

Retained Hearing Aid Ear Mould: Surgical Management of a Rare Otologic Emergency

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Abstract

Foreign bodies in the external auditory canal (EAC) are common presentations in otolaryngology practice; however, retained hearing aid ear moulds are relatively rare and underreported. We describe a case of an adult patient presenting with an impacted hearing aid mould deeply lodged within the EAC and extending toward the mastoid cavity. Removal under general anaesthesia using an endoscopic approach was successfully performed without complications. This report highlights the challenges in management, potential complications, and importance of early intervention.

Keywords: Aural foreign body; Hearing aid complication; post-mastoidectomy ear; Ear mould impaction; Otologic emergency

1. Introduction:

Foreign bodies in the ear are frequently encountered, particularly among paediatric populations. In adults, they are less common and often associated with hearing aid use, trauma, or iatrogenic causes. Hearing aid ear moulds are designed to fit snugly within the external ear canal; however, detachment and retention can occur, especially in patients with altered ear anatomy such as post-mastoidectomy cavities or tympanic membrane perforation. Impacted ear moulds may lead to symptoms including hearing loss, otalgia, otorrhoea, and risk of secondary infection. Delayed removal may result in complications such as chronic otitis externa, hearing loss, persistent tympanic membrane perforation and ossicular chain erosion.

Case report:

A 52-year-old male with a known history of left ear cholesteatoma, treated with modified radical mastoidectomy three years prior, presented to the emergency department with severe left-sided otalgia secondary to retained foreign body following a hearing aid fitting procedure at a private centre.

During the hearing aid fitting, an ear mould impression material was instilled into the external auditory canal (EAC). However during removal, the hearing aid mould canal block string thread, which function to help in pulling out the mould, became detached making removal not feasible at the centre (Figure 1).

He denied preceding otorrhea, tinnitus, or vertigo prior to the procedure. However, upon presentation and attempt for removal, he reported acute onset vertigo and worsening pain, prompting decision for removal under general anaesthesia.

The patient underwent urgent examination under anaesthesia (EUA) with endoscopic foreign body removal. Intraoperatively, the moulding material was found to extensively occupy the widened external auditory canal (EAC) and extend into the mastoid cavity, thus, significantly limiting visualization and instrument manoeuvrability. A meticulous piecemeal endoscopic removal technique was employed due to the firm consistency, extent of the material and adherence of the ear mould to the canal. Upon manipulation, the EAC becomes oedematous and lacerated.(Figure 2).

The mould was noted to be adherent to the tympanic membrane (TM), necessitating careful dissection to prevent TM perforation and ossicular injury. Complete removal was successfully achieved without evidence injury (Figure 3).

Postoperatively, the patient had immediate resolution of otalgia and vertigo, and was discharged with topical ofloxacin ear drops (5 drops twice daily for one week).

At two-week follow-up, endoscopic examination demonstrated a well-epithelialized external auditory canal and an intact tympanic membrane, with no residual foreign material or signs of infection.

