

Traumatic tympanic membrane perforations

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1 Ear canal instrumentation, foreign bodies, and slap or blast injuries are common causes of traumatic tympanic membrane perforations

Tympanic membrane perforations (TMPs) typically present as sudden otalgia, hearing loss and bloody otorrhea in the context of a causative mechanism. Ear canal instrumentation accounts for approximately 60% of ear-related injuries (most commonly from cotton-tipped applicators).¹ Diving or water sports are also well-recognized causes.

2 Perforations may be diagnosed on otoscopy findings alone

Additionally, absence of tympanic membrane mobility on pneumatic otoscopy or conductive hearing loss on tuning fork examination (tuning fork pressed on forehead heard more loudly in the affected ear) can help establish the diagnosis. Audiometric testing is generally recommended 3 months after the injury to confirm healing.¹ In a study of 47 ears with traumatic conductive hearing loss, most audiogram results returned to normal with conservative management.²

3 Patients should be counselled to avoid getting water in the affected ear

This may be achieved by placing a cotton ball coated in petroleum jelly for showering or silicon ear plug for bathing or swimming.¹ Syringing for cerumen removal is contraindicated and must be discouraged as it may introduce infection.³ Topical antibiotics (typically ciprofloxacin) are recommended if there is purulent otorrhea. Aminoglycosides should be avoided as they are ototoxic.⁴

4 Most small traumatic perforations heal within 1 month

A prospective study involving 126 patients with traumatic TMPs showed that 72% of those smaller than one-quarter of the size of the eardrum healed spontaneously within a month with conservative management, and only 25% of larger perforations had closed by the same time.⁵

5 Otolaryngology referral is indicated for persistent or complicated traumatic perforations

Patients with a persistent TMP 3 months after injury should be referred for surgical evaluation.⁵ Indications for otolaryngology assessment include a retained foreign body, otorrhea refractory to 2 weeks of topical antibiotic, severe subjective hearing loss, tuning fork lateralizing to the unaffected ear (sensorineural hearing loss), vertigo or facial weakness (which may be indicative of an associated inner ear injury).³

References

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