Tympanolith in the Middle Ear

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Background

Tympanolith are calcified bodies within the middle ear. Origin of nidus of calcification may be extrinsic (foreign body) or intrinsic (stagnant mucus & inspissated purulent dried discharge), requiring oto-endoscopic removal & chemical assessment.

Case Report

70 year-old Male, Diabetic (since 25 years), complaints of :

❑Painless, non-foul smelling, chronically discharging Right ear since 20 years

❑Reduced hearing in Right ear since 10 years.

❑No prior history of foreign body insertion or hearing aid usage.

Figure 1: Right ear Oto-endoscopy

Investigations

Pure Tone Audiometry: Bilateral mixed hearing loss with profound hearing loss in the affected ear.

Right Oto-endoscopy: Gritty foreign material in the middle ear with posterior canal bulge containing purulent material.

- ❑ Under Local Anesthesia tympanolith, retrieved *en masse* with an angled probe from middle ear occupying mesotympanum & hypo tympanum
- ❑ Moderate size central perforation of the tympanic membrane with an edematous middle ear mucosa.

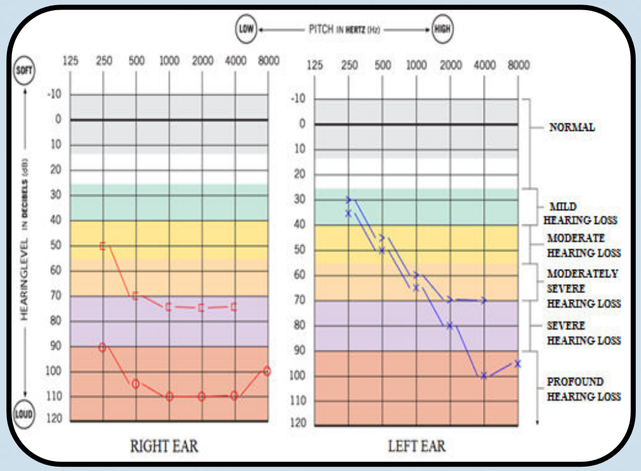


Figure 2: Pure Tone Audiometry

Discussion

Tympanolith, rare, calcified mass within tympanic cavity.

Nidus of calcification: Extrinsic or Intrinsic.

Hypothesis: Precipitation of calcium & magnesium salts in chronically inflamed middle ear cleft[1].

Other possibilities: foreign bodies, general & local metabolic disorders, calcified tuberculous lesion[2-4].

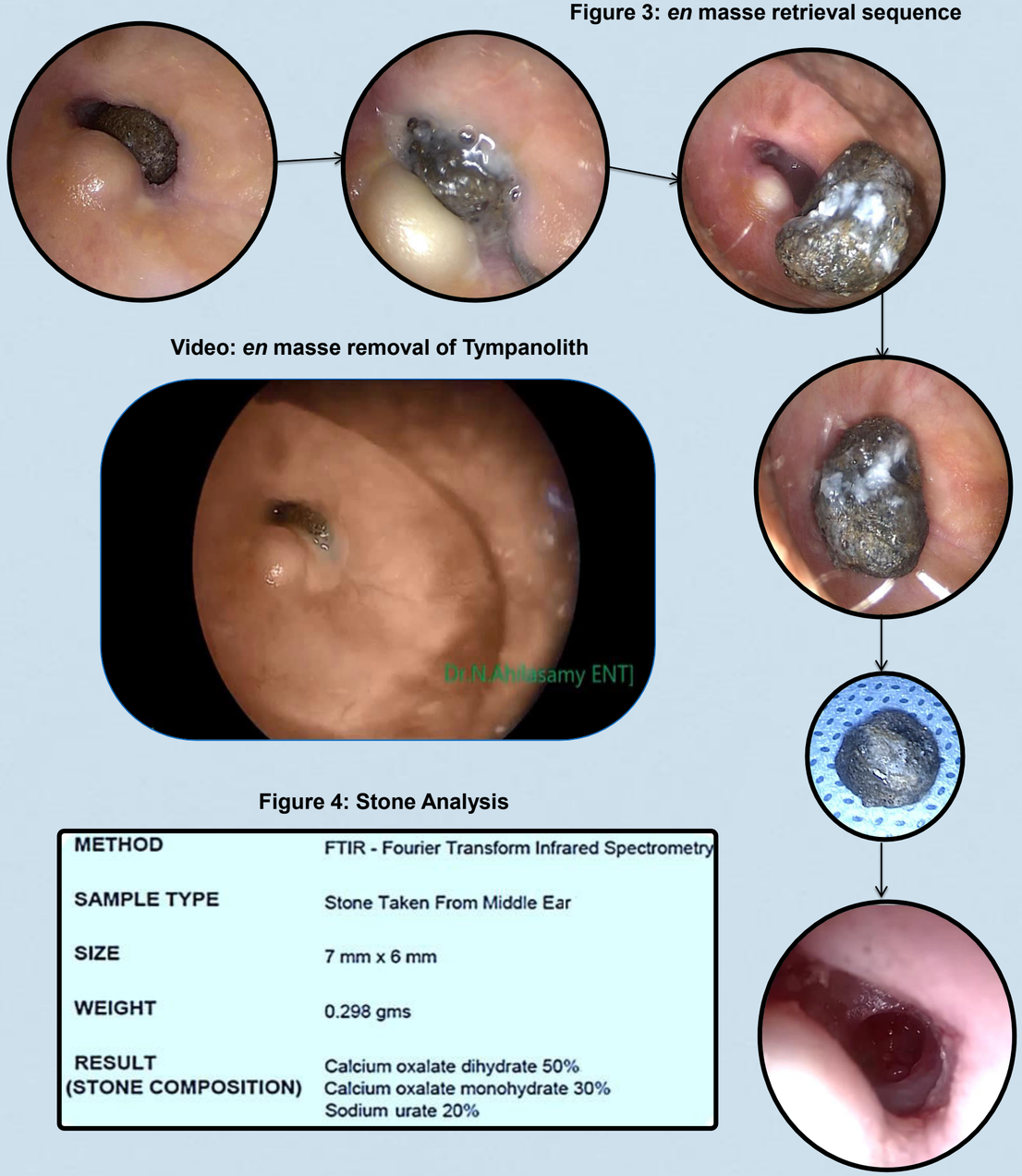
***Small Tympanolith**:* Asymptomatic.
Larger Tympanolith: Ear discharge, hard of hearing.

Conclusion

Tympanolith

- ❑ Differential diagnosis in chronically discharging ears.
- ❑ Oto-endoscopic complete removal & chemical assessment.

Figure 3: *en* masse retrieval sequence



Video: *en* masse removal of Tympanolith

Figure 4: Stone Analysis

METHOD	FTIR - Fourier Transform Infrared Spectrometry
SAMPLE TYPE	Stone Taken From Middle Ear
SIZE	7 mm x 6 mm
WEIGHT	0.298 gms
RESULT (STONE COMPOSITION)	Calcium oxalate dihydrate 50% Calcium oxalate monohydrate 30% Sodium urate 20%

References

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