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Night Crawlers- A Nightmare!

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Abstract

Background: Aural foreign bodies are among the most common emergencies presenting to Otorhinolaryngo-logists world over and when dealt with poorly can cause high morbidity and mortality. Our study aimed at analysis of types of ear foreign bodies and various aspects of their management in rural population.

Methods: A retrospective study was done in Rajah Muthiah Medical College and hospital, Chidambaram which is a tertiary care teaching hospital in rural Cuddalore district. 121 patients complaining of foreign body in ear between January 2022 to October 2022 were analyzed.

Results: Among 121 patients, two third were >10 years of age (66.9%). About 55% were living foreign bodies, cockroach was the most common arthropod. Except two impacted foreign bodies in ear, remaining were removed at the time of presentation and treated accordingly.

Conclusions: Early presentation , timely intervention and skilled removal by experts can help prevent adverse outcomes of foreign body ear. Sedation of living foreign bodies helps in reducing the complications.

Keywords: Aural foreign body, Cockroach

INTRODUCTION

The external auditory canal (EAC) is the most common location to encounter a foreign body, accounting for about 44% of cases, with nasal, pharyngeal, esophageal and laryngo-bronchial locations representing 25%, 23%, 5% and 2% of cases respectively [(1)]. Foreign bodies (FBs) may be classified as animate (living) and inanimate (nonliving). The inanimate FBs can further be classified as organic or inorganic and hygroscopic (hydrophilic) or nonhygroscopic (hydrophobic) [(2)]. Aural FBs may present with diverse symptoms including unilateral ear block, ear pain, ear bleed, ear discharge, tinnitus, hearing loss, cough, dizziness, and rarely facial palsy, while some aural foreign bodies are asymptomatic and are identified incidentally during routine otoscopic examination [(2,3)]. Although most of the aural foreign bodies cannot be considered as cause for emergency treatment (unless they contain hazardous chemicals), the mechanical irritation produced by an arthropod such as cockroach in the ear canal may cause great suffering to the victim and require immediate intervention.

The aim of the present study was to analyze the patients with aural foreign bodies who attended the Emergency Department (ED) in our medical college hospital over a period of 10 months (January 2022 to October 2022).

Patients and method:

A retrospective analysis was done of patients who presented with ear foreign bodies over a period of 10 months from January 2022 to October 2022 to the emergency department of Rajah Muthiah Medical

College Hospital, Chidambaram. History and patient data including age , sex and presenting symptoms were taken and complete ENT examination was performed. Instruments such as Jobson horne probe, alligator forceps and Tilley's forceps were used for removal along with methods like syringing and suctioning whenever needed.

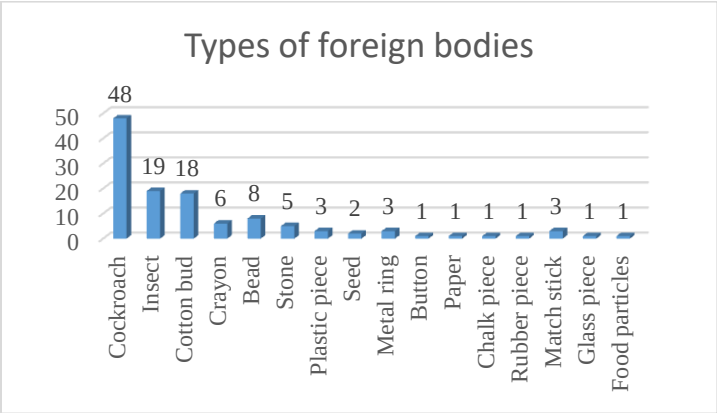
Results:

There were 121 patients in the study period of 10 months. There were 39 males (32%), 29 females (24%), 27 male children (22%) and 26 female children (22%). The age of patients ranged from 2 years to 69 years.

