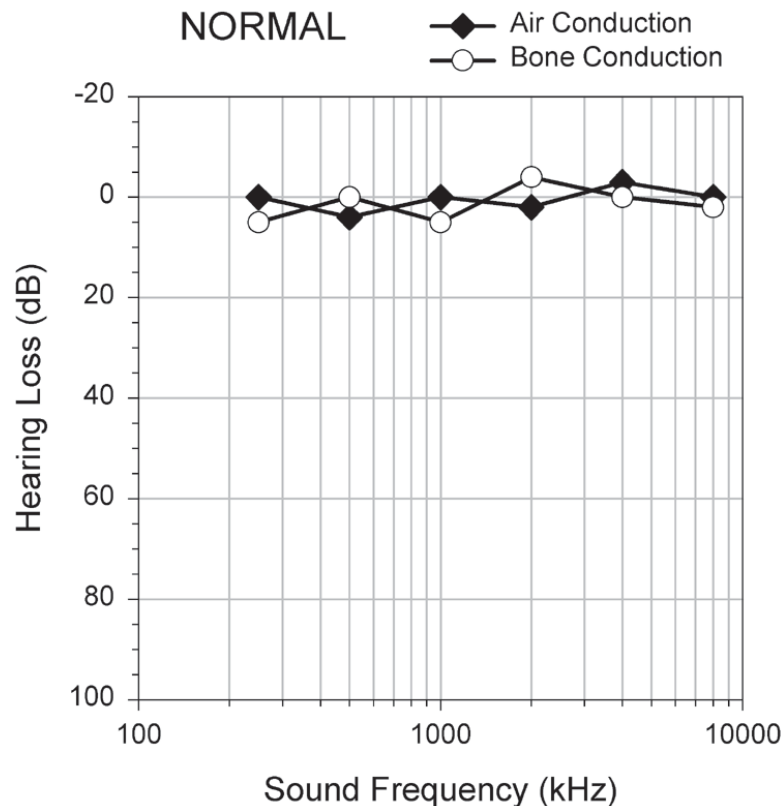


Auditory System Case Histories



CASE 1:

A 14-year old girl is brought to the emergency room by her mother who tells you that she thinks her daughter “poked something in her ear.” The girl states that while she was cleaning her ears with a Q-tip, her brother pushed her arm and the Q-tip went deep into the left ear canal. She is in pain and cannot hear well from that ear.

You examine her ears otoscopically.

Describe the otoscopic findings.

What type of hearing loss is this person experiencing?

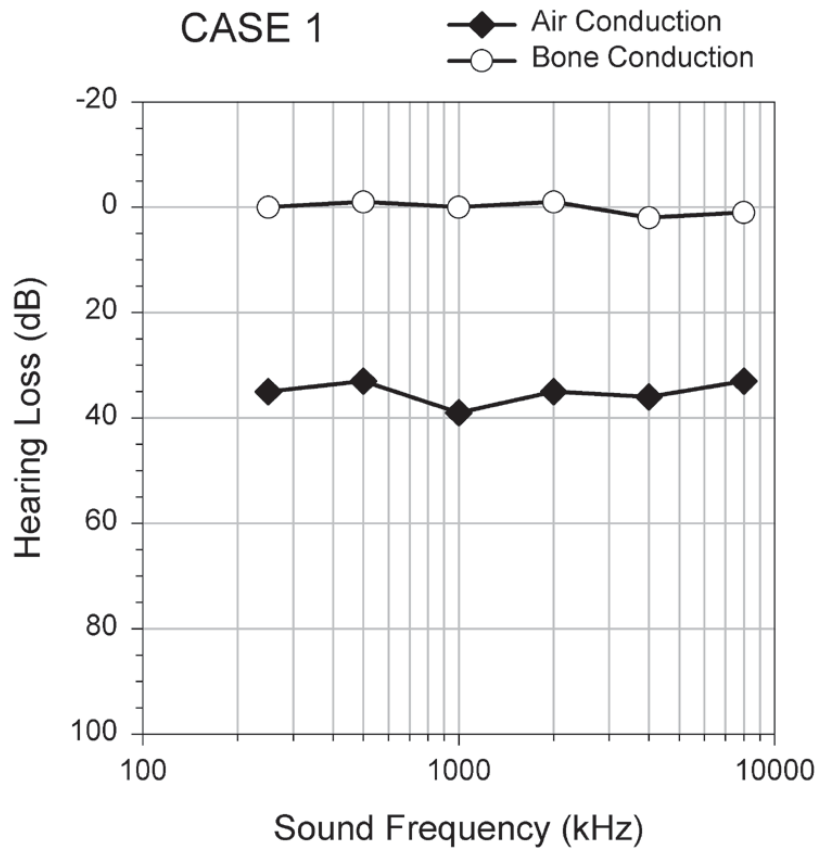
What do you base your conclusions on?