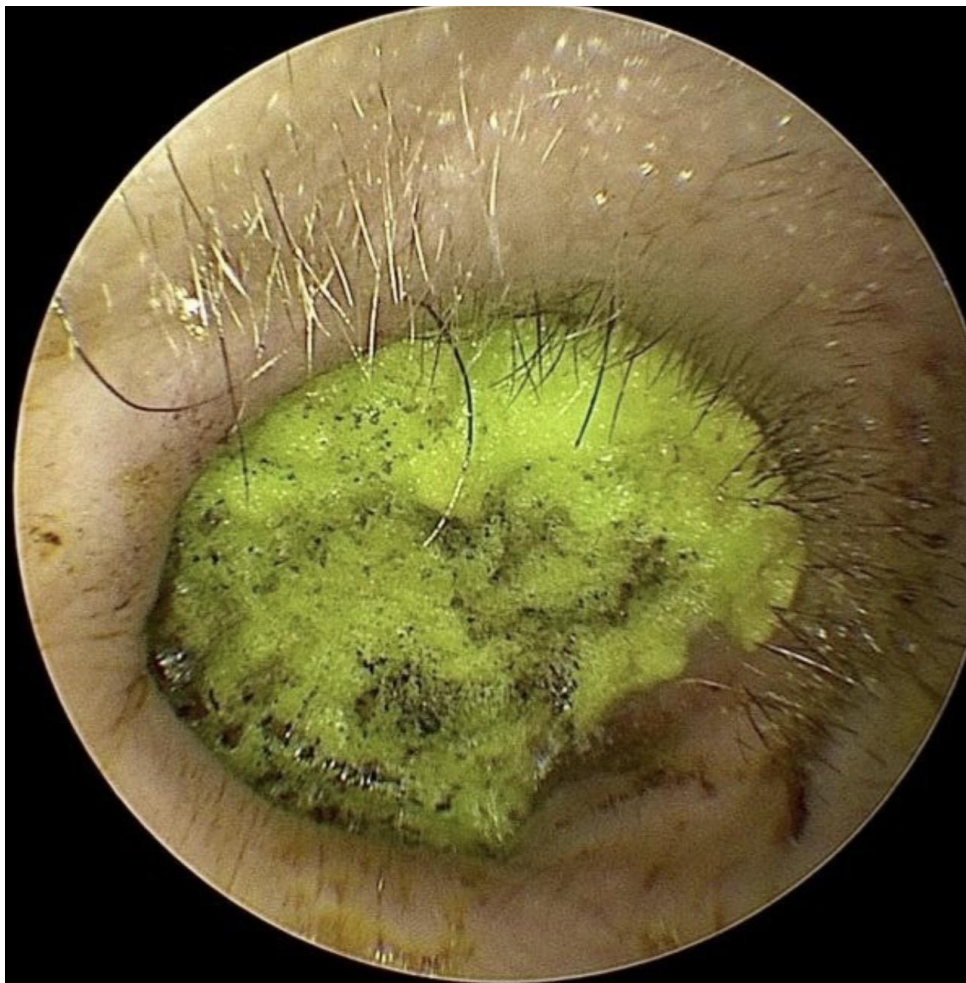


Figure 1: Green silicone material ear mould occupying the right external auditory canal meatal opening with absence of canal block string thread.



Figure 2: Endoscopic view of right external auditory canal showing laceration of the canal after piece by piece removal of the mould. (Asterisk – anterior wall of EAC)

