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CASE REPORT

A Case of Delayed Impacted Foreign Body in Ear

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ABSTRACT

Background: According to reports, 11% of patients presenting to ear, nose and throat (ENT) emergency have foreign bodies in their ear, nose and throat. Foreign bodies are more common in children and people with learning disabilities. The consequences of foreign bodies can range from minor irritations to major complications. Studies have shown that the risk of complications increases with increasing exposure to foreign bodies and attempts to remove them.

Aims and Objectives: The aim and objective of the case report was to improve awareness among clinicians about impact of ear foreign body and also to discuss its management.

Results: The case was managed by foreign body removal followed by Tympanoplasty which showed significant improvement in hearing.

Conclusion: Foreign body in ear can present with complications like tympanic membrane perforation which may require surgical repair. Early detection and removal of foreign body is essential to prevent such complications.

Keywords: *External auditory canal (EAC), Foreign body Tympanic membrane perforation.*

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INTRODUCTION

It is reported that 11% of patients presenting to ear, nose and throat (ENT) emergency have foreign bodies in their ear, nose and throat.[1,2] Although many of the objects that can be seen as foreign bodies in the ear vary from area to area, objects such as beads, beans, seeds, cotton swabs, moths, metal objects, and pebbles can also be seen as foreign bodies in the ear.[1-3] In fact, the treatment differs in that the foreign disease is killed with olive oil before removal is attempted, while the battery pack must be removed quickly before liquefaction necrosis occurs.

Foreign bodies are more common in children and people with learning disabilities.[1] However, it is worth noting that many elderly patients often use cotton swabs to relieve earaches or remove earwax. In fact, studies on the causes of foreign bodies in otolaryngology have shown that 13–18% of all foreign bodies seen by otolaryngologists are cotton wool. Wool is the most common type of foreign body in adults.[4,5] Current data show that 75% of patients with foreign bodies in the ear are asymptomatic at presentation. The most common symptoms in symptomatic patients are unilateral ear pain, ear bleeding, ear discharge, hearing loss, or a feeling of fullness in the ear.[1-3]

The consequences of foreign bodies can range from minor irritations to major complications. Studies have shown that the risk of complications increases with increasing exposure to foreign bodies and attempts to remove them.[1,2] Complications reported in the literature include bleeding, ear rupture, tympanic membrane perforation, otitis externa, and otitis media.[1,2] In this article, we present a case of foreign ear (wood pieces) affecting the ear canal.

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CASE PRESENTATION

The case is a boy aged 16-years with history of fall from a height and impaction of dried wooden pieces in left ear. He presented to us with complains of left ear pain, yellow otorrhea and impairment of hearing which was managed initially in the community with antibiotics. Upon no relief, he presented to our center. On taking detailed history, it was revealed that he had fall from a tree with direct impact over his left ear over some pieces of dried wood 5 days back. This condition of foreign body in ear was not diagnosed in community hospital and foreign body remined in the ear for 5-days. The patient has no vertigo of facial weakness.

Upon examination, the boy was stable, no history of raise in temperature. On local examination, right ear was normal with normal external auditory (EAC) canal and tympanic membrane. Left ear meatus was narrowed due to inflammation. Debridement was done in office after injecting local anesthesia. Wooden spikes were seen to

Figure 1: Showing removed pieces of wood from EAC in office.

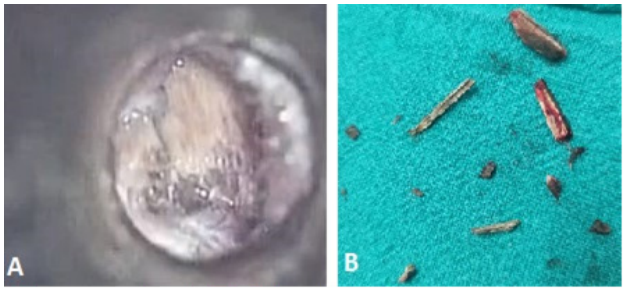

Figure 2: A- impacted pieces of wood in middle ear; **B**- removed pieces of wood from middle ear.

