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Original Article

AN ANNUAL AUDIT OF THE EAR FOREIGN BODIES IN HOSPITAL UNIVERSITI SAINS MALAYSIA

AA Yaroko, M Irfan
Department of Otorhinolaryngology - Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia. (Yaroko Ango Ali, Irfan Mohamad)

Address for correspondence: Dr Yaroko A Ali, Department of Otorhinolaryngology - Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia. Tel: 609-7673 693, Email: aliango2002@yahoo.com

ABSTRACT
Foreign bodies or objects in the ear are one of the most common problems encountered by otorhinolaryngologist (ORL) with attendant complications, removal of which requires expertise. Patients with this problem who sought treatment in the otorhinolaryngology clinic of Hospital Universiti Sains Malaysia (HUSM) were studied for duration of one year from January 2010 to December 2010. Specifically, the clinical presentation, type of foreign body and management outcome were analysed. 72 patients were reviewed - 44 (61.1%) males and 28 (38.9%) females. The age range was one year to 75 years with 59.8% being children below 10 years old. Ear pain (56.9%) was recorded as the most common and persistent symptom and insects (54%) were the commonest foreign body encountered. 95% (69) of the foreign bodies were removed under clinic setting with only three (4.2%) cases requiring general anaesthesia. Post-removal complications were noted in only one patient (1.4%). Repeated attempts by untrained personnel should be avoided and timely referral is vital to avoid undesirable complications.
Keywords: Foreign body, ear, management outcome.
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INTRODUCTION

Foreign body in the ear is one of the most common conditions encountered at the otorhinolaryngology (ORL) outpatient clinics. Various incidents affecting the paediatric population in particular have been reported worldwide while adults are rarely affected. Unlike the paediatric age group who intentionally insert foreign objects found at home into the ear out of curiosity,[1] cases involving adults are either accidental[2] or due to underlying mental disorder.[3] Patients present themselves with pain, discomfort and bleeding among others, depending on the foreign body type.

The first attempt is the best attempt in foreign body removal and the ease in dealing with the foreign body usually depends on its location as well as the child's cooperation and immobilisation.[4] In this index study, we evaluated the profile of ear foreign bodies as seen in a tertiary referral centre, with special interest in duration and type of symptoms. Also considered is the time taken before referral, unilateral or bilateral involvement, single or recurrent episodes and complications encountered.

MATERIALS AND METHODS

This is a retrospective study (a year audit) of all cases with foreign body in the ear reviewed in the ORL clinic of Hospital Universiti Sains Malaysia (HUSM). Some of these patients were referred by general practitioners, others came from the Emergency Department while the rest approached the clinic directly without attempting to remove the foreign body. We obtained 72 medical records of the patients from the Medical Department and made special note of the demographics.

RESULTS

The medical records that contained complaints, duration of complaints, type of foreign body, number of episodes, mode of removal of foreign body and condition of post-removal tympanic membrane were analysed.

The age distribution of patients is shown in Table 1. A large number of patients were children below 10 (59.8%). More male (61.1%) patients were treated for the problem with the ratio of 1.6:1.

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Table 1: Age distribution

Age (Years)	%
1-2	13.9
3-4	18.1
5-6	11.1
7-8	4.2
9-10	12.5
11-20	8.3
21-30	6.9
31-50	15.3
>51	9.7
Total	**100.0**

Pain is the most common presentation (56.9%) followed by ear bleeding (Table 2). Most patients waited for two days before seeking medical attention (Table 3). One patient took 42 days before seeking medical help (1.4%). Tick (37.5%) is the most implicated type of foreign body followed by cotton bud (18.3%) as shown in Table 4. Most patients, children in particular, had foreign body in their right ear (Table 5) in about 58.3% of cases as against 36.1% (left ear). Surprisingly, four patients (5.6%) had foreign bodies in both ears (bilateral). Three patients (4.2%) had recurrent episodes.

Table 2: Mode of presentation

Mode of presentation	%
Discomfort	6.9
Pain	56.9
Bleeding	8.6
Others	5.6
Itchiness	7.9
Discharge	5.7
Tinnitus	4.2
Unspecified	4.2
Total	**100.0**

Table 3: Duration of foreign body

Duration (Days)	%
1	22.2
2	23.6
3	13.9
4	1.4
5	6.9
6	2.7
7	18.1
14	5.6
21	4.2
42	1.4
Total	**100.0**

Table 4: Type of foreign body

Type	%
Beetle	4.2
Cockroach	2.8
Tick	37.5
Unspecified insects	9.7
Stone	2.7
Rubber	5.6
Cotton	18.3
Others	6.7
Pencil	4.2
Unspecified	8.3
Total	**100.0**

Table 5: Location of foreign body

Side	%
Right ear	58.3
Left ear	36.1
Both ears	5.6
Total	**100.0**

Majority of the patients required only permeatal removal under clinic setting while three patients (4.2%) had to undergo general anaesthesia (GA). Overall, only one patient (1.4%) had post-procedure tympanic membrane perforation.

DISCUSSION

A foreign body is defined as an endogenous or exogenous substance depending on the affected anatomy. Foreign bodies are grouped into those that require immediate removal and those that ideally require operative procedure.[5]

Ear foreign bodies form a large percentage of ORL cases, particularly affecting children.[6] It also constitutes important ORL emergencies which must be attended to immediately to prevent various complications.[7]

The study revealed that the most common complaint was localised ear pain (56.9%) followed by bleeding (8.6%). Ngo *et al*., in their study also noted ear pain as the most common presentation.[7] These two symptoms are usually caused either by the presence of the object itself or trauma to the ear by unsuccessful attempts by untrained medical personnel. The trauma could also be explained by the nature of the external auditory canal (EAC) which is bony, narrower, highly vascular and very sensitive.[4] Thus, slightest trauma to this region can result in pain and bleeding. The deeper the foreign body is dislodged, the greater the risk of trauma to the EAC.

