

In the NAME of God





Cochlear implantation in the patients with Meniere's disease

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Meniere's Disease

- Meniere's disease is a disorder of the inner ear that can lead to vertigo and hearing loss.
- In most cases, Meniere's disease affects only one ear.
- Meniere's disease can occur at any age, but it usually starts between young and middle-aged adulthood.
- It's considered a chronic condition, but various treatments can help relieve symptoms and minimize the long-term impact on your life.

Signs and symptoms of Meniere's disease

- **Recurring episodes of vertigo.** You have a spinning sensation that starts and stops spontaneously. Episodes of vertigo occur without warning and usually last 20 minutes to several hours, but not more than 24 hours.
- **Hearing loss.** Hearing loss in Meniere's disease may come and go, particularly early on. Eventually, most people have some permanent hearing loss.
- **Ringings in the ear (tinnitus).** Tinnitus is the perception of a ringing, buzzing, roaring, whistling or hissing sound in your ear.
- **Feeling of fullness in the ear.** People with Meniere's disease often feel pressure in an affected ear (aural fullness).

Causes

The cause of Meniere's disease is unknown. Symptoms of Meniere's disease appear to be the result of an abnormal amount of fluid (endolymph) in the inner ear, but it isn't clear what causes that to happen.

Factors that might contribute to Meniere's disease

- Abnormal immune response
- Viral infection
- Genetic predisposition
- Trauma

Complications

- The unpredictable episodes of vertigo and the prospect of permanent hearing loss can be **the most difficult problems of Meniere's disease.**
- The disease can unexpectedly interrupt the patient's life, causing fatigue and stress.
- Vertigo can cause the patient to lose balance, increasing his/her risk of falls and accidents.

Factors that negatively affect appropriate amplification (HA), in Meniere's disease

- The patient's fluctuating hearing loss
- Unilateral or asymmetrical hearing loss
- Reduced dynamic range, and reduced word-recognition scores

