Case Report

Light-assisted removal of ear canal live insect–A noninvasive approach for first level responders

Amal Jaber Alfaifi[1], Liaqat Ali Khan[2], Hadi Mohammed Mokarbesh[2]

[1]Department of Family Medicine, Ministry of Health, Jazan, [2]Department of Otolaryngology, King Fahad Central Hospital Jazan, Kingdom of Saudi Arabia

Abstract

Physicians, working in the primary care setting and/or emergency departments, encounter more often patients of any age group with foreign bodies in the external auditory canal (EAC) and urgent removal is crucial to avoid complications. The condition is more commonly managed on an urgent basis if the foreign body is a live insect that is more agonizing for the patient. Foreign body removal is quite challenging but an essential skill for first-level responders and different approaches, each with its own pros and cons, are used for EAC foreign bodies removal. Herein, we report two cases that were managed safely by a noninvasive approach by using light illumination of EAC in complete darkness. The approach, not reported in the available literature, can be used as first-level management before opting another alternative, in settings where otolaryngologist services are not readily available.

Keywords: Ear canal, light, live insect, noninvasive, physician

Introduction

Physicians working as first-level responders, as primary care physicians and/or emergency care doctors, commonly encounter patients with foreign bodies in the external auditory canal (EAC) at some point in their clinical career. Most of the aural foreign bodies are impacted at the bony-cartilaginous junction, the narrow part of about 4 cm long ear passage, with the bony part directed medially and cartilaginous directed laterally. Various types of foreign bodies, either non-living like cotton wool, paper piece, seeds, beads, or living such as insects may be found in aural canal. The insects constitute about 14–18% of the foreign bodies found in EAC.[1,2]

The signs and symptoms depend on the nature, position, and duration of the foreign body in EAC. A live insect may be more irritating and gives extreme discomfort to the patient, ranging from simple irritation and otalgia to vertigo and even drum perforation. Thus safe and prompt removal is mandatory not only to relieve patient's discomfort but to avoid undesirable outcomes. Herein we report two cases of live insects in EAC which were managed safely by light-assisted approach.

Case-1

A 60-years-old otherwise healthy female presented to our emergency department, with a history of severe pain and discomfort in her right ear, after feeling something accidentally enter in her ear, 15 mins ago while she was working in her home backyard. On questioning she feels bites in her ear with severe pain (VAS: 7), intermittent in nature, which makes her cry during the bites. There was no history of previous attempts of ear manipulation.

Examination revealed an irritable patient with normal ranged vitals and unremarkable systemic findings. Local examination showed nothing on inspection except a mildly reddened auricle. Manual otoscopy revealed a live bug in the EAC.

Address for correspondence: Dr. Liaqat Ali Khan, Department of Otolaryngology, King Fahad Central Hospital Jazan, Kingdom of Saudi Arabia.
E-mail: drliaqatalikhan@yahoo.com

Received: 06-06-2019 **Revised:** 01-08-2019 **Accepted:** 05-09-2019

Access this article online

Quick Response Code:

Website: www.jfmpc.com

DOI: 10.4103/jfmpc.jfmpc_443_19

How to cite this article: Alfaifi AJ, Khan LA, Mokarbesh HM. Light-assisted removal of ear canal live insect–A noninvasive approach for first level responders. J Family Med Prim Care 2019;8:3042-4.

An urgent noninvasive attempt was decided. The patient shifted to a minor procedure room located in the emergency department (ED). The patient and her relatives were counseled about the procedure and taken into confidence. The door was closed to secure privacy of the patient with a physician, a nurse, and an attendant. The patient seated in an upright position with the head tilted to the side. After stabilizing the patient by attendant, the physician pulled her pinna upward and backward by one hand while tragus by the other. Room lights were switched OFF to ensure complete darkness. The nurse was directed to illuminate the EAC from outside by a luminous light. After 4–5 seconds of light exposure, the patient feels severe discomfort in her ear followed by a sense of relief with a visible "black-garden ant" coming out of the EAC [Figure 1a]. The ant was secured [Figure 1b] and the room lights were put ON. Postprocedure otoscopy showed clear EAC with normal light reflex, having no drum perforation. The patient discharged asymptomatically with a follow-up visit in the ear nose throat (ENT) outpatient department (OPD) the next day. On follow-up the patient was asymptomatic with no other abnormal findings.

Case-2

A 9-years-old female child was referred by the primary care physician and brought by her parents to our emergency department with a history of severe pain and discomfort in her right ear, after feeling something enter in her ear accidentally, 20 minutes ago while on her way back to home from school. On questioning she feels severe pain (VAS: 8) in her right ear, intermittent in nature, associated with itching, nausea, and dizziness. There was no history of previous attempts of ear manipulation by the referral doctor or their parents.