Among the 121, 67 (55.4%) were living (animate) foreign bodies, 27 (22.3%) were organic foreign bodies such as cotton ear bud, seeds, chalk piece etc. and 27 (22.3%%) were inorganic foreign bodies, such as bead, metal ring, stone etc. Out of 121 patients, one 6 years old male child presented with foreign bodies (crayons) in both EAC.

Age distribution	No of cases
<5 years	24
6-10 years	16
11-20 years	28
21-40 years	30
41-60 years	18
>61 years	5
Total	**121**

Among the living foreign bodies (67), 48 were cockroaches of varying sizes and 19 were other small insects like beetles, flies, etc.



Discussion:

Aural foreign body removal is technically more difficult and challenging compared to nasal foreign body removal because the outer ear is a complete canal, cartilaginous in the outer one third, and bony in the inner two thirds; thus, the space available to maneuver an instrument is very limited. In addition, the ear canal is supplied by a myriad of nerves, making it very sensitive. Each of the described methods has its advantages as well as disadvantages; hence, the selection of method to remove foreign body is to be made for each case, depending on the type and size of the foreign body and its location within the EAC. If trauma is caused to the ear, prophylaxis against otitis externa should be provided with topical antibiotic ear drops.

Occasionally, post aural approach needs to be used to remove foreign bodies impacted in deep meatus, medial to isthumus or those which have been pushed into the middle ear or when the size of the FB precludes transcanal removal.

Most adults and older children usually tolerate and cooperate well for the removal of aural foreign bodies without sedation. The key to successful removal of aural foreign body is immobilization. This is achieved in uncooperative children by applying sheet wrap to cover the limbs and holding by two attenders. If immobilization cannot be achieved, sedation should be considered.

In our tertiary care centre, all ENT foreign body removal are routinely done by the Otorhinolaryngology experts irrespective of its nature. Out of the 121 cases, 119 foreign bodies were removed in Emergency Department itself using good illumination and instruments such as Jobson horne probe, microear forceps and Tilleys forceps. In few cases, aural syringing using warm normal saline and suction cleaning were done based on the nature of the foreign body. The remaining 2 cases were impacted foreign body (bead) and removal was done under general anesthesia with the microscope at operation theatre on an emergency basis.

Among the 121 cases we dealt, 2 presented with perforated ear drums. One middle aged female with live cockroach and one female child with impacted

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foreign body. Apart from these 2, we did not encounter any other significant complications.

Of the insects removed, majority were live at the time of presentation to ED and were removed after instillation of lignocaine into the EAC to paralyze the insect to avoid complications, Lignocaine instillation procedure is usually deferred in cases of traumatic EAC obscuring the view of tympanic membrane to avoid penetration through round window and causing inner ear symptoms. Other agents like mineral oil may also be used to paralyze the insects in the external auditory canal beforeremoval.

FIG: Myriad of aural foreign bodies removed

A high incidence of living foreign bodies in our study is probably explained by the factors such as rural population, unhygienic living conditions, sleeping on fields & outside the houses and poor socioeconomic status.

The presence of cockroach in majority of ear foreign bodies kindled our interest to check for any scientific reason behind. It is known that ear wax is composed of fatty acids, alcohols, ceramides, wax esters, triglycerols, long chain hydrocarbons and cholesterol precursors as lanosterol, squalene and cholesterol. [(4)] Coby schal, an entomologist at North Carolina State University stated that cockroaches are attracted by certain types of chemicals called volatile fatty acids, which are released by fermented foods like bread and beer. And just like cheese, our ear wax radiates these cockroach- wooing chemicals as well. The smell that emanates from ear is attractive to the cockroach [(5)].

Conclusion:

A retrospective study of 121 consecutive ear foreign body removal at our tertiary care centre has been presented. A wide variety of foreign bodies were removed, with cockroaches predominating. All living arthropods to be removed after paralyzing using lignocaine and its complete removal to be confirmed for avoiding complications by its remnants like legs or wings. By improving the basic living conditions and general hygiene may reduce the incidence of entry of cockroach into the ear. And it is the expertized hands with proper instruments which determine the outcome of ear foreign body removal with no or minimal complications.

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