CASE REPORT: AURAL MYIASIS, UNUSUAL CAUSE OF EAR PAIN AND DISCHARGE

Hamzeh Khair MD*, Ahmad Sbaihat MD, Sohib AL Momani MD, Wejdan Shkwrat MD and Mona AL Otoom MD.

*Department of Otolaryngology and Head and Neck Surgery, King Hussien Medical Center, Royal Medical Service.

*Corresponding Author: Hamzeh Khair MD
Department of Otolaryngology and Head and Neck Surgery, King Hussien Medical Center, Royal Medical Service.

ABSTRACT
Myiasis of the ear is an infestation of the ear by maggots (the larval stage of flies). In the literature, there are only few cases reported about aural myiasis. It is more common to occur in tropical regions, where humidity and warm weather provide a good environment for this infestation. In this paper, an 83-year-old male bedridden with history of mastoidectomy many years ago is reported to have unilateral left-sided ear ache and bloody tinged discharge for 1 week duration. Examination of the painful ear showed a tympanic membrane perforation with larvae (maggots) in the middle ear. They were removed by using a forceps and gentle irrigation of ear to expel any remnant. Further management included assessment of hearing, computed tomography (CT) scan, and outpatient follow-up.

KEYWORDS: aural myiasis, chronic suppurative otitis media, mastoidectomy.

1. INTRODUCTION
Myiasis is a common infestation among mammals. In humans, it is seen more in rural areas where people are in more direct contact with animals. The disease occurs when the female fly lays eggs, which shortly will cause clinical manifestations that are related to the body site involved. In the field of otolaryngology, it may affect the ears, nose and paranasal sinuses, nasopharynx, oral cavity, and skin of the head and neck region. Risk factors for myiasis in humans are chronic suppurative otitis media, low socioeconomic status, swimming in stagnant water, and diabetes mellitus. Other possible predisposing factors include neglected children, old age, mental retardation, and poor personal hygiene.

2. CASE REPORT
An 83-year-old male patient, with history of 5 attacks of cerebrovascular attacks (CVA), he is bedridden, looks also neglected with poor hygiene, presented to the emergency department complaining of left ear pain and bloody tinged discharge and maggots coming out from his infected ear as his family said for one week duration. The family bring that elderly man when they witness the blood and maggots coming out from his ear and the patient enable to complain because his old neurological problem and even some ants eat part of his scalp end up with localized alopecia because it was contaminated by some food and dermatologist was consulted about that (Figure 1) .. There was history of purulent, bloody ear discharge, vertigo, no history facial weakness. There was no history suggestive of intracranial involvement. The patient had history of left-sided mastoidectomy long time ago as his family said due to chronic suppurative otitis media. Social history showed that the patient had low socioeconomic status, family lives in a farmer culture, and poor personal hygiene.

General clinical examination, vital signs, and examination of nose, throat, Right ear, head, and neck were all within normal. Inspection of the Left ear externally was unremarkable; there is mild to moderate tenderness with pressure over the tragus or by gentle movement of the auricle. Examination by otoscope and microscope showed mild edema and erythema of the external auditory canal, ear was full with bloody tinged discharge and maggots everywhere in mastoid cavity (post canal wall down mastoidectomy), middle ear through a central perforation of the tympanic membrane (Figure 2-A,2-B and 2-C) and larvae in the middle ear, protruding through the perforation.

Irrigation of the ear with topical ear drops done, a after which more of larvae which were in the attic region and not visible showed up and came out to the external auditory canal through the perforation and were removed using crocodile forceps. Further careful inspection and irrigation were made but did not show any more remnants. After that we do endoscope to post nasal space to find any maggots escape through the pharyngeal opening of Eustachian tube, but no more remnants.
Endoscopic video showing maggots in an infected ear (figure 3).

Figure 1: Alopecia and insulted skin by ants.

Figure 2-A, 2-B and 2-C: endoscopic view of alive larvae's in the patient ear.

Figure 3: Endoscopic video showing maggots in an infected ear.