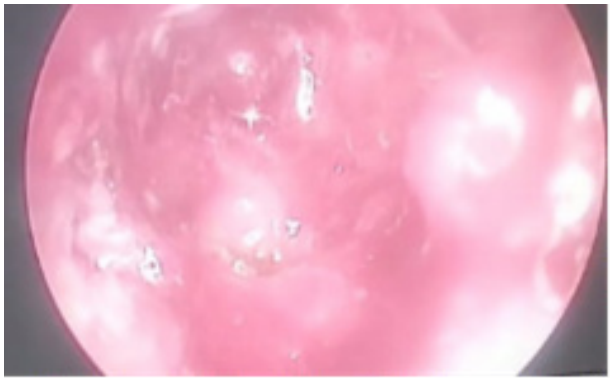

Figure 3: Oto-endoscopy finding of middle ear post removal of foreign body; showing oedematous middle ear mucosa, tympanic remnants not identifiable, ossicular chain absent.

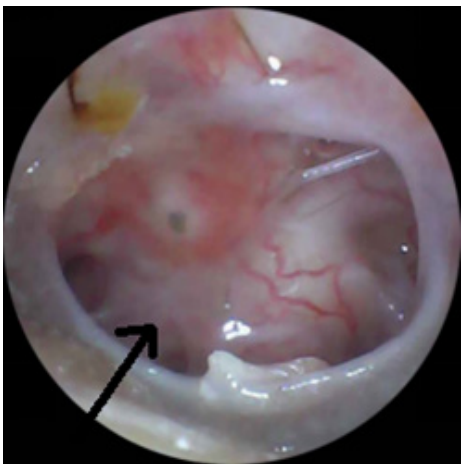

Figure 4: Shows healed tympanic findings with large central perforation and neovascularization in medial wall of middle ear.

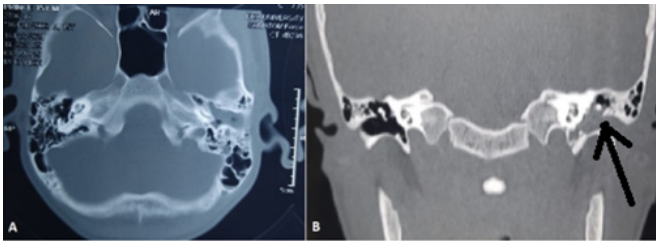

Figure 5: A- Axial section showing soft tissue density and inflammation in EAC, middle ear, retrotympanum and protympanic spaces, Lateral semicircular canal is normal. **B**- Coronal section showing soft tissue density in EAC, middle ear, hypotympanic cells and attic partly. Only head of malleus is seen.

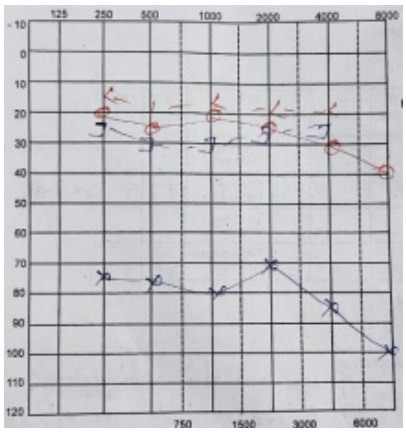

Figure 6: Preoperative PTA showing severe conductive hearing loss in left ear with normal hearing in right ear.

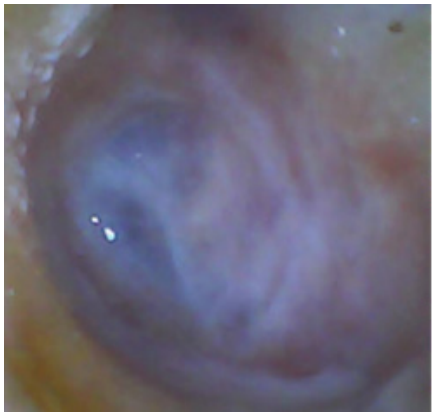

Figure 7: Shows post-operative healed tympanic membrane.

