



Orbital myiasis caused by green bottle fly

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CASE REPORT

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Abstract

An 80-year-old farmer, presented with large, maggot infested ulceration involving the medial part of the right upper lid. The left eye was phthisical. There was history of untreated traumatic laceration of the right upper lid. Mechanical removal of maggots was done under turpentine coverage with regular antibiotic dressing. Microbiological examination of maggots revealed the larvae to be of *Lucilia sericata* (green bottle fly). The ulceration completely healed in two weeks following manual removal of maggots and regular dressing. Orbital myiasis is an uncommon clinical condition, with isolated case reports in literature.

Key Words

Green bottle fly, *Lucilia sericata*, maggots, orbital myiasis.

Implications for Practice

- **What is known about such cases?** Orbital myiasis is an uncommon clinical condition, with isolated literature case reports and to the best of our knowledge, none caused by green bottle fly.
- **What is the key finding reported in this case report?** Green bottle fly larvae infestation should be considered in the differential diagnosis of wound myiasis affecting the orbital tissues.

- **What are the implications for future practice?** Mechanical removal of larvae is an effective treatment modality for orbital myiasis. Prompt and early intervention can help avoid the sight-threatening complications of ophthalmomyiasis.
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Background

Myiasis is an invasion of living animal tissue by fly larvae (maggots). 'Ocular myiasis' or 'ophthalmomyiasis' is the term used when larvae invade the eye or its adnexa. Ocular myiasis is divided into orbital, internal or external, based on site of larval infestation. In external ophthalmomyiasis larvae attack the conjunctiva, in internal ophthalmomyiasis the globe is invaded, and in orbital myiasis the orbit adnexal tissue is affected. We present a rare case of human orbital myiasis by green bottle fly in a farmer from rural India following a right upper lid injury. Cases of orbital infestation by various other parasites have been documented earlier, but apparently none caused by green bottle fly has been recorded.^{1,2,3}

Case details

An 80-year-old farmer, presented with a complaint of severe pain and swelling of right upper lid for three days (Figure 1). The patient reported that he had sustained accidental injury to the right upper lid, about 10 days earlier. He did not take any treatment for the same. The patient was from a rural background and was in close contact with domesticated animals like cows and sheep.

The right eyelid was erythematous with marked oedema and induration. On examination, there was a large, maggot-infested ulceration involving the medial part of the right upper lid (Figure 2). The ulcer was ridden with numerous maggots, some of which were present in multiple pockets deep into the lids and orbital tissue. On retracting the skin overhanging the edge of the ulcer, maggots could be seen swarming through the opening at the base of the ulcer.

There was severe congestion and discharge in the conjunctiva of the right eye but the eyeball was intact. The

left eye was phthisical subsequent to some trauma in childhood. Lab investigations and X-ray orbits were normal.

The larvae were manually removed from the superficial tissues with forceps after immobilising them by applying four per cent xylocaine (Figure 3). Following this, turpentine oil painting was done because of which the maggots came out of the deeper tissues and could be removed easily. The patient was admitted to hospital, turpentine painting and manual removal was done twice daily for a few days.

Figure 1: Swollen erythematous upper lid with wound in the right eye and phthisical left eye



Figure 2: Right upper lid wound with multiple maggots



Figure 3: Manual removal of maggots with forceps



The larvae were creamy white, cylindrical, 8-12mm in size with tapering posterior end and broad anteriorly toward the head that carried a pair of hooks (Figure 4). Recovered larvae were fixed in 70 per cent ethyl alcohol and sent to our microbiology department for identification (Figure 5). Microscopic examination of the spiracles and the anterior hooks revealed that these larvae represent second and third instar larvae of the common green bottle fly, *Lucilia sericata*.

Sterile dressings were applied daily and systemic antibiotics were given along with analgesics. The wound healed completely over the following two weeks (Figure 6). The patient was followed up for six months and had no further complaints.

Figure 4: Larvae removed from the wound



Figure 5: Larvae fixed in alcohol and mounted on a slide



Figure 6: Fully healed right upper lid wound after two weeks of treatment





Discussion

Ophthalmomyiasis is usually caused by larvae of the sheep nose botfly (*Oestrus ovis*), less commonly by the human botfly (*Dermatobia hominis*), and rarely by the cattle botfly (*Hypoderma bovis*).³ Infestation with greenbottle fly (*Lucilia sericata*) is very rare. The flies themselves do not parasitise the host. They lay eggs in open wounds, necrotic or decaying tissue and corpses, especially in animals like sheep. Man is thus an accidental host, and trauma is an important risk factor.⁴ Although maggot infestations are common in the tropics, only between 5 and 14 per cent of all cases involve the ocular tissues, and most ophthalmologists have little experience with this condition.⁵ Our patient presented with a recent lid injury and poor hygiene. Orbital myiasis tends to endanger the globe and may extend into neighbouring areas, such as the paranasal sinuses or the intracranial cavity.⁶ Orbital myiasis proceeding to globe invasion may entail removal of the globe, while erosion into surrounding structures may necessitate orbital exenteration. Our patient escaped this terrible fate but was leading to it if appropriate action had not been taken at the proper time.

Management of orbital myiasis may range from simple manual removal of the maggots to destructive surgeries of the globe and orbit. With the advent of the broad-spectrum antiparasitic drug, ivermectin, there is now a safe and noninvasive means of tackling maggots, especially those buried deep in the orbital tissues.⁴

The present case highlights two important things. First, it creates awareness among ophthalmologists regarding green bottle fly larvae being one of the causative parasites of orbital myiasis. It is especially significant in developing countries like India where the general standard of hygiene is poor and there are a large number of flies in rural areas. Second, the simple method of manual removal of maggots after turpentine painting along with frequent dressