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A "15-year old" foreign body in the ear – an object lesson for the management bodies in the ear

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Abstract: *A case of an asymptomatic foreign body in the ear that remained undetected for 15 years is reported. Removal was uneventful and there were no complications on follow-up. This case is presented to report this unusual occurrence and to review the basic principles that guide the management of foreign bodies in the ears. While some foreign bodies in the ears are true emergencies and require immediate action, most are not. Most foreign bodies in the ear will not immediately harm the patient if not meddled with, and attempts to remove foreign bodies from the ears should not be made if these conditions are not met. Failure to comply with the conditions can results in serious injuries, and negative sequelae to the ear and to hearing.*

Keywords – *Foreign bodies, Ears, Emergency care, Trauma to ears, Principles of management*.

I. Introduction

Foreign bodies frequently get impacted or retained in the ear, usually in the external auditory meatus (EAM). A wide array of objects are known to be involved. These include vegetative objects like seeds, non-vegetative objects such as food, insects, paper, stones, beads, mattress foam, button batteries, and even sharp objects like broomstick pieces and pins. The most common foreign bodies however, are food, plastic toys, and small household items. [1]

These foreign bodies pose a challenge not only to the otolaryngologist, but also to paediatricians, emergency physicians, family physicians and primary care physicians. [2] Also, since the patients are usually children and the ear is not readily accessible, there is usually accompanying anxiety and apprehension in the patients and their relatives even when the patient is not in distress. Such patients often present in emergency rooms and there is a lot of pressure on the caregiver to intervene immediately.

However, the majority of foreign bodies in the ear do not pose any immediate threat to the patient's health. Careful attempts at removal are recommended but such need not be done immediately if conditions are suboptimal. This is an important point to note, as misguided and unskilled attempts to urgently remove foreign bodies are more dangerous to the patient than the foreign bodies themselves. [3, 4, 5] An unusual case of a foreign body retained in the ear for 15 years is here presented and the basic principles of management of foreign bodies in the ear are reviewed.

II. Case Report

The patient was a 25-year-old medical student who presented after she had just had a lecture on foreign bodies in the ear. She gave a history of having had the broken off graphite writing tip of a "lead" pencil stuck in her left ear while trying to scratch the ear with the pencil while in elementary school 15 years prior to presentation. She could not remember having any symptoms at the time of the accident. At presentation, she had no complaints. She also had not had any ear symptoms between the time of the incident and the time of presentation. However, she insisted that she was sure that the foreign body was still in the ear.

Examination of the left ear revealed a left EAM that appeared normal. It was lined copiously with cerumen but was not occluded, and a healthy looking tympanic membrane with normal mobility was visualized. No distinct foreign body was seen. The appearance of the right EAM was similarly normal. Hearing was also normal in both ears. Despite reassurance, the patient insisted that the foreign body was still present and requested for ear syringing.

The ear was syringed and the "lead" pencil tip was found embedded in the cerumen that was syringed out of the left external auditory meatus. There was no abnormality noted in the EAM after syringing. The patient was followed up for a year and did not develop any sequelae.

III. Discussion

In this case report a foreign body is found after lying undisturbed in the ear for 15 years without causing harm to the patient. While it is not recommended to leave a foreign body in-situ in the ear for prolonged periods once discovered, it is important to know that like this foreign body, most foreign bodies in the ears, if

not meddled with, will not immediately harm the patient. This principle forms the basis for the caution that is sounded when managing patients with foreign bodies in the ear. If the foreign body does not fall in the categories of foreign bodies that are regarded as true emergencies, and the conditions for removal of foreign bodies are not met at the time of presentation, the patient and relatives should be reassured, and removal scheduled for the soonest possible time when all the conditions can be met.

Classically, a live insect in the ear is regarded as the major true emergency foreign body in the ear situation, as patients with live insects in the ear often present with severe pain and in great distress. In addition, some insect can sting, and cause hypersensitivity reactions and injuries to the EAM and tympanic membrane. [6, 7] The distress, potential lethal consequences and possibility of damage to the EAM and tympanic membrane dictate that such patients must be attended to promptly. Even so, the focus of the emergency intervention is not on the removal of the insect, but on killing the insect. This is usually achieved by instilling non-irritant fluids such as mineral oils, surgical spirit, or even "water for injection" into the ear. [6, 7] The result is usually dramatic and the patient's comfort promptly restored. The patient is then reassured and scheduled for removal of the foreign body at a later date if the conditions for removal of foreign bodies cannot be met at this initial time. This simple intervention can be done at home and should be taught as first aid for patients with live insects in the ear, and as part of primary ear care to health care providers.