This condition (where the foreign body is deeply dislodged) appeared to be very common among referred patients who constituted majority of patients in the study. They mostly presented with impacted foreign bodies after several unsuccessful attempts by referring practitioners to remove the object, which could have been avoided with simple and timely referral. In our experience, we encountered patients with insect (tick or beetle) foreign body which anchored themselves by biting the skin of the EAC, causing uncontrollable and persistent bleeding and pain. On rare occasions, the trauma is usually caused by patients themselves attempting to remedy the situation by resorting to sharp objects or hot oil. An examination of a patient suffering from ear pain revealed first degree burns of the ear lobule and the EAC was filled with oil. Upon cleaning, the EAC also displayed first degree burns and an impacted foreign body on the tympanic membrane found to be a cotton bud. Thus, we concluded the burns were due to the usage of hot oil which is one of the common practices of the local people in remedying ear pain. The least complaint was tinnitus (4.2%).

Patients also presented with discomfort, itchiness, discharge from the ear, "others" and "unspecified". "Others" include symptoms such as decreased hearing and "sensations" caused by the foreign body. "Unspecified" presentation relates to specific symptoms which is not mentioned or cases where a mother presents her child with cotton bud in the ear (which happened when attempting to clean the child's ear). Zamzil *et al*., reported isolated facial palsy due to intra-aural tick (ixodoidea) infestation.[8] However, in this study, no patient presented with facial nerve palsy secondary to intra-aural tick even though aural tick constituted the commonest foreign body noted. Maximum tolerable period of foreign body in the ear was two days (23.6%). This is well understood because most of the foreign bodies were insects which caused discomfort to the patients. However, one patient (1.4%), a seven-year-old, was treated after 42 days and the object was later identified as a hand watch battery. It was a misdiagnosis because the patient was referred to us with ear discharge, itchiness and fever not responsive to treatment.

Most cases were observed among children below the age of 10 (59.8%). The predominance among this age group is not surprising because children by nature are inquisitive and like to explore various orifices in their body.[6]

Most patients in particular children, presented with foreign bodies in their right ear (58.3%) and bilateral foreign bodies (5.6%) were also found. Similarly, Ijaduola and Okeowo, reported 63% of right-sided foreign bodies in their series.[6] This is supported by the fact that most children are right-handed.

It was noted more males were affected (61.1%) compared to females in the ratio of 1.6:1. The most common foreign body noted was the intra-aural tick (37.5%) followed by cotton bud (18.3%). In contrast, Ryan *et al*., found tips of cotton bud to be the most common, and in adult patients it is mostly due to the practice of ear cleaning or scratching because of itchiness.[9] Srinovianti and Ahmad, in their series recorded a total of 91 intra aural tick cases over a one year period.[10] The least common foreign body were stone and cockroach. Other foreign bodies include beetle, rubber and "others". "Others" includes objects such as pencil tips, erasers and those that could not be identified as they had been in the ear too long and had mixed with ear wax. Bressler and Shelton, in their series, found cockroaches to be the most common foreign body amongst 98 patients.[11] Similarly, Antonelli *et al*., also found cockroaches to be the most common foreign body in the EAC based on 273 cases.[12] However, both authors did not differentiate between adult and paediatric groups.

Recurrence of foreign body is rarely reported. As noted in our series, 69 patients (95.8%) had only one episode while three patients (4.2%) had recurrent episodes. One of these patients was mentally ill and thus was frequently admitted with stones in both ears which were removed under GA. This patient initially presented with tympanic membrane perforation. As noted in one series, 40% of the patients presented with complications such as perforated tympanic membrane with ossicular chain damage, aural discharge or trauma to canal only.[6]

A total of 95% of the patients successfully underwent permeatal removal of the foreign bodies in clinic settings. Removal was achieved using various techniques and instruments depending on the type and size of foreign body and whether the foreign body was dead or alive. For an insect that was alive, liquid paraffin and lignocaine spray were used to suffocate and kill it before suctioning it out. Lignocaine spray was found very useful in already traumatised ears.

For an uncooperative child without prior trauma, we usually wrap the child in a bed sheet and hold him or her down on supine position. An assistant is required to fully immobilise the child for easy removal of the foreign body. For successful removal, immobilisation while fully conscious remains the key.[11]

Only three patients (4.2%) were required to undergo GA. One was mentally ill and two were children with narrowed oedematous external auditory canal due to prior trauma. Tympanic membrane perforation as a complication of procedure was seen in only one patient (1.4%) overall.

We noted that an attempt at foreign body removal by untrained medical professionals caused more complications than the presence of the foreign body itself. Most of the patients in the study had several unsuccessful attempts at removal before referral. Similarly, Srinovianti and Ahmad, noted that more than half the patients (53%) had a traumatic experience due to failed attempts by the referring medical personnel to remove off the foreign body.[10]

CONCLUSION

The common presentations as discovered in this study were local pain and ear bleeding which are non-specific. Thus, good lighting and proper instruments can ensure success in addition to early and prompt diagnosis. Referral to properly trained professionals for difficult cases is a better option. Avoidance of repeated attempts and timely referral to specialist centres should be the rule to prevent serious complications.

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