

For the Hearing Instruments Specialist: Otoscopy Demystified: Tympanic Membrane Perforation

Occasionally the HIS may come across a patient with a perforated ear drum. The perforations are basically of three types Figure 1:

- Central perforation (safe)
- Attic perforation/ Postero-superior perforation (unsafe)
- Marginal perforation (unsafe)

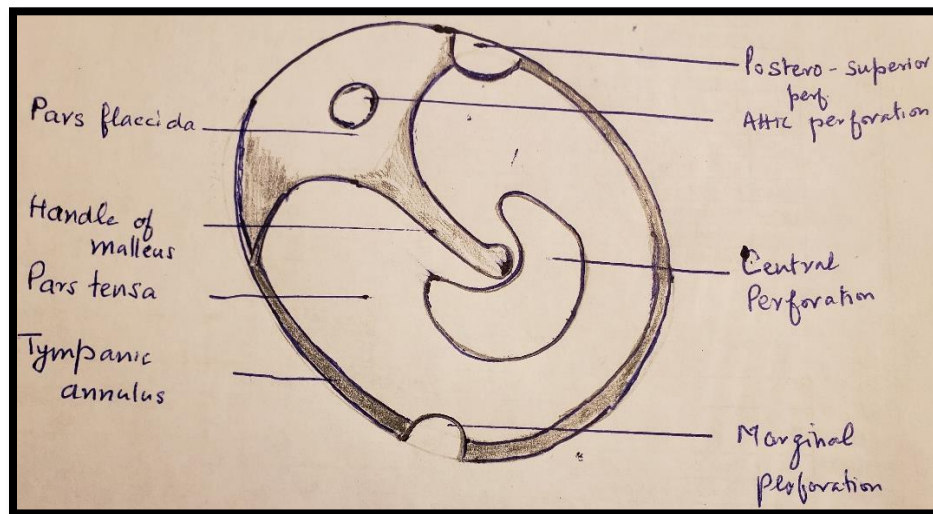


Figure 1 Left Tympanic Membrane showing types of perforation

Central perforation: A perforation in pars tensa is called central perforation. It may involve one of the quadrants or all the four quadrants. This is also called safe perforation because in majority of situations it is not associated with a cholesteatoma.

Attic perforation: A perforation in the pars flaccida is called attic perforation. A variety of this perforation involves both the pars flaccida and part of the postero-superior quadrant. This perforation is preceded by a retraction pocket. Both these perforations are considered unsafe as these are associated with a cholesteatoma.

Marginal perforation: An uncommon variety of perforations is marginal perforation. This perforation involves tympanic annulus (thickened border of TM formed by its fibrous layer). The tympanic sulcus (a bony groove in which annulus fits) may also be involved. The skin of external ear canal may migrate into middle ear through this perforation resulting in formation of a cholesteatoma. Hence this perforation is also considered unsafe.

Figure 2 shows a reddish pink TM with a small central perforation. Air bubbles are seen behind it indicating presence of muco-pus. This picture is usually seen in active mucosal disease, a type of chronic suppurative otitis media (CSOM).

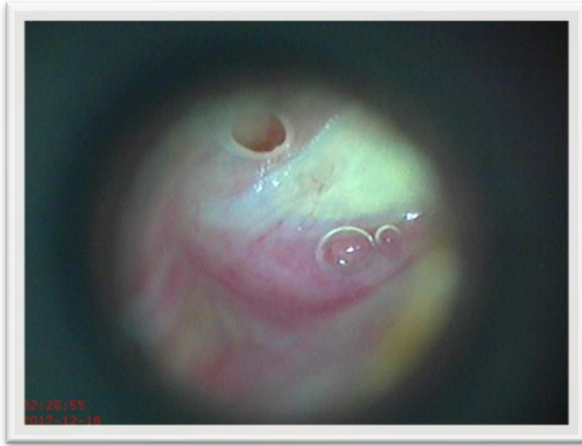


Figure 2 Small central perforation with active drainage with active mucosal disease)

Figure 3 shows a moderate sized central perforation. The middle ear mucosa is edematous. Through the perforation promontory (basal turn of cochlea), oval window and round window are visualized. This picture is usually seen in active mucosal disease, a type of CSOM.