It has also been reported that button batteries are dangerous foreign bodies. Such batteries contain alkali and when they come in contact with moisture, can cause severe liquefaction necrosis injuries to the EAM and tympanic membrane. Prompt identification and rapid removal of button batteries is therefore recommended. However such removal must still be done with strict compliance to the principles for removal of foreign bodies discussed below. [8, 9] If the required conditions cannot be met, the patient must be referred urgently.

For most other foreign bodies, removal should be deferred till certain very specific conditions are met. The first of these conditions is that the patient must be relaxed and cooperative. This is often a difficult condition to be met since most of the patients are children. In older children it is possible to explain to them and obtain cooperation. However in a large proportion of children sedation or anaesthesia is often necessary. [10]

Secondly, it is necessary to have the appropriate instruments necessary for the removal of the foreign body in question. While several instruments (including crocodile or alligator forceps, ear dressing forceps, foreign body basket forceps, ear hooks, ear syringes) can be utilized to remove foreign bodies from the ears, it is important to be able to determine which instrument or procedure is appropriate for removal of particular foreign bodies. For example, foreign bodies that can be grasped like paper can easily be removed with forceps, but attempts to remove smooth rounded foreign bodies that cannot be grasped with forceps are likely to be unfruitful as the forceps are more likely to push the foreign body further. Such foreign bodies should rather be syringed out with an ear syringe and warm water. But as useful as ear syringing can be for foreign bodies, it is not advised to attempt to syringe vegetative foreign bodies like seeds out of the ears. This is because such foreign bodies can absorb water, swell up and exert pressure on the EAM wall and also become more difficult to remove if the initial attempts at removal are not successful. There are also occasions where it may be necessary to use specialized equipment like operating microscopes or loupes [5] before foreign bodies can be visualized and manipulated out of the ears. When a foreign body cannot be seen, attempts should not be made to remove them. Patients with such foreign bodies should be referred appropriately.

Adequate visualization of the foreign body with a good light source is therefore the third prerequisite for successful foreign body removal. As has been stated, attempts should only be made to remove foreign bodies only after they have been visualized. Patients should be discouraged from trying to remove foreign bodies by themselves because they simply cannot see their own ear canals! Otolaryngologists overcome this barrier with head mirrors or head lamps which are capable of focusing light into deep cavities, and ensure adequate visualization of foreign bodies before attempting to remove them. Other sources of light that can come in handy include pen lights and angle poise lamps. As also stated earlier, specialized equipment like operating microscopes or loupes may be needed to adequately visualize foreign bodies in the ears. [5] In our center, it is not uncommon to see patients who come in complaining of foreign bodies in the ears, and after examining no foreign body is found! The rule of thumb is that a foreign body in the ear must be visualized before attempts at removal.

Finally, it is vital that the individual attempting to remove the foreign body has the requisite skills and is able to stop when he has reached the limit of his ability. Many foreign bodies can be easily removed by physicians other than otolaryngologists, but the deeper the foreign body gets into the EAM, the more difficult it is to remove. Also, as the number of failed attempts increase, the more difficult the removal becomes. Patients with foreign bodies that are deep in the EAM, those that have undergone failed foreign body removal attempts (one failed attempt is an indication for referral) and patients with foreign bodies associated with inflammation of the canal with edema and/or pain should be referred to the otolaryngologist, as additional treatment may be required and some foreign bodies will require operative extraction.

IV. Conclusion

In conclusion, while some foreign bodies in the ears are true emergencies and require immediate action, most are not, and removal of foreign bodies in the ears is strictly guided by certain principles in order to prevent needless complications. These conditions are also applicable even when sharp objects like broomsticks and pins are retained in the ear as the potential for injury in these cases is even more. Never should attempts be made to remove foreign bodies from the ears if these conditions are not met. Failure to comply with these conditions can results in serious injuries, and negative sequelae to the ear and to hearing.

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