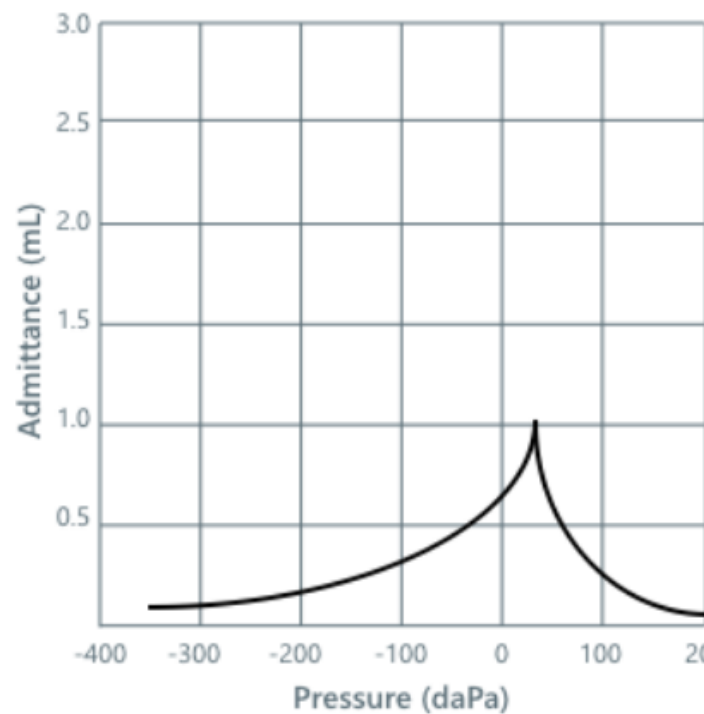
- From an ENT perspective, audiologic assessment helps confirm the physical exam...
 - Cerumen impaction
 - “Active” child
 - Tube patency



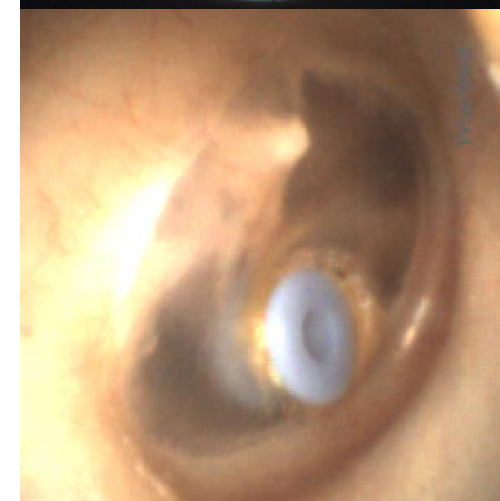
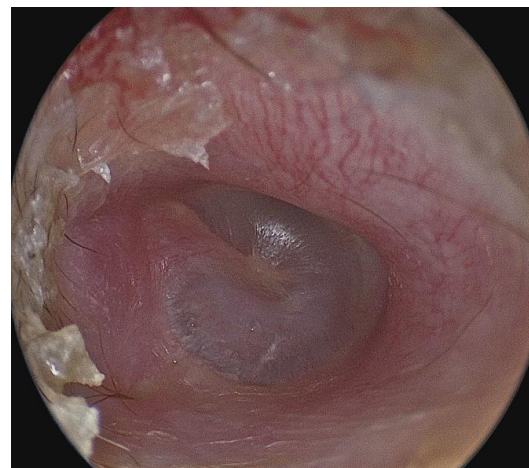
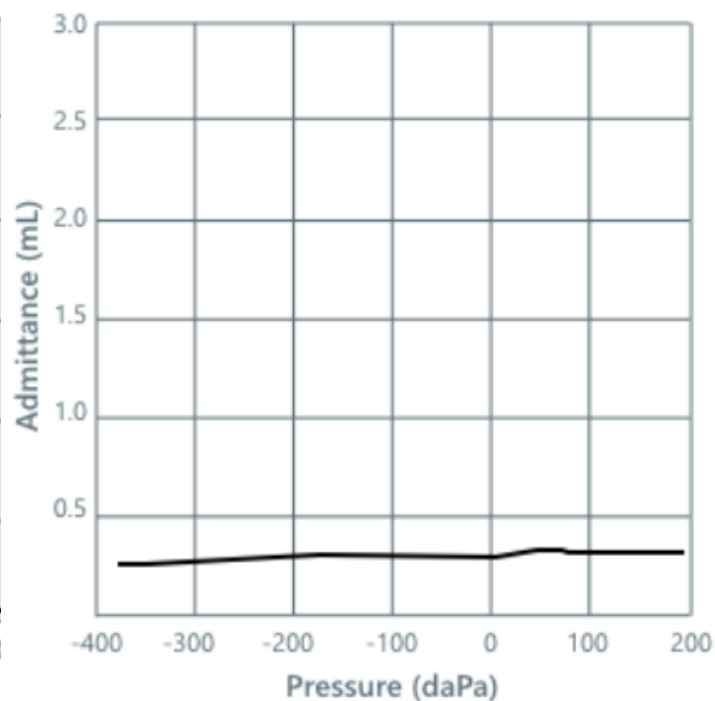
WHY IS COLLABORATION SO IMPORTANT?