Cochlear implantation in Meniere's disease

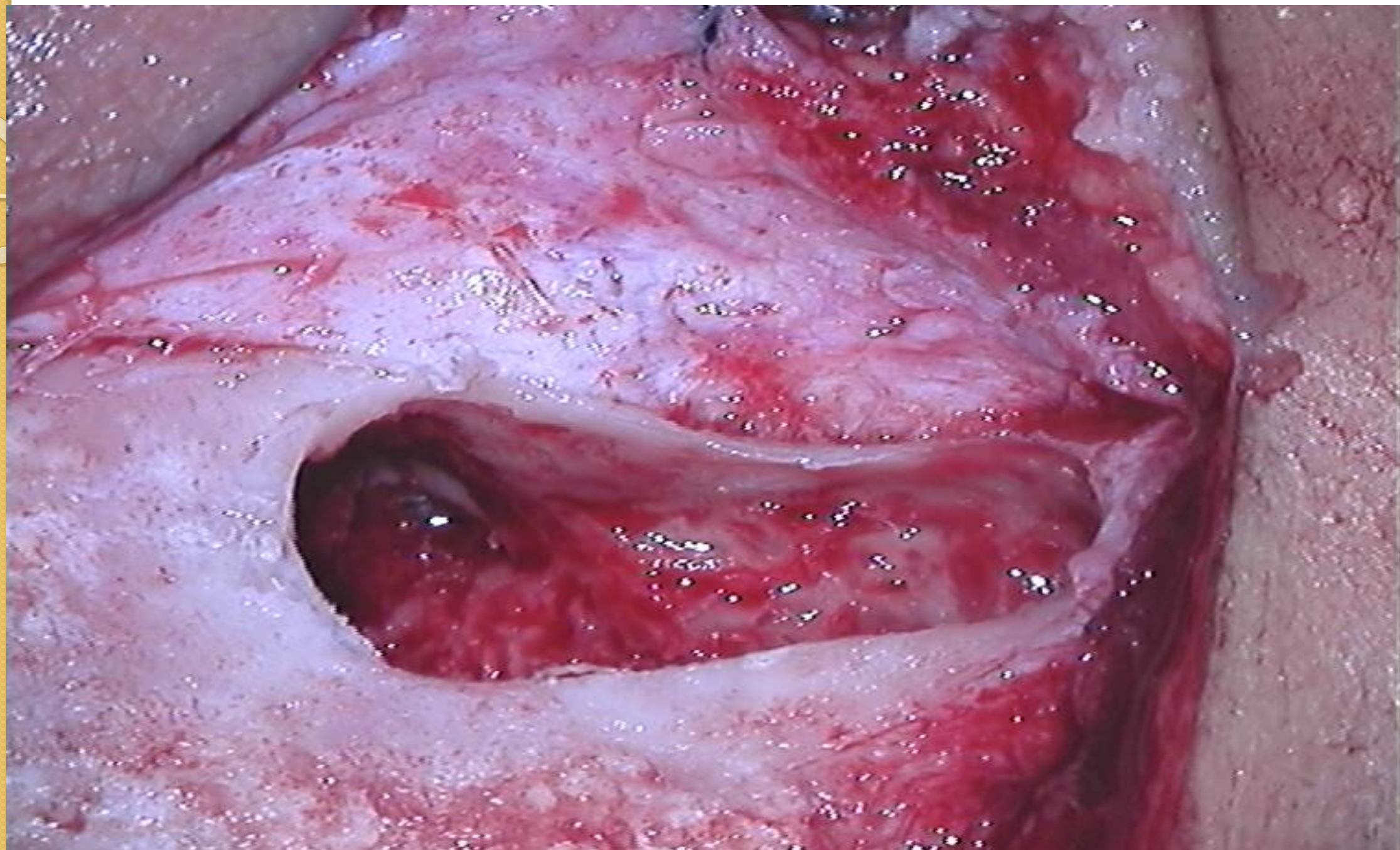
Development of bilateral severe-to-profound hearing loss secondary to bilateral Meniere's disease is relatively rare,