What are the pathophysiological mechanisms that underlie this hearing impairment?

After several months, the girl is still experiencing a hearing loss in that ear. You again examine the ear otoscopically and order an audiometric workup.

Describe the otoscopic findings at this stage.

Describe the audiogram.



What type of hearing loss is this person experiencing?

What do you base your conclusions on?

What are the pathophysiological mechanisms that underlie this hearing impairment?

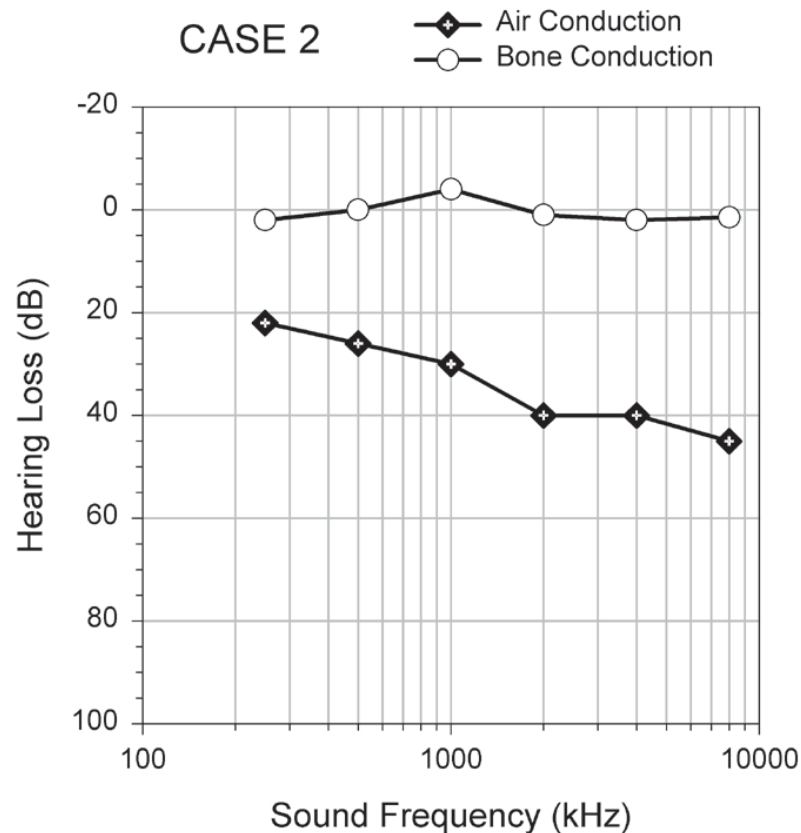
CASE 2:

A three year old child is brought to you by his mother because he has started to complain of an earache. He is also having trouble hearing. The child has had a cold for several days. You also decide to have a hearing test done (because this is a good learning experience for medical students).

You examine the child's ear otoscopically.

Describe the physical findings.

Describe the audiometric findings you would expect to see early and later during the course of this condition.



What type of hearing loss is this child experiencing?

What do you base your conclusion on?