- From an ENT perspective, audiologic assessment helps confirm the physical exam ...

Type A




Type B



WHY IS COLLABORATION SO IMPORTANT?

- From an ENT perspective, audiologic assessment helps...
 - Establish surgical indications
 - Confirm surgical success or failure
- From an audiology perspective, ENT evaluation...
 - Allows otologic management when needed
 - Can determine etiology of hearing loss for newly identified patients
 - Allows for surgical amplification routes



Collaboration allows for
repeated counseling of results
and implications

- **Bacterial Meningitis**

- Most common pathogens
 - Streptococcus pneumoniae
 - Group B streptococcus
 - Neisseria meningitides
 - Haemophilus influenzae
 - Escherichia coli
- Risk Factors
 - Age
 - Group setting
 - Medical history
- Treatment
 - Antibiotic therapy

- Hearing Loss

- Occurs in up to 35% of survivors
- Characteristics
- Predictors of Hearing Loss
- Treatment

- Vestibular Impairment



WHEN TIMELY COLLABORATION MATTERS



- **Ear Molding**

- **Mild to moderately malformed auricles can be “molded” in early life**
 - **Best if started within 3 weeks of birth**
- **Audiology will likely be the first to notice!**
- **Timely application is essential for success**
- **Hearing loss prevalence is unknown in this population**

WHEN TIMELY COLLABORATION MATTERS



WHEN TIMELY COLLABORATION MATTERS

■ Failed Newborn Hearing Screening

■ EHDI I-3-6 Goals

1. All infants should undergo hearing screening prior to discharge from the birth hospital and no later than 1 month of age, using physiologic measures with objective determination of outcome.
2. All infants whose initial birth-screen and any subsequent rescreening warrant additional testing should have appropriate audiologic evaluation to confirm the infant's hearing status no later than 3 months of age.
3. A concurrent or immediate comprehensive otologic evaluation should occur for infants who are confirmed to be deaf or hard of hearing
4. All infants who are deaf or hard of hearing in one or both ears should be referred immediately to early intervention in order to receive targeted and appropriate services.
5. A simplified, coordinated point of entry into an intervention system appropriate for identified children is optimal.
6. Early intervention services should be offered through an approach that reflects the family's preferences and goals for their child, and should begin as soon as possible after diagnosis but no later than 6 months of age and require a signed Part C of IDEA (Individuals with Disabilities Education Act, 2004) Individualized Family Service Plan
7. The child and family should have immediate access, through their audiologist, to high-quality, well-fitted, and optimized hearing aid technology. Access should also be assured, depending on the child's needs, to cochlear implants (CI), hearing assistive technologies, and visual alerting and informational devices.

WHEN TIMELY COLLABORATION MATTERS

WHEN TIMELY COLLABORATION MATTERS

- Benefits of meeting I-3-6 goals
 - Critical language period
 - Better early language achievement (Tomblin, et al., 2015)
 - Better vocabulary outcomes (Yoshinago-Itano, et al., 2017)
- Barriers to meeting I-3-6 goals
 - Provider-related
 - Patient-related
 - Family-related
- How collaboration helps





WHAT ARE SOME BENEFITS OF HAVING ENT AND
AUDIOLOGY IN THE SAME BUILDING?





AUDIOLOGY WORKING ENT CLINICS

THE EASIEST WAY TO COLLABORATE!



