When Cheating Goes Wrong: Hearing Device Migrated to the Middle Ear Cavity

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A twenty-four-year-old Bahraini male presented to emergency with bloody discharge from the left ear and mild earache. History revealed insertion of a hearing device in the left external canal, which migrated to the middle ear cavity. The device was removed under general anesthesia; one mm in diameter foreign body was extracted with a surgical hook through the tympanic membrane perforation. The patient did not suffer any major complication.


Foreign body entrapment in the external ear canal is a common problem in the ENT specialty; it is usually seen in the pediatric age population1,2. The most common foreign bodies to be lodged in the external ear canal are beads, and at least 50% of patients could remain asymptomatic. Foreign bodies that are entrapped in the ear could lead to a further complication that might disrupt the normal anatomy and physiology of the ear3. The aim of this presentation is to report a case of a miniature hearing device inserted in the external meatus and migrated to the middle ear cavity.

THE CASE

A twenty-four-year-old Bahraini male presented to emergency with history of insertion of a foreign body in the left ear. The patient was struggling with his examinations and decided to cheat by inserting a hearing device in his external meatus; an amplified phone neckloop was connected to a mobile phone similar to a regular earphone headset. The power is then turned on in the amplified phone neckloop and he would be able to hear voices in his earpiece and talk with his partner. However, the patient inadvertently caused a perforation in the left tympanic membrane and the device was displaced into the middle ear cavity. The foreign body inserted was metallic in nature and could have caused further complications if no intervention was performed, see figure 1.

The patient was not known to have any medical illnesses. The patient complained of some bloody discharge from the left ear and mild earache.

On examination, the patient was vitally stable and afebrile, otoscopy revealed normal right ear with an intact tympanic membrane; the left ear revealed blood in the external auditory canal with bruises due to trauma and a subtotal perforation of the left tympanic membrane; the device was not visible on otoscopy or under microscope.

Skull X-ray revealed metallic device trapped in the middle ear, see figure 2. The object looked like a button battery, and batteries being alkaline are considered an ENT emergency due to possible erosion of the ossicles and further insult to the inner ear.

Exploratory tympanotomy and examination under anesthesia of the left ear was performed under general anesthesia. Blood clots, bruised external meatus and large tympanic perforation were seen. A 1mm in diameter foreign body was visualized and extracted with a surgical hook through the perforation, see figures 3 A to C.

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The following day, the patient was discharged on Dexamethasone 0.5 Mg + Framycetin 5 Mg + Gramicidin 0.05 Mg ear drops. The patient was lost for follow-up.

DISCUSSION

Foreign body in the ear is a common presentation in the Emergency and ENT departments. It is mostly seen in children but could be encountered in adults. Foreign bodies could be classified as either animate or inanimate; the inanimate is further classified into organic and non-organic.

The most frequently seen foreign bodies are beads, cotton tips, seeds and garlic, paper, insects, button batteries and Bluetooth devices. Thirty percent of aural foreign bodies are beads, Bluetooth cheating devices making up only 3%.

The presentation varies among different ages. However, it is important to note that over 50% of patients are asymptomatic, other presentation could include ootia, otorrhea and tinnitus.

Children insert objects out of curiosity during play or other activities. In adults, foreign bodies in the ear could be due to the use of cotton buds that dislodge and impact in the external ear meatus. Other causes could include the use of Bluetooth cheating devices which was similar to our patient. Most cases could be removed through otoscope; others might require further investigations such as skull X-rays or CT scan and removal under anesthetics.

Complications may vary depending on the type and location of the foreign body, which includes bruising or laceration of the external ear meatus, tympanic membrane perforation, bleeding and otitis externa/media. Foreign bodies in the middle ear cavity could cause erosion of the ossicles and the mastoid bone, damage to the facial nerve and permanent hearing loss.

CONCLUSION

A metallic foreign body in the middle ear requires urgent management. An experienced physician with proper instrumentation is mandatory in such cases. Early intervention would most likely avoid otological complications.

Author Contribution: All authors share equal effort contribution towards (1) substantial contribution to conception and design, acquisition, analysis and interpretation of data; (2) drafting the article and revising it critically for important intellectual content; and (3) final approval of manuscript version to be published. Yes.

Potential Conflicts of Interest: None.

Competing Interest: None. Sponsorship: None.

Submission Date: 20 December 2015.

Acceptance Date: 7 February 2016.

Ethical Approval: Approved by the Research and Ethics Committee, King Hamad University Hospital, Bahrain.

REFERENCES


Figure 3B
Figure 3C
Figure 3 (A-C): The Hearing Device

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