Physical examination revealed an irritable child with normal ranged vitals and no abnormal findings on-ear inspection. Manual otoscopy revealed a live insect in the EAC.

A noninvasive approach was planned on an emergent basis. The patient shifted to minor procedure room within the ED. The patient and her parents were counseled about the procedure. The procedure room door was closed to secure privacy of the patient with a physician, attending nurse, and patient's mother. The child was seated in an upright position with the head tilted towards the other side. After stabilizing the patient by her mother, the physician pulled her pinna upward and backward by one hand while tragus by other. Room lights were switched OFF to ensure complete darkness. The nurse was directed to illuminate the EAC from outside by light. Within few seconds of light illumination, the child started crying followed by a visible cabbage-white butterfly (Pieris rapae) coming out of the EAC [Figure 2a]. The insect was secured [Figure 2b] and the room lights were put ON. Postprocedure, otoscopy showed clear EAC with light reflex, and no drum perforation noted. The child was discharged symptom-free with a follow-up visit next day in ENT OPD. On follow-up visit, the child was asymptomatic with no signs of any abnormality.

Discussion

Live insect in the aural canal is not only a distressing experience for the patient but a therapeutic challenge for the physician too. Most of the patients in the rural community seek the services of the nearest family physician or emergency-care doctors, are in extreme agony and distress. Safe removal is a daunting task for the first-level responders not only as the unavailability of proper instruments in the rural areas but as it is technically difficult for the physician due to the limited space and inexperience to maneuver an instrument.

Various techniques to remove aural foreign bodies are available and the choice of selected approach depends on the nature of the foreign body, the clinical scenario, and the physician's experience. Tian-Tee Ng in a recently published article described different approaches of aural foreign body removal, each one with its pros and cons, stressing the treating physician to opt for the most suitable and safer method and instrument prior to the first attempt as to minimize failure rate.[3] The light illumination technique, not mentioned in the published literature, used for our patients could be the first in this regard by which patients can be managed successfully, if the insect is alive, small, and there is no prior intervention such as putting oil, etc., in the affected ear but there is a need for more scientific evidence of the said approach.

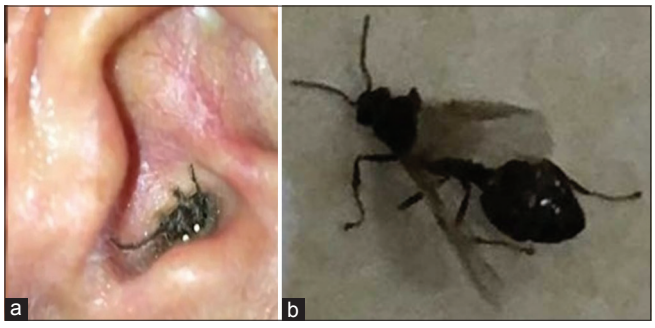

Figure 1: (a) Live insect on-exit from EAC. (b) Secured black-garden ant

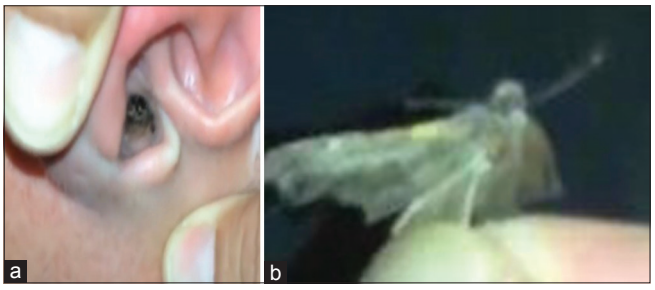

Figure 2: (a) Live insect in EAC. (b) Secured cabbage-white butterfly

Conclusion

Light-assisted approach to remove live-insect foreign body may be a safe noninvasive alternative for the first-level responders such as family physicians, working in the far-flung rural areas and emergency-care physicians where otolaryngologists facility is not readily available.

Declaration of patient consent

Written informed consent was obtained from the first patient and parents of the second patient for the publication of this case and accompanying images.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Antonelli PJ, Ahmadi A, Prevatt A. Insecticidal activity of common reagents for insect foreign bodies of the ear. Laryngoscope 2001;111:15-20.
2. Thompson SK, Wein RO, Dutcher PO. External auditory canal foreign body removal: Management practices and outcomes. Laryngoscope 2003;113:1912-5.
3. Tian-Tee Ng. Aural foreign body removal: There is no one-size-fits-all-method. Open Access Emerg Med 2018; 10: 177-82.