What are the pathophysiological mechanisms that underlie this hearing loss

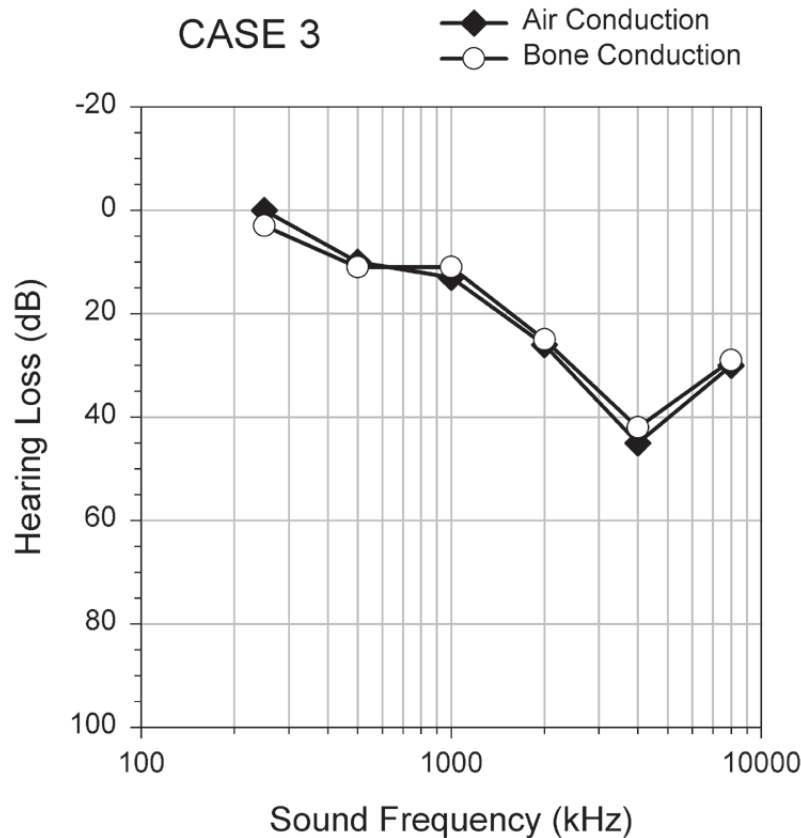
CASE 3:

A 24-year old man complains that he is becoming 'hard of hearing'. He noticed this while he was serving with the U.S. Army during the Gulf War. His duty there was with an artillery company and, for a short but intense period of time, he was firing heavy shells across the desert skies. After returning home, he has been having greater and greater difficulty understanding everyday conversation. In a quiet room he has little difficulty, especially if he can concentrate on the speaker's face. Where he has problems is when there is any kind of background noise.

You examine his ears otoscopically. You also refer him to an audiologist for further evaluation of his hearing.

Describe the otoscopic findings.

Describe the audiometric findings.



What type of hearing loss is this person now experiencing?

What do you base your conclusion on?

What are the physiological mechanisms that underlie this hearing loss?

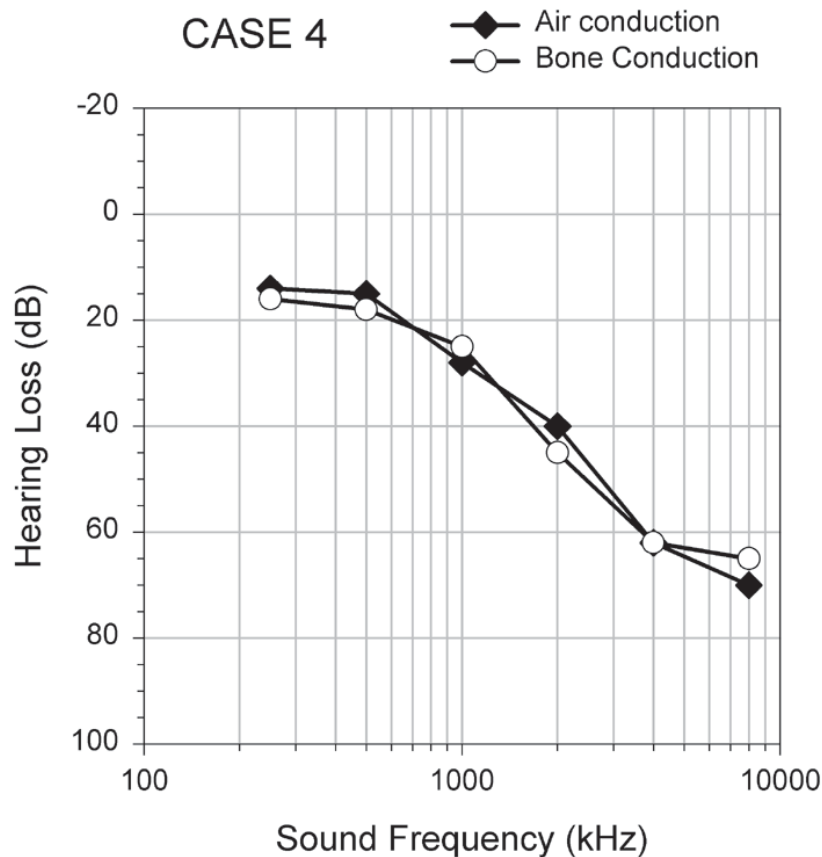
CASE 4:

During the course of a routine physical exam, a 76 year old man states that over the past 10 years it has been increasingly difficult for him to hear what others are saying. He especially notes difficulty in social situations when there are multiple competing sounds and he is trying to pay particular attention to one of them—he can tell that someone is talking, but cannot reliably tell what they are saying. He also has noted a high-pitch ringing in his ears—especially at night when it is quiet. He does not note a difference in hearing between ears. He does not have ear pain, drainage from the ear, or dizziness.