He was started on mild analgesics and prophylactic antibiotic treatment to prevent possible secondary infections. After 48 hours, reexamination showed improvement of the pain, edema, and erythema and no more larvae in the ear. Clean dry perforation seen in tympanic membrane with dry also mastoid cavity (figure 4).

Figure 2-C

Figures 2-A, 2-B and 2-C: endoscopic view of alive larvae's in the patient ear.

Double click to watch the video.mp4

Figure 4: Clean dry perforation seen in tympanic membrane with dry also mastoid cavity.
The patient underwent audiological assessment ( tympanometry and pure tone audiogram), which showed flat tympanogram big canal volum and sever to profound mixed hearing loss in the involved ear. Also he underwent CT scan to rule out any intracranial involvement, and it showed previous surgery mastoidectomy ossicles mostly eroded no remarkable findings, and intact roof for middle ear and mastoid and no intracranial structures involvement.

After that, an outpatient follow-up was arranged for the patient. After 2 weeks of the discharge, the perforation still dry clean patient kept on antiseptic ear drops combination of (alchol distilled water and boric acid), after 3 months follow up no further discharge or maggots especially after improvement of care and hygiene by family, by giving instructions and education to them.

3. DISCUSSION

Aural myiasis is a rare infestation of the ears. According to a recent published review article, there are about 46 reported cases of aural myiasis.[8] Myiasis can be classified into either obligatory or facultative infestation. In the former, the host, most commonly the goat and sheep, is an obligatory part of the life cycle of the maggots, while in the latter it is not.[5] The female fly is attracted to normal and pathological secretions of the orifices of mammals.[6]

Patients usually present to the hospital complaining of ear pain, hearing loss, purulent or bloody ear discharge, itching in the ear, and/or tinnitus.[7–9] Other possible presentations may include vertigo, facial weakness, and/or neurological manifestations secondary to intracranial involvement. The symptoms start after the deposited larvae start to feed on the surrounding tissues. The infestation is usually diagnosed by history and clinical examination, which will show the larvae in the ear. It is less likely to need further investigations to diagnose it, because the larvae are usually present near the external auditory canal because they need air for breathing.

The treatment for aural myiasis is usually simple in most of the cases, requiring nothing more than removal of the larvae and irrigation of the ear by one or more of the following solutions: alcohol, chloroform, normal saline, oil, ivermectin, or iodine.[7–9] Also, prophylactic broad spectrum antibiotics are usually prescribed to prevent secondary infections.

The larvae should be removed under microscope with careful inspection for any residual. The best choice for irrigation solution is debatable as all of them achieve the same outcome. The goal of the irrigation is usually to kill and expel any residual larvae, mainly the ones not visible or accessible on examination. Surgical exploration is sometimes needed in patients when there is suspicion about the extent of the disease or for residual disease. In these cases, usually mastoid exploration is performed and the extent of the infestation is identified and if any residual is found it will be removed.[10, 11] In the case reported here, there was no suspicion of any residual disease and there were no manifestations that may raise the suspicion of intracranial extension. Also, CT scan showed intact bony landmarks and normal intracranial space, with no suspicion of any residual disease. We suggest that if a patient is going to have surgical exploration, CT scan should be done before. It may obviate the need for the surgical intervention, especially in patients with low suspicion, and if not it will be useful as a preoperative preparation and assessment for surgical landmarks.

Management of these patients should also include hearing assessment to document any change in the hearing level and for future comparison.

Intracranial extension, at least theoretically, is a possible dangerous complication of aural myiasis. A review of the 45 reported cases diagnosed to have aural myiasis did not show any intracranial involvement secondary to an infested ear.[4] Intracranial involvement of patients with aural myiasis must be looked after carefully in all patients, especially in the presence of manifestations that may raise suspicion, for example, clear otorrhea, headache, or seizure.

4. CONCLUSION

In conclusion, aural myiasis is a rare infestation of the ear. It occurs usually in patients with risk factors like chronic suppurative otitis media, low socioeconomic status, neglected children, old age, mental retardation, and poor personal hygiene. The clinical presentation may range from mild ear- ache to manifestation of intracranial extension like seizure. Treatment is usually simple, by removal of the larvae, ear irrigation, and antibiotics to prevent any possible secondary infection.

REFERENCES