COMMON CLINIC FLOW AT COA FOR EARS

- Triaged, then sent to audiology
- In Audiology Clinic
 - Case history
 - Otoscopy
 - Tympanometry
 - Behavioral assessment, when appropriate
 - New patients with no prior audiologic assessment
 - New patients coming with outside records but differing tympanometry results, incomplete results, etc.
 - Post-otologic management with previous hearing loss
 - New hearing concerns reported by patient or family
 - Prior audiologic assessment over a year ago
 - Etc.
- Counseling of results



CLINIC FLOW CONTINUED

- Assessed by ENT/NP for medical evaluation and plan
- Team collaboration may then occur
 - Difficult behavioral assessment – is a sedated ABR needed?
 - Newly identified SNHL
 - Ongoing hearing loss following otologic management
 - Speech-language delays
 - Other developmental areas of concern

DIAGNOSTIC AUDIOLOGY & ENT IN SAME BUILDING

- Newly identified sensorineural hearing loss
- Baby with bilateral microtia/atresia
- Long standing conductive hearing loss issue and loss to follow up
- “Doorknob” otologic complaints

REHAB AUDIOLOGY & ENT IN THE SAME BUILDING

- Same day consult to discuss amplification when need is identified
- Cerumen management for earmold impressions
- Partnership for CI and BAHA patients