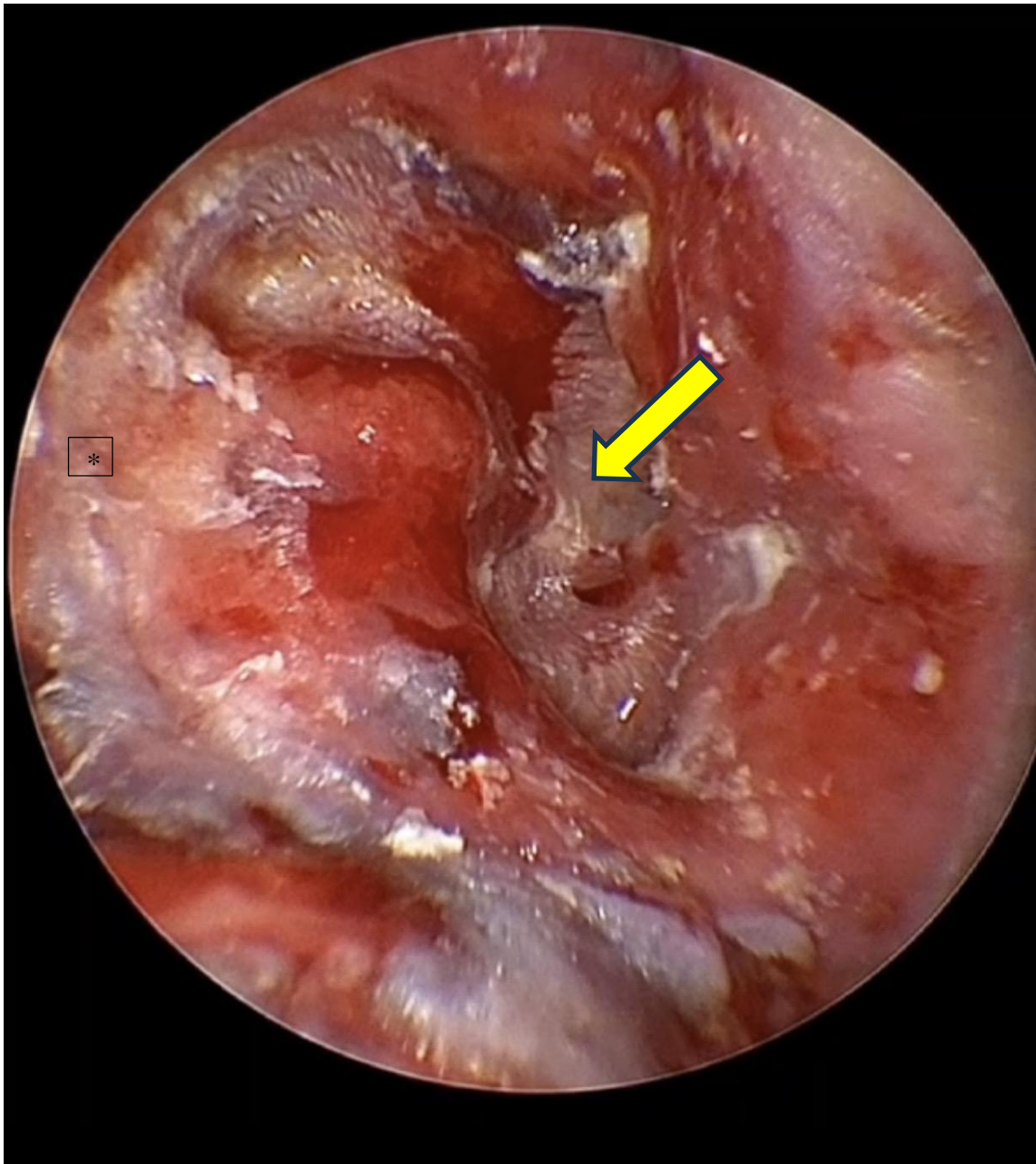


Figure 3: Endoscopic view of right external auditory canal post removal – Widened mastoid cavity witnessed with intact tympanic membrane seen (Yellow arrow – Tympanic Membrane, Asterisk – Mastoid Cavity).

Discussion

Foreign bodies in the external auditory canal constitute a significant proportion of otolaryngology emergencies; however, retained hearing aid ear moulds are rarely reported. Despite the widespread use of hearing aids, such cases remain underrecognized in clinical practice. In adults, ear foreign bodies are more commonly related to cotton swabs or fragmented hearing aid components, unlike paediatric cases which are typically due to self-insertion [1].

In this case, altered ear anatomy, specifically a mastoid cavity, played a key role in predisposing to retention and deep impaction [2]. Post-mastoidectomy ears, particularly canal wall down cavities, create enlarged and irregular spaces that facilitate migration and concealment of foreign bodies. These anatomical changes also complicate removal due to limited visualization and restricted instrument access. Anatomical variation has been identified as a major factor influencing both foreign body location and the difficulty of removal, often necessitating specialist intervention [2,3].

Clinically, retained ear moulds may present with nonspecific symptoms such as conductive hearing loss, aural fullness, or mild discomfort, and may occasionally be asymptomatic. This variability increases the risk of misdiagnosis, with cases mimicking cerumen impaction, chronic otitis externa, or aural polyps. A high index of suspicion is therefore essential, particularly in patients with hearing aid use with or without prior otologic surgery [3,4].

Hearing aid moulding comes with standard ear impression techniques whereby otoscopic examination need to be performed to detect anatomical variant followed by insertion of size appropriate canal block that serves as a safety catch from mould material adherence to tympanic membrane. In case of post-surgical patients, a larger canal block or several canal blocks are advised to be used instead of one [4,5].

Management of deeply impacted foreign bodies remains challenging, with evidence emphasizing the importance of successful removal on the first attempt. Repeated failed attempts increase the risk of canal trauma, oedema, and patient intolerance. Early referral to Otorhinolaryngology team is recommended when the foreign body is tightly impacted, adjacent to the tympanic membrane, or associated with distorted anatomy [4,5].

Complications of retained ear moulds include canal injury, otitis externa, tympanic membrane perforation, and secondary infection, particularly with delayed or traumatic removal. Prompt intervention and appropriate technique can minimize these risks, underscoring the importance of early recognition and careful surgical planning in anatomically complex cases [5].

Conclusion

Retained hearing aid ear moulds are an infrequent yet important category of foreign bodies within the external auditory canal, especially in adults with modified ear anatomy. This case highlights the diagnostic difficulty arising from vague clinical symptoms, as well as the higher likelihood of deep impaction in ears with prior mastoid surgery. Prompt identification and timely referral are crucial to reduce complications and prevent multiple unsuccessful and potentially traumatic removal attempts.

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