

Case Report

A rare case report of aural myiasis in a 24-day old neonate in Tanzania

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ABSTRACT

Aural myiasis refers to the infestation of the ear by the larvae of certain dipterous flies. The disease-producing flies prefer a warm and humid environment and higher incidence occur in tropics and subtropics of Africa and America. Aural myiasis is rare during neonatal life and children with tendencies of poking the ear need immediate review by otorhinolaryngologists for thorough otological review. The objective is thus to report the case of a 24-day old neonate who was diagnosed to have aural myiasis upon otoendoscopy at a private health facility in Tanzania. This is the first reported case of neonatal aural myiasis in our country. Neonates with tendencies to poke ears and with irritability should be handled with care by having immediate Otorhinolaryngologist review to exclude aural pathologies such as aural myiasis. Removal of the maggot, instilling ototopical antibiotics admixed with aural antiseptics, systemic antibiotics and close follow up for meticulous aural toilet remains the main stay in management of aural myiasis.

Keywords: Neonate, Myiasis, Aural, Tanzania

INTRODUCTION

Aural myiasis can be defined as fly larvae feeding on the host's ear. It is a rare condition and occurs most frequently in children and the mentally retarded adults.¹⁻³ The term "myiasis" is derived from the Greek word "myia" meaning fly. The word myiasis was first used by Hope, in 1840 to refer to a parasitic disease caused by certain fly larvae during a particular stage of their life cycle when they feed on dead, necrotic or living animal and human tissues for a certain period of time.³⁻⁷ The geographic distribution of the aural myiasis is almost exclusively limited to hot, tropical areas, and its etiological agent varies from one region to another.⁸⁻¹² Apart from afflicting the ear, there are other parts of the body which may be infested by the diphtheria larvae such as eye, nose, airways, mouth, vulva, penis, brain and urinary bladder.^{5,7,9,10,13,14}

Larval survival in humans requires a specific combination of environmental and clinical conditions. Such conditions have been useful for larval debridement therapy of necrotic tissue.^{2,3,6,11,15-17} However, unintentional infestation may manifest in otorhinolaryngological cavities that are conducive for growth of the larvae, including the external auditory canal and nasal cavities.^{1,6,15,17} Flies are generally attracted to the odor of decaying necrotic tissue, which can arise from chronic otorrhoea or sinusitis.^{12,15} Certain populations are particularly susceptible to infestation, including children younger than 10 years of age and adults with mental or physical disabilities and it also requires a rare combination of environmental, social, and medical risk factors.^{12,15,17} The clinical presentation of aural myiasis remains to be variable and they include maggots in the external auditory canal, otalgia, malodorous otorrhoea, perforation of the tympanic membrane, bleeding,

pruritus, sensation of a moving object in the ear, roaring noise in the ear or tinnitus, vertigo, and impaired hearing. Intracranial involvement through the nose or ear may have grave prognosis.^{1,6,7,11,12,15,17} Although most patients have an uncomplicated course of treatment for aural myiasis, early intervention is key towards avoiding complications involving adjacent structures.^{1-3,6,12,15}

Myiasis in the neonatal period is rare and there are very few reports of neonatal myiasis. Unhygienic conditions in a rural setting predisposes to this condition. Many cases have been reported in adults but very few have been reported in neonates and children. This case is more interesting as a single maggot was extruded from the ear of a 24-day neonate who is from a family of good socioeconomic status residing at the midst of Urban Dar Es Salaam. This is so far the first reported case of neonatal aural myiasis in Tanzania.

CASE REPORT

The 24-day old neonate was received at our private clinic with a 5-days history of irritability and tendency of poking her ear. No history of ear discharge was reported by the mother. Upon otoendoscopy, the baby was found to have a live maggot in the external auditory canal which was successfully removed (Figure 1).



Figure 1: Appearance of the maggot (indicated by the arrow) during removal from the ear.



Figure 2: External auditory canal free of exudates from the maggot after 6 weeks of follow up.

The tympanic membrane was found to be intact though had some whitish exudates in the canal. Thorough aural toilet was done using 3% hydrogen peroxide ear drops

mixed with lignocaine and was then given ototopical drugs containing antibiotics and steroids (neomycin+dexamethasone ear drops) plus boric acid ear drops and systemic antibiotics (cefixime syrup). The baby was followed up closely for 6 weeks and complete resolution was achieved where the external auditory canal was found to be free of exudates (Figure 2).

DISCUSSION

Historically, aural myiasis has presented in patients with poor personal hygiene in tropical environments.^{6,12,15,17} They have a propensity of affecting various parts of the body including the ear. Orbital, aural and nasal myiasis can cause extensive necrosis and tissue destruction and require immediate removal of the infestation.^{6,12,15} Although myiasis is a self-limiting disease (maggots leave their host when they are fully mature), it can be associated with severe and sometimes fatal complications if left untreated in sufferers.^{2,6,11,15,17} Myiasis in the neonatal period is rare and there are very few reports of neonatal myiasis, most commonly from the tropics.^{1,2,6,12,15,17} Most patients belong to the poor socioeconomic strata of society mainly those from rural agricultural areas, dwelling in overcrowded premises that are often unsuitable for habitation and in a fly-infested environment.^{2,12,15,17} It is a pathological condition reported in humans.^{12,15} Humans are accidental or facultative hosts.^{6,11} It is commonly found in summer months.^{1,2,6,7,11,12,15,17} Causative factors are lack of sanitary measure.^{2,6,7,11,12,15,17} The fly may also drop its eggs while in flight on the skin, wounds or natural openings. Larvae hatched from the eggs can affect cutaneous tissue, body cavities and body organs thus may cause multiple organ dysfunction when concomitantly affect various body parts.^{1-4,6,7,11,12,15,17} Hypoesthesia or decreased consciousness, paralysis and immobility are the contributing factors that prevent the patient from fending off the fly.⁶