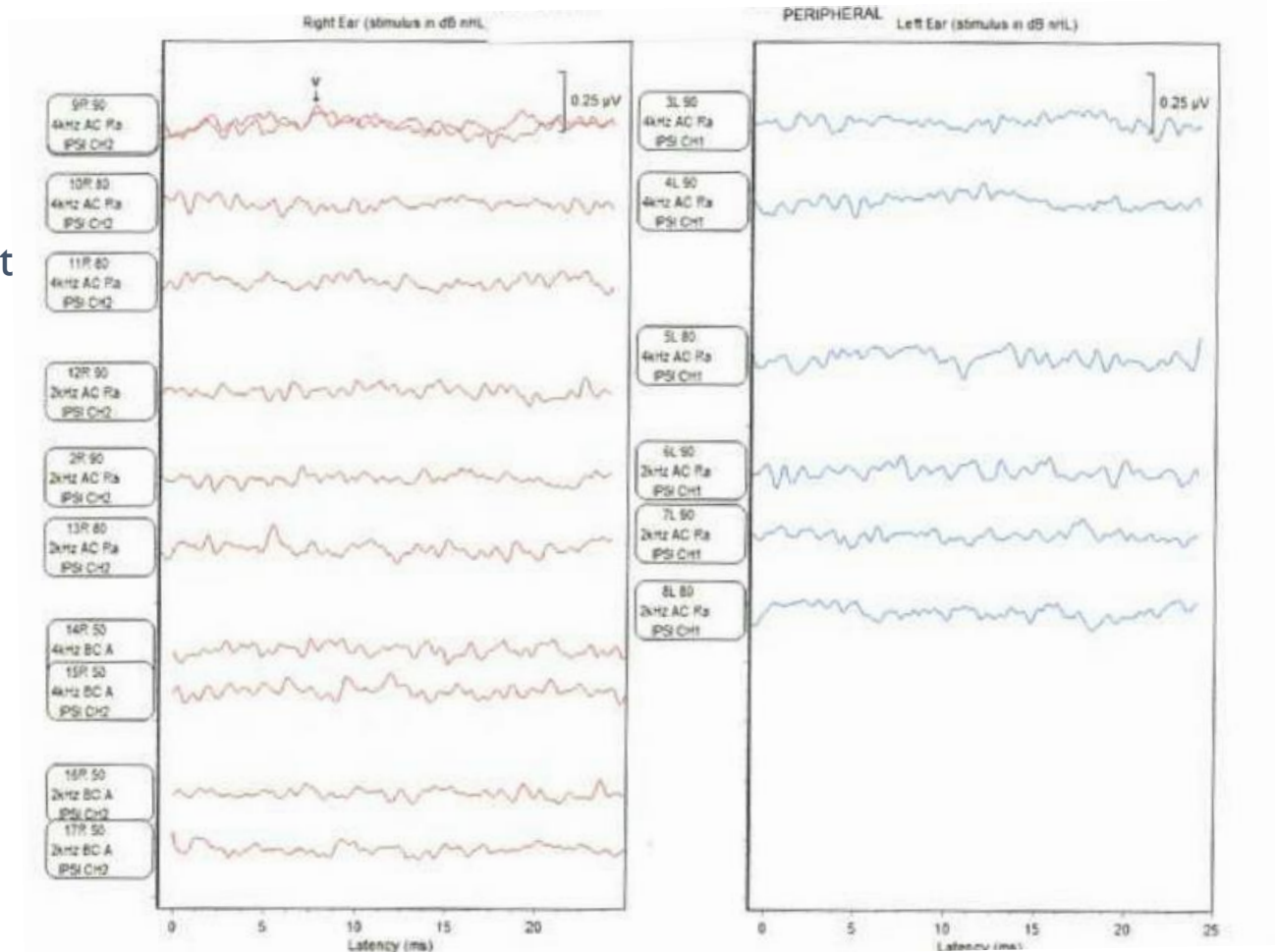


CASE STUDIES



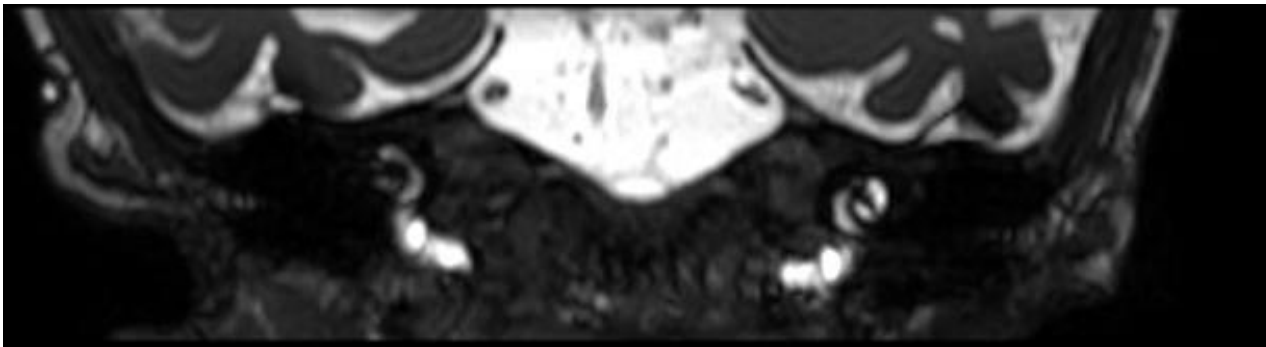
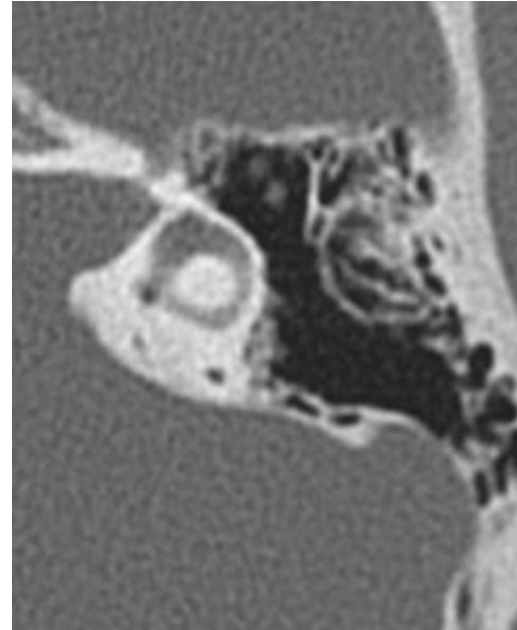
BACTERIAL MENINGITIS

- Bacterial Meningitis
 - MJ 6mo admitted for *S. pneumo* meningitis 5/22/23
 - After appropriate medical and surgical treatment audiology consulted and found absent OAEs on 6/27/23
 - Passed NBHS
 - Seen by ENT 7/6/23 and scheduled for OR AEP
 - OR tube placement and AEP on 7/17/23 shows effusion and bilateral severe to profound SNHL