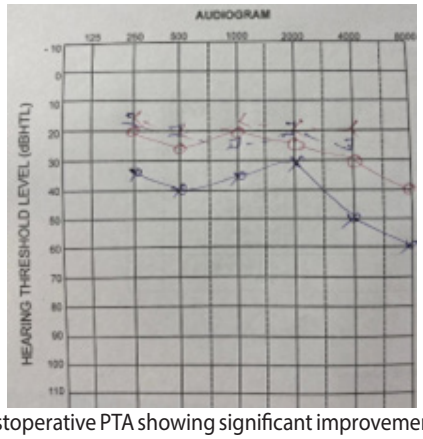

Figure 8: Postoperative PTA showing significant improvement in hearing.

be embedded under the meatal skin and thick adhesions surrounding the foreign body. Necrosed meatal and EAC skin was removed and embedded wooded pieces were removed. Multiple wooden pieces were removed from EAC in office as shown in figure 1. Upon clearing the EAC, further wooden pieces were palpable in middle ear cavity. The wooden pieces in middle ear were fixed due to adhesions and middle ear structures were non-identifiable due to prolonged impaction of the foreign body. Thus, further removal of foreign body was planned in OT under microscopy and proper instrumentation to protect vital structures like facial nerve. Prior to posting the case in OT, HRCT temporal bone was done which showed soft tissue density in EAC, middle ear, attic and hypotympanic cells; and only malleolus head was present. On table, significant inflammations of middle ear mucosa covering the wooden pieces were noted. Adrenaline-soaked cotton petties and dexamethasone-soaked gel foams were placed to reduce inflammation. Multiple pieces of wooden pieces were removed from middle ear and hypotympanic spaces as shown in figure 2. Oto-endoscopy was done, as shown in figure 3 to check for any remaining fragments of foreign body in tympanic cavity; no further foreign body were noted, significant inflammation was present, no ossicles were palpable. Upon completely clearing foreign body form middle ear and EAC, packing was done with dexamethasone-soaked gel foams; EAC was packed with rolled piece of gel foam to prevent stenosis. Pack removal was done after 7-days and kept under observation for further 3 weeks for healing. Figure 4 shows healing remnant tympanic membrane with large central perforation and neovascularization in medial middle ear wall.

INVESTIGATION

HRCT temporal bone was done which showed soft tissue density in EAC, middle ear, attic and hypotympanic cells; and only malleolus head was present, as shown in figure 5. No damage was noted to lateral semicircular canals. There was no intracranial involvement. Pure tone audiometry (PTA) showed severe conductive hearing loss in left side, figure 6. Routine CBCs were within normal limits.

TREATMENT

The patient was treated with intravenous antibiotics (ceftriaxone and metronidazole) for 3-days and shifted to oral antibiotic (amoxicillin and clavulanate) for further 4-days. Pack was removed after a week and antibiotic with steroid ear drops were prescribed for 1-week. Sequential inspection was done to check for meatal/ EAC stenosis which was not the case. After a total of 4-weeks from foreign body removal, ear was ready for rehabilitation. Remnant tympanic membrane was healed, middle ear mucosa inflammation subsided. Repeat PTA showed similar findings, severe conductive hearing loss. Cortical mastoidectomy with tympanoplasty and ossiculoplasty was performed after a month of removal of foreign body.

Intraoperatively, only head was found; rest of the ossicular structures were eroded. L-shaped cartilage was used for ossicular reconstruction. Tympanic grafting was done with autologous temporalis fascia. Figure 7 shows post-operative healed tympanic membrane after 6-weeks of surgery. Hearing also significantly improved post-surgery which was documented by PTA testing as shown in figure 8.

Outcome and Follow-up

The post operative period was uneventful and the patient was followed up weekly. After a month of surgery, PTA was repeated which should improvement, figure 6.

CONCLUSIONS

1. Although, cotton foreign bodies are common in ear, fall injury can present with ear foreign bodies as well.
2. Although, significant complications are rare in aural foreign body, traumatic cases with foreign body in ear can present with major complications like hearing impairment, facial weakness, vertigo, CSF leak, EAC stenosis.
3. Early identification and removal of foreign bodies is treatment of choice which reduces the risk of complications.
4. For impacted solid foreign body in middle ear, always consider possible facial nerve injury while removal. Thus, removal under microscopy with proper micro-instruments in advised.

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