You examine his ears with an otoscope and order an audiometric examination.

Describe the otoscopic findings.

Describe the audiometric findings.



What type of hearing loss is this person now experiencing?

What do you base your conclusion on?

What are the physiological mechanisms that underlie this hearing loss?

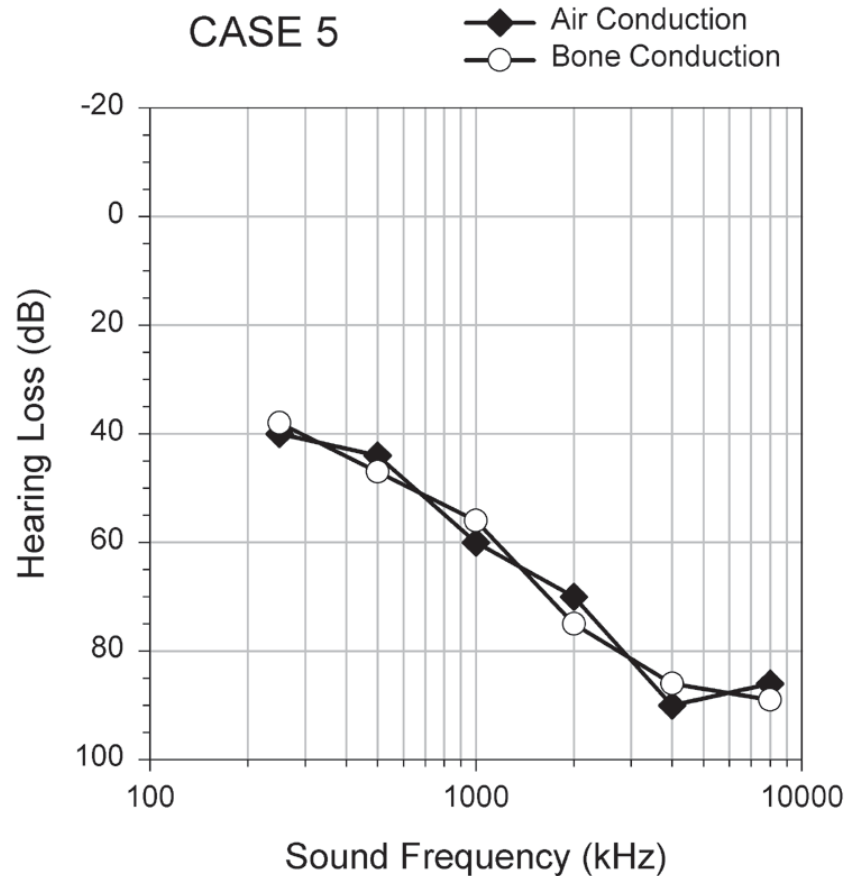
CASE 5:

A mother brings her 3-year old child to see you because she suspects the child may be 'hard of hearing'. The child has not begun to speak and has made relatively few sounds since the babbling stage. The mother notices that even loud sounds, such as a banging door, fails to startle the child. During the interview, you discover that the mother had an undiagnosed illness, accompanied by a rash, during the early states of pregnancy. Otherwise, the pregnancy was uneventful. The child has no history of illness.

You examine the ears otoscopically. You also request consultation with an audiologist trained to test the hearing of young children.

Describe the otoscopic findings.

Describe the audiometric findings.



What type of hearing loss is this person now experiencing?

What do you base your conclusion on?

What are the physiological mechanisms that underlie this hearing loss?

