Eleven-Year-Old with Otorrhea: A Case of Cholesteatoma

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Introduction

Cholesteatoma is a keratinized, desquamated epithelial collection in the middle ear or mastoid which may cause chronic or recurrent otitis media, usually in pediatric patients although it may occur in adulthood as well.

Early recognition is crucial as involvement of middle ear structures may cause irreversible hearing loss and surgery is often necessary.

Case Presentation

We present a case of an 11 yo boy who presented to establish care with new provider complaining of 1.5 years of persistent ear pain and drainage.

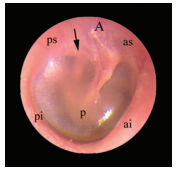
The patient had recently been evaluated in the emergency department and completed a full course of both oral and topical antibiotics without any significant improvement. His mother reported no significant past medical or surgical history.

Upon evaluation, the patient was noted to have failed his hearing screen on the right side. Otoscopic exam was notable for significant narrowing of right ear canal with large amount of clear, non-purulent, non-bloody fluid present. The tympanic membrane was completely obscured. Exam was otherwise unremarkable.

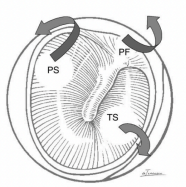
The patient was urgently referred to pediatric ENT at Yale at which point audiogram was done and showed maximal conductive hearing loss in the right ear.

High resolution CT of the temporal bone showed abnormal soft tissue throughout the majority of the right middle ear extending into a narrow external canal and mastoid air cells as well as a malformed, stenotic right external auditory canal with bony defect extending into right TMJ consistent with cholesteatoma.

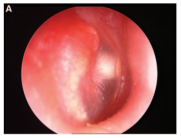
Images



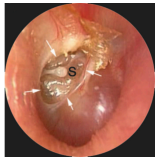
Healthy TM



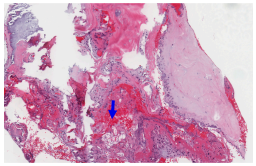
Paths of extension by acquired cholesteatoma



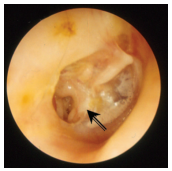
Congenital Cholesteatoma



Retraction-Pocket Cholesteatoma

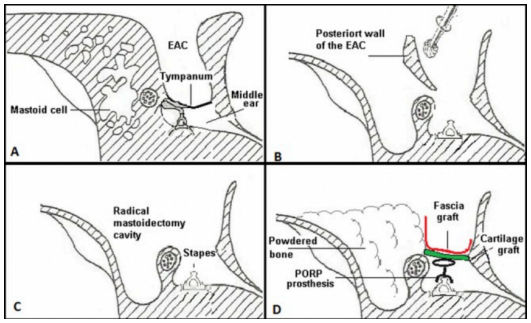


Granulation Tissue Associated with Cholesteatoma



TM Perforation

Open Mastoidectomy with Reconstruction



Discussion

- Terminology
  - Congenital - intact TM and no history of surgery
    - Most commonly due to Eustachian tube dysfunction
  - Acquired - associated with
    - Chronic middle ear disease
    - TM perforation
    - History of ear surgery
- Often asymptomatic; most common presenting symptoms include
  - Hearing loss
  - Dizziness
  - Otorrhea
- Warning signs
  - White mass behind intact eardrum
  - Deep retraction pocket
  - Focal granulation tissue on surface of TM
  - Ear drainage > 2 weeks despite adequate treatment
  - New onset hearing loss
- Suspicion warrants prompt referral to ENT as surgery is usually required to prevent permanent hearing loss
- Often recur, therefore post-operative follow up with ENT is key

Intervention

2.5 months after initial presentation, patient underwent right tympanomastoidectomy which identified a large cholesteatoma eroding into the glenoid fossa with extension into the air cells of the mastoid/zygoma. The procedure required removal of the malleus/incus.

The patient discharged without complication. He presented for his follow up visit 1 week later and was recovering well. He is planned for eventual ossicular chain reconstruction.

References

1. Isaacson, G. Diagnosis of pediatric cholesteatoma. Pediatrics. 2007 Sep;120(3):603-8. doi: 10.1542/peds.2007-0120. PMID: 17766534.
2. Blanco P, Gonzalez F, Blanco P, González F, Holguín J, Guerra C. Surgical management of middle ear cholesteatoma and reconstruction at the same time. ***Colomb Med (Cali)***. 2014;45(3):127-131. Published 2014 Sep 30.
3. Pernick N. Cholesteatoma. PathologyOutlines.com website. https://www.pathologyoutlines.com/topic/earcholesteatoma.html. Accessed October 19th, 2021.

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