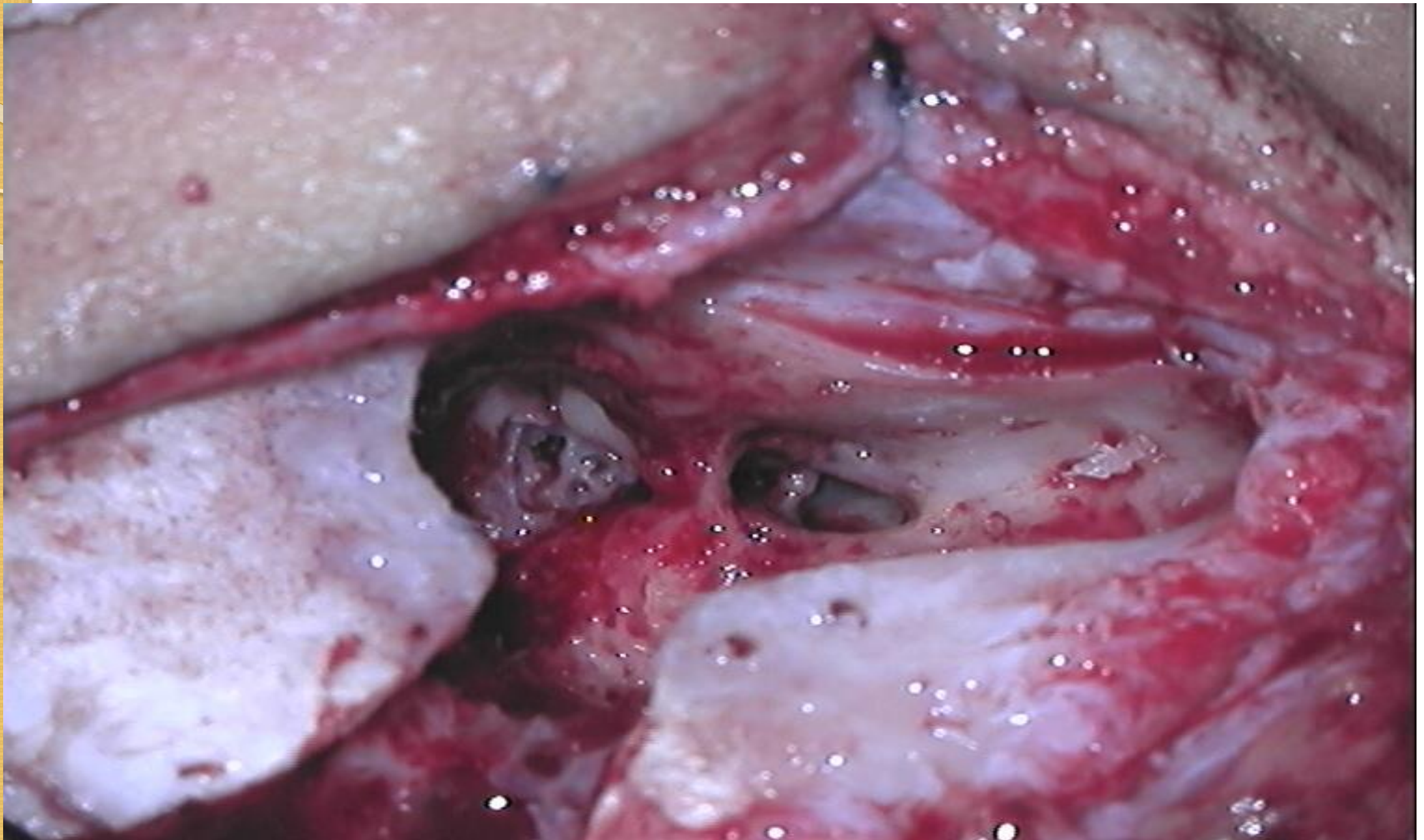
but if it occurs, cochlear implantation (CI) may be an option because of the difficulties associated with fitting the patient with a hearing aid.