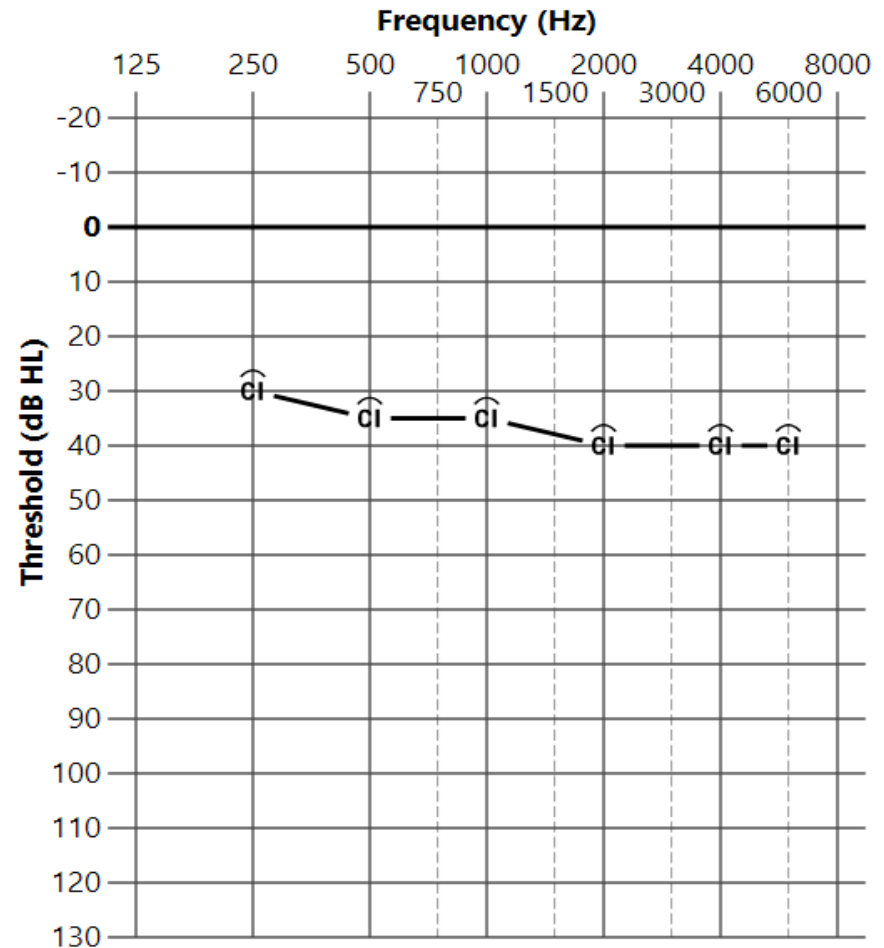
BACTERIAL MENINGITIS

- Bacterial Meningitis
 - CT IAC on 7/31/23 shows partial ossification of bilateral SCC
 - Confirmatory MRI on 8/16/23 prior to surgery
 - Left CI placement with full insertion on 8/21/23
 - Right CI placement with partial insertion on 9/11/23



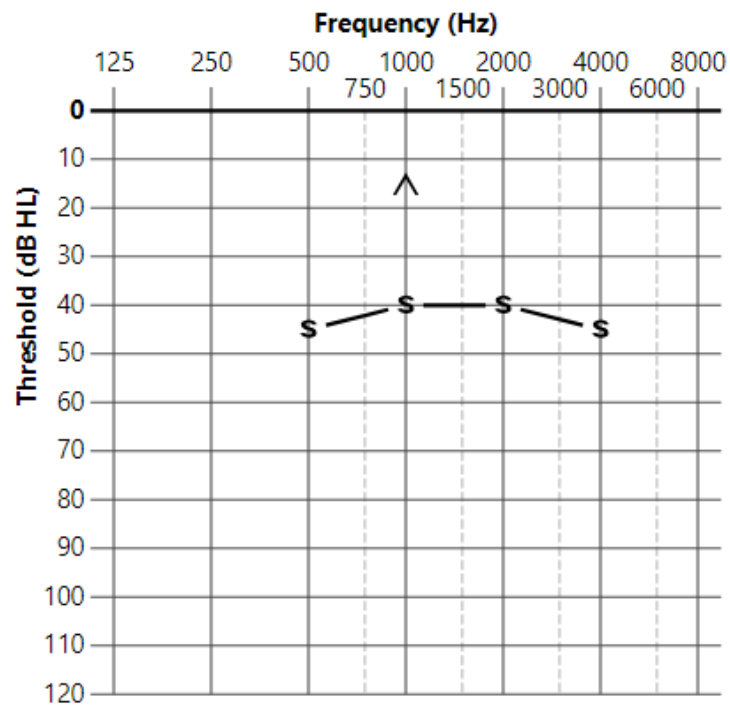
BACTERIAL MENINGITIS

- Bacterial Meningitis
 - Activated 9/25/23
 - Some impedance issues with right side due to partial insertion
 - Issues with compliance initially
 - Most recent testing on 12/5/23
 - Seen for follow up in ENT on 1/4/24