Available studies have shown children to be more commonly affected and more than 50% of children are less than 5 years and belong to rural background.^{1-4,6,15} In a study which was done by Singh et al, main symptoms in aural myiasis were found to be passage of worms (81.48%), discharge (44.44%), and pain (44.44%).¹⁸ Treatment of aural myiasis requires immediate act. Most reports reveal treatment of aural myiasis to include instillation of few drops of turpentine oil and manual removal of maggots with forceps along with administration of systemic and local antibiotics.^{1-3,6-8,11,15,17,18}

Larvae infestation of the ears and nose are notorious since the larvae may penetrate into the brain, and in these cases the fatality rate is reported to be as remarkable as 8%.¹⁶ Myiasis may also be accompanied by inflammatory reactions and secondary bacterial infections, massive destruction and life-threatening consequences.^{6,16} Our case was unique as a single maggot was found in a

neonate unlike from many other reported cases where multiple maggots were found. This is so far the first reported case of neonatal aural myiasis in Tanzania.

CONCLUSION

Aural myiasis is a rare but benign fly infestation of the ear, most commonly by species of the *Sarcophagidae* family and should be best managed by direct extraction of larvae and administration of suitable ototopical and systemic antibiotics at the earliest convenience to avoid its associated devastating consequences.

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REFERENCES

1. Yazgi H, Uyanik MH, Yoruk O, Aslan I. Aural myiasis by *Wohlfahrtia magnifica*: case report. *Euras J Med*. 2009;41(3):194.
2. Rodríguez-Ruiz MT, Acosta AM, Cifuentes-Cardozo E, Chirveches MA, Rosselli D. Otomyiasis: Systematic Review. *Int Arch Otorhinolaryngol*. 2019;23(01):104-9.
3. Övet G, Tezer MS, Alataş N, Kocacan FN. Aural myiasis in a patient with chronic otitis media. *Turk Arch Otolaryngol*. 2012;50:5-7.
4. Bhoria M, Duarah B. Recurrent aural myiasis: A palliative care through maxillofacial silicone prosthesis for mastoidectomy cavity : a case report. 2017;4(4):1-3.
5. AIR B, AIT H, Tonnsi A, Almatary A, Hassanein R. Cutaneous myiasis in a child scalp caused by *Wohlfahrtia magnifica* (Diptera: *Sarcophagidae*): a case report. *MOJ Clin Med Case Rep*. 2016;4(3):00093.
6. Kamble BB, Jain S, Gupta M, Singh P. A rare case of neonatal aural myiasis in a 17 days old neonate. *Online J Health Allied Sci*. 2015;14(1).
7. Adhikari P, Sinha BK, Bhattarai H, Shrivastav RP. Myiasis infestation in postoperative mastoid cavity. *Nepal Med Coll J*. 2007;9(4):284-5.
8. Jervis-Bardy J, Fitzpatrick N, Masood A, Crossland G, Patel H. Myiasis of the ear: a review with entomological aspects for the otolaryngologist. *Annals Otol Rhinol Laryngol*. 2015;124(5):345-50.
9. Hasegawa S, Miwata H, Masuda S, Naruse H, Ozaki T. An infantile case of intestinal myiasis. *Pediatr Int*. 1992;34(1):87-9.
10. Aydin E, Uysal S, Akkuzu B, Can F. Nasal myiasis by fruit fly larvae: a case report. *Europ Arch Oto-Rhino-Laryngol Head Neck*. 2006;263(12):1142-3.
11. Akduman D, Arslan MO, Gul S. A case of otomyiasis in a child with chronic otitis media. *Int J Pediatr Otorhinolaryngol Extra*. 2011;6(3):116-8.
12. Atmaca S, Cengel S, Gumussoy M, Kutlar G, Acici M, Hokelek M. Counting larvae in a farmer's ear. *J Int Advan Otol*. 2009;5(1):118-21
13. Dutto M, Bertero M. Traumatic myiasis from *Sarcophaga* in a hospital environment: reporting of a clinical case following polytrauma. *Journal of preventive medicine and hygiene*. 2010 Mar 1;51(1).
14. Chigusa Y, Tanaka K, Yokoi H, Matsuda H, Sasaki Y, Ikadatsu Y, Baba K. Two cases of otomyiasis caused by *Sarcophaga peregrina* and *S. similis*. *Med Entomol Zool*. 1994;45(2):153-7.
15. Hatten K, Gulleth Y, Meyer T, Eisenman DJ. Myiasis of the external and middle ear. *Annals Otol Rhinol Laryngol*. 2010;119(7):436-8.
16. Çetinkaya M, Ozkan H, Kolsal N, Coskun SZ, Hacimustafaoglu M, Girisgin O. Neonatal myiasis: a case report. *Turk J Pediatr*. 2008;50(6):581.
17. Yuca K, Caksen H, Sakin YF, Yuca SA, Kiris M, Yilmaz H, Çankaya H. Aural myiasis in children and literature review. *Tohoku J Experiment Med*. 2005;206(2):125-30.
18. Singh I, Gathwala G, Yadav SP, Wig U, Jakhar KK. Myiasis in children: the Indian perspective. *Int J Pediatr Otorhinolaryngol*. 1993;25(1-3):127-31.

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