Fars Cochlear Implant Center

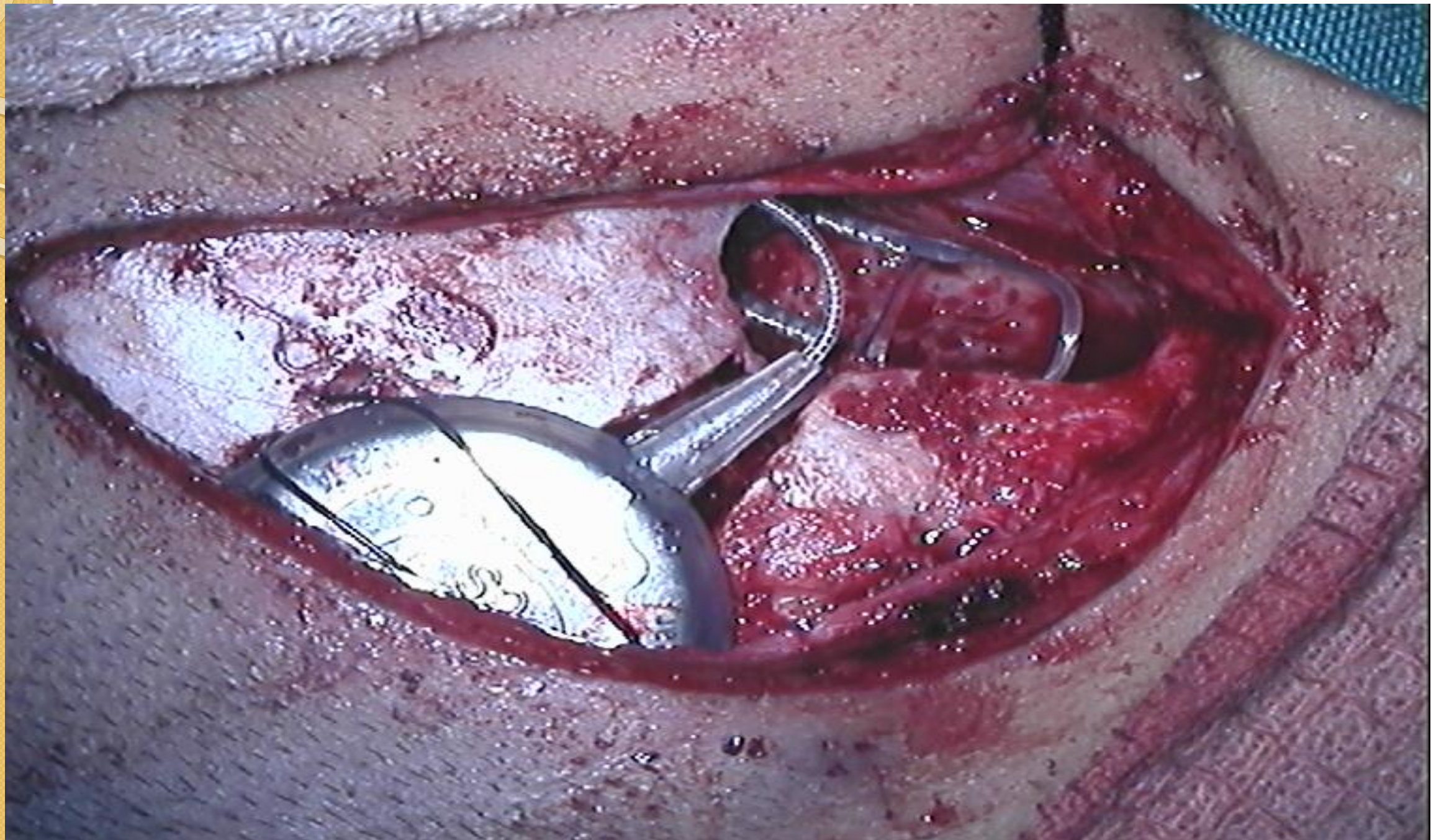












The reports of some studies that performed CI in Meniere's patients

A study in 1999 in UK, provided relief from vertigo in a case of severe debilitating vertigo due to Meniere's disease that was treated by chemical labyrinthectomy and CI.

A study in 2003 in Johns Hopkins University, examined the speech recognition abilities of a group of nine CI recipients with Meniere's disease;

All study patients were implanted unilaterally in the ear with poorer hearing, and all showed significant improvement in their open-set speech recognition scores six months after the initial activation of the CI compared to their preoperative scores.

The overall results of a systematic review of C.I in 182 patients in 2021 (1)

- The end-stage patients who had sufficient spiral ganglion cells after labyrinthectomy, benefited from C.I.
- For those with uncontrolled vertigo, this might allow for effective treatment of vestibular symptoms with secondary rehabilitation of labyrinthectomy-induced unilateral deafness.
- The overall reduction in frequency, outcomes for dizziness and vertiginous symptoms varied greatly between individual studies.

The overall results of a systematic review of C.I in 182 patients in 2021 (2)

- Vertigo resolved within three months after CI in half of the patients, and long-term or chronic vertigo was reported in the remainder.
- The incidence of bilateral vestibular hypofunction was low, and occurred almost exclusively in patients with bilateral MD.
- The improvement of quality of life was observed.
- Reduction in annual vertigo episodes following CI.
- Less than 5% of the patients experienced a serious or long-term complication related to CI

Conclusion

- Relief from vertigo and vestibular attacks
- No hearing fluctuation
- In spite of the **safety and efficacy of CI** in patients with MD, it is suggested to access a standardized approach to evaluate outcomes of CI in patients with MD in future studies

References

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Thank you for your kind attention

