Offensive Ear Discharge

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A 30-year-old man, who underwent tympanostomy tube insertion during childhood for serous otitis media, presents with a long history of intermittent, offensive-smelling, right ear discharge and a recent deterioration in his hearing. On otoscopy, cholesteatoma, which gives the impression of wax, is noticed (see Figure 1a).

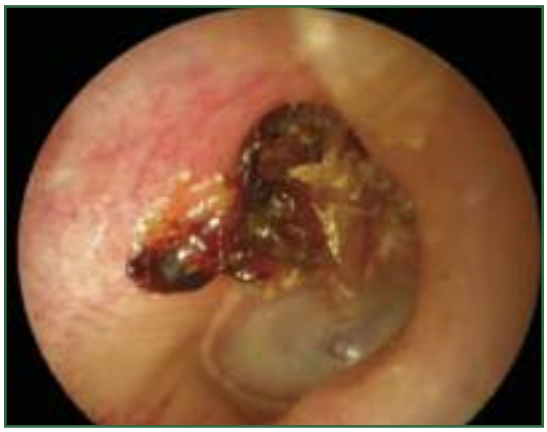

Figure 1a: The typical appearance of a right attic cholesteatoma, giving the impression of wax in this area.

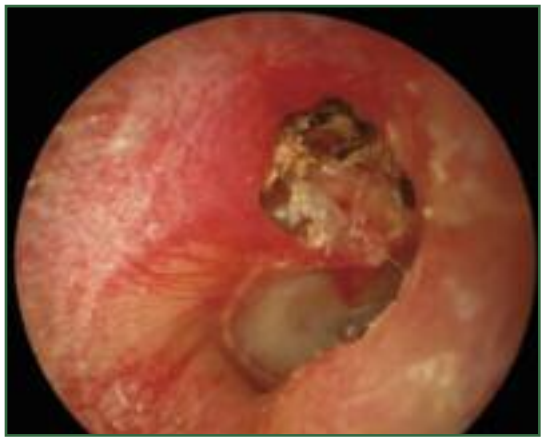

Figure 1b: The same ear after removal of the keratin, showing scutal and ossicular head erosion. Further keratin remains *in situ*.

What is your Diagnosis?

Amongst the multiple middle ear pathologies that may be encountered, the general practitioner needs to be familiar with cholesteatoma. A cholesteatoma is an abnormal collection of squamous epithelial tissue that develops within the middle ear cavity. During its development, it has the ability to resorb bone. As such, it can result in a number of intratemporal bone complications, including ossicular erosion and conductive hearing loss. The keratin accumulation can lead to recurrent ear infections, producing a very characteristic, offensive ear discharge. The ear infections, along with the bone resorption, can go on to cause acute mastoiditis and, rarely, serious intracranial complications.

Congenital cholesteatomas typically affect children with an intact tympanic membrane and no history of ear surgery, whereas acquired cholesteatomas result from middle ear disease and eustachian tube dysfunction, leading to tympanic membrane retraction (primary) or implantation of keratin into the middle ear (secondary), either iatrogenically or via an already existing perforation. The true incidence of cholesteatoma is unknown, although it has fallen since the advent of tympanostomy tubes.

A cholesteatoma should be suspected on careful otoscopic examination if a tympanic membrane

retraction is seen, although appearances, as seen in Figure 1a, may restrict the view. A white mass behind the tympanic membrane may also be visible. Congenital lesions are typically located in the antero-superior quadrant of the pars tensa (*i.e.,* anterior to the handle of the malleus). Primary acquired cholesteatomas present more frequently in the attic (the pars flaccida) or the postero-superior quadrant of the pars tensa, often in an already present retraction pocket. Fortunately, very few retraction pockets progress to cholesteatoma.

Following clinical examination, imaging of the temporal bone with a CT scan is helpful to exclude any potential complications, such as erosion of the lateral semicircular canal or other middle ear structures, although this imaging is not good at differentiating cholesteatoma from other soft tissues. Surgical excision of the entire lesion is the treatment of choice: the primary aim is to stabilize the ear, hence, avoiding the potential for future, serious intracranial complications. Secondary aims of surgery include avoidance of recurrent or residual disease and hearing enhancement, either via ossicular reconstruction or safe use of hearing aid without a potential for the ear to discharge.

Resources

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3. Lustig LR, Limb CJ, Baden R, *et al*: Chronic Otitis Media, Cholesteatoma, and Mastoiditis in Adults. UpToDate, 2013. http://www.uptodate.com/contents/chronic-otitis-media-cholesteatoma-and-mastoiditis-in-adults. Accessed: May 15, 2013.
4. Flint PW, Haughey BH, Lund VJ, *et al*: Cummings Otolaryngology — Head and Neck Surgery. Fifth Edition. Mosby Elsevier, Philadelphia, 2010, pp. 1963–1978.

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