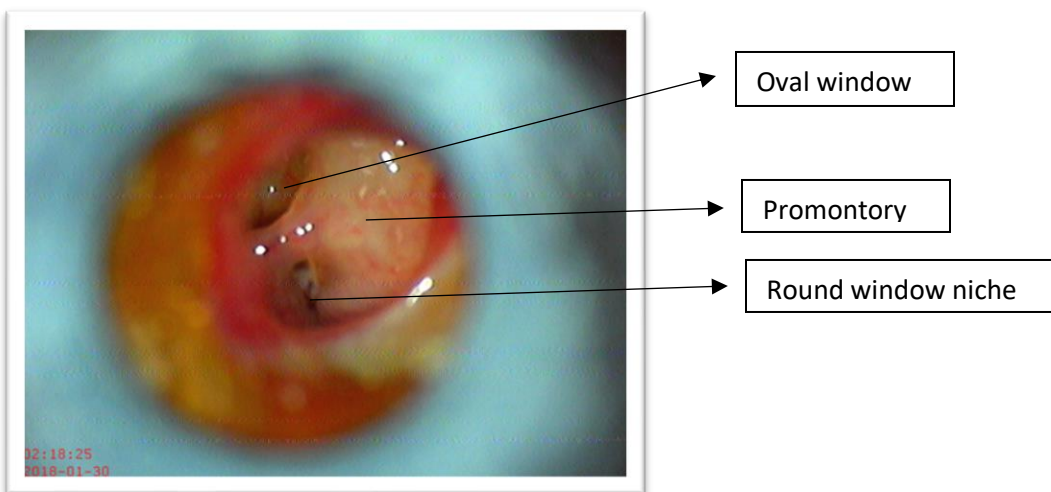


Figure 3 A moderate sized central perforation.

Figure 4 shows a reddish and edematous TM with a small central perforation. His type of picture is seen in resolving acute suppurative otitis media.

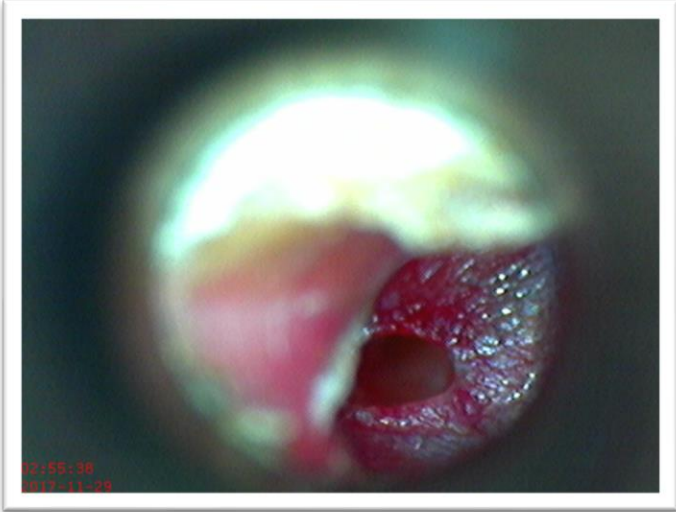
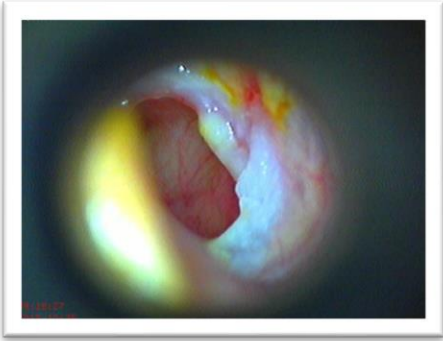


Figure 4 Resolving acute suppurative otitis media



A few more pictures.