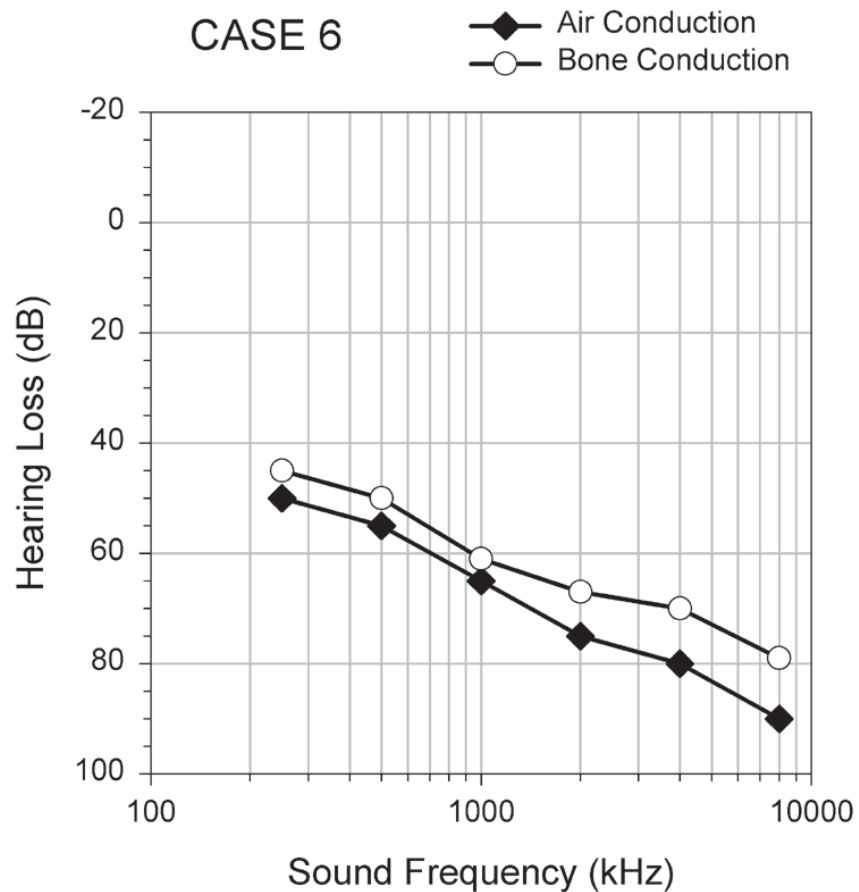
CASE 6:

During a baseball game, a 16-year old boy was accidentally struck in the back of the head with a baseball bat. After regaining consciousness, the boy exhibited facial weakness on the right side. He was dizzy and remained so for days ahead. He complained of a severe hearing loss in his right ear, which did not improve.

You examined the ear canals and tympanic membranes otoscopically. You also ordered an audiometric examination.

Describe the otoscopic findings.

Describe the audiometric findings.



What type of hearing loss is this person now experiencing?

What do you base your conclusion on?

What are the physiological mechanisms that underlie this hearing loss?

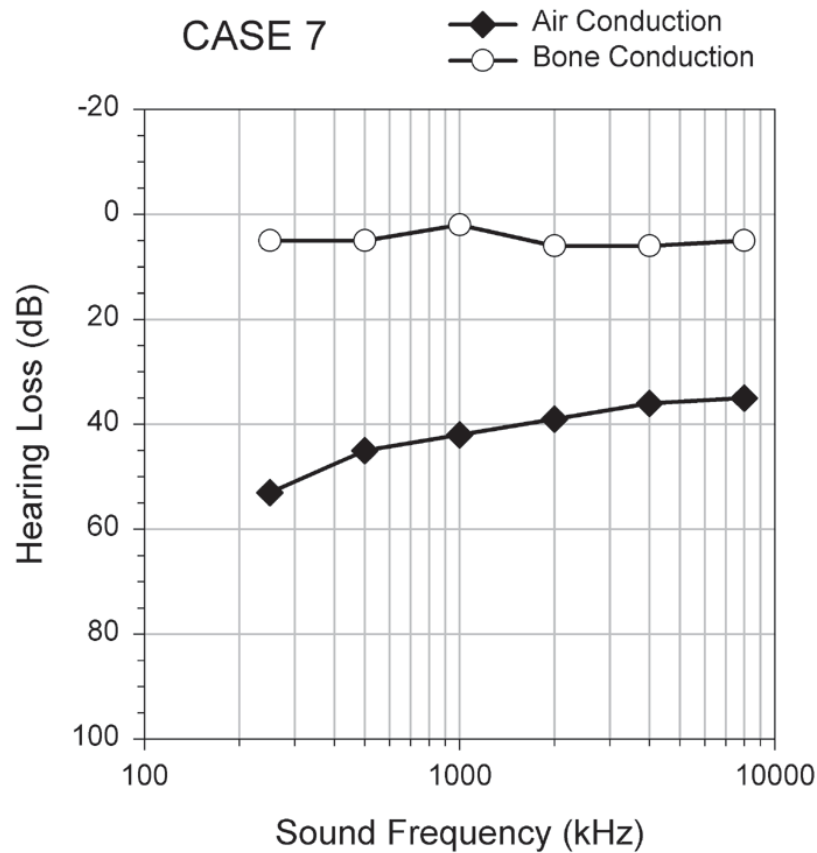
CASE 7:

