Surgical Hearing Restoration

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Loneliness does not come from having no one about you, but from being unable to communicate the things that seem important to you, Carl Jung
Surgical Hearing Restoration

• Introduction: Silence, the oral communicating world, and thank you.
• I: Hearing loss: mechanical failure of sensory transduction?
• II: Types of Surgical Hearing Restoration
• III: Impact of Deafness: Self Portraits, Deaf Culture
• IV: Impact of hearing loss on 4 main domains of life, and approach to your patient with hearing loss

Financial Disclosures/Unapproved Use

• I have no financial relationships with a commercial entity that is relevant to the content of this presentation.
• I will not reference unlabeled or unapproved uses of drugs or other products.
Objectives

By the conclusion of this talk, you will be able to:

Describe basic types of hearing loss

Describe basic types of surgical hearing restoration

I. Types of Hearing loss

• Sensory transduction of sound follows a logical path of motion of air to bone to liquid, creating electricity in the cochlea.

• Objective* testing in a sound booth with a combination of air conducted tones, bone conducted sounds, and “blinded” speech discrimination testing.

Conductive Hearing Loss: Mechanical failure, nerve function intact, sound energy is wasted.

Sensorineural Hearing Loss: Nerve function lost, audition impaired regardless of stimulation.

Mixed Hearing Loss: Combination of both.

DEMO Time!: Let’s all give ourselves a conductive loss.
II. Types of Surgical Hearing Restoration

- Stapes surgery
- BAHA, Bone Anchored Hearing Aid
- Cochlear Implantation
- Otosclerosis
- Single Sided Deafness
- Bilateral Sensorineural Hearing loss
II. Types of Surgical Hearing Restoration

Courtesy of Robert Jackler, Atlas of Skull Base Surgery and Neurotology
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- The Bone Anchored Hearing Aid (BAHA)

II. Types of Surgical Hearing Restoration

What is the deficit with Single Sided Deafness?

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<tr>
<th>Subscale</th>
<th>Example Questions</th>
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<tbody>
<tr>
<td>Speech in quiet</td>
<td>You are talking with one other person in a quiet, carpeted lounge room. Can you follow what the other person says?</td>
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<tr>
<td>Speech in noise</td>
<td>You are talking with one other person. There is continuous background noise, such as a fan or running water. Can you follow what the person says?</td>
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<td>Speech-in-speech contexts</td>
<td>You are in a group of about five people in a busy restaurant. You cannot see everyone else in the group. Can you follow the conversation?</td>
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<td>Multiple speech streams and switching</td>
<td>You are listening to someone talking to you, while at the same time trying to follow the news on TV. Can you follow what both people are saying?</td>
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<td>Spatial Hearing</td>
<td>You are outside. A dog barks loudly. Can you tell immediately where it is, without having to look?</td>
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<td>Spatial location</td>
<td>In the street, can you tell how far away someone is, from the sound of their voice or footsteps?</td>
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<td>Qualities of Hearing</td>
<td>Do everyday sounds that you hear seem to have an artificial or unnatural quality?</td>
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<td>Sound quality and naturalness</td>
<td>Do you find it easy to recognize different objects you know by the sound of each one’s name?</td>
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<td>Identification of sounds and objects</td>
<td>You are in a room and there is music on the radio. Someone else in the room is talking. Can you hear the voice as something separate from the music?</td>
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<td>Segregation of sounds</td>
<td>Do you have to put in a lot of effort to hear what is being said in conversation with others?</td>
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II. Types of Surgical Hearing Restoration

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III. Impact of Deafness, Self Portraits and The Deaf Culture

• For me there can be no relaxation in human society; no refined conversations, no mutual confidences. I must live quite alone and may creep into society only as often as sheer necessity demands....Such experiences almost made me despair and I was on the point of putting an end to my life, [1802].

• 1804-1808, Ludwig van Beethoven composes Symphony No. 5.
III. Impact of Deafness, Self Portraits and The Deaf Culture

Sir Joshua Reynolds, circa 1775, Self Portrait of a Deaf Man.

Goya, deaf circa 1792, moved into his “house of the deaf man,” and created the “Black Paintings” Masterpieces circa 1819-1823.
III. Impact of Deafness, Self Portraits and The Deaf Culture

Nancy Rourke, a vital and important member of the Deaf Community and culture, very moving and compelling, here “The Mask of Benevolence.”

Nancy Rourke, use of forced oralism and mainstream education on Deaf children
III. Impact of Deafness, Self Portraits and The Deaf Culture

Rochester Institute of Technology, self portrait, “pre”

Nancy Rourke, “Alice Vase”, can you see “Alice”
III. Impact of Deafness, Self Portraits and The Deaf Culture

Alice Cogswell and Thomas Gallaudet, campus of Gallaudet University.

IV. 4 Main Domains Life, Approach to the Patient with Hearing loss

Conversational difficulty with hearing loss

1. Work/School
2. Hobbies
3. Place of Worship
4. Home

I asked the Leonard Family to share their story with Internal Medicine Grand Rounds.
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Thank you very much.

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