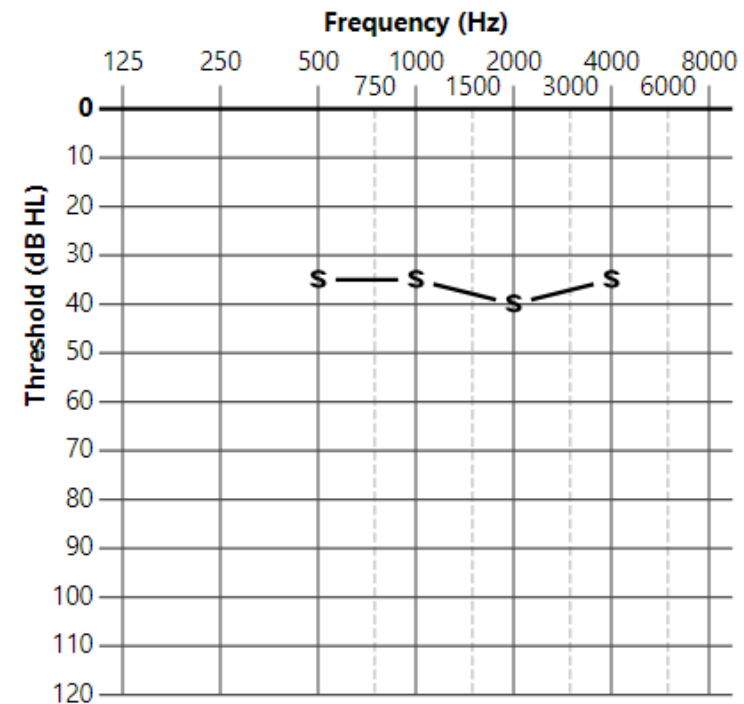


RECURRENT OTITIS MEDIA

DH – 12 months when first seen

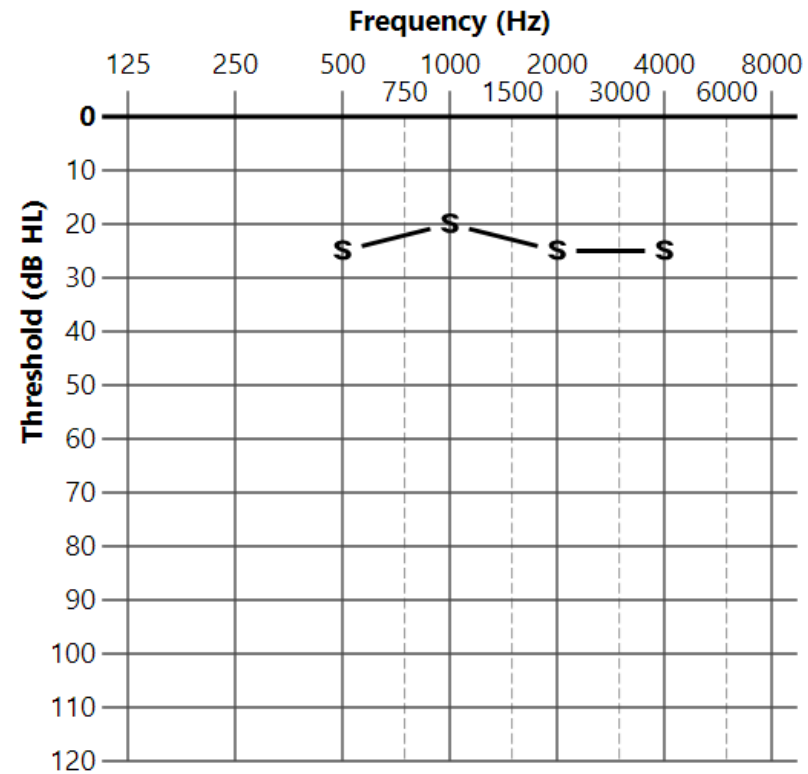


6/2023



9/2023

RECURRENT OTITIS MEDIA



Post-op: 11/2023

WAYS TO PROMOTE PARTNERSHIP & COLLABORATION



SENDING OF
RECORDS WITH
REFERRALS



USE OF MESSAGING IN
EMR



REGULARLY
SCHEDULED
MEETINGS



ADVOCACY

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