A 40 year old woman comes to you because she believes she is losing her hearing. This has been gradually building up over several years and now is to the point where she is having difficulty in hearing normal conversation. Even her friends and family members comment on it.

You examine the ears otoscopically. You then refer her to an audiologist for a more complete evaluation of her hearing.

Describe the physical findings.

Describe the audiometric findings.



What type of hearing loss is this person now experiencing?

What do you base your conclusion on?

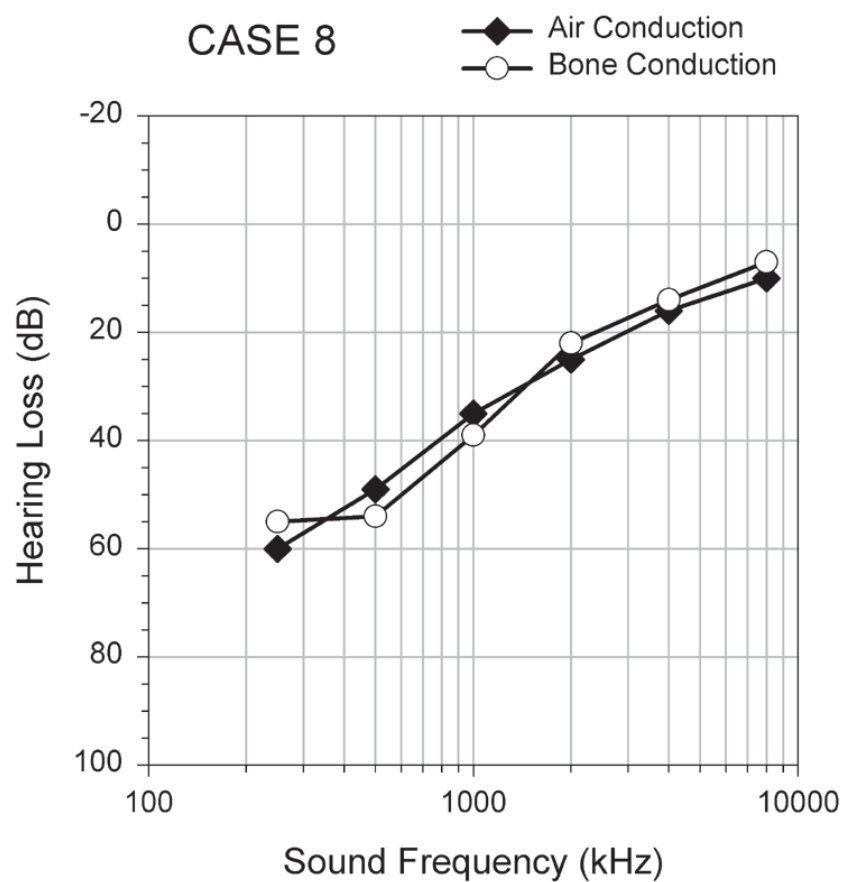
What are the physiological mechanisms that underlie this hearing loss?

CASE 8:

A 43-year old accountant suddenly began experiencing severe episodes of dizziness accompanied by nausea and vomiting. He also experienced a hearing loss in his right ear, with a feeling of fullness in that ear. This was accompanied by a loud roaring sound. Each attack lasted for days and returned 4-6 months later. The attacks were so severe that he often was confined to his bed. Neurological examination revealed spontaneous and positional nystagmus during these episodes.

Otoscopic examination of the ears was carried out. A thorough audiologic examination was also conducted.

Describe the physical findings.



What type of hearing loss is this person now experiencing?

What do you base your conclusion on?

What are the pathophysiological mechanisms that underlie this hearing loss?

What are the pathophysiological mechanisms involved in the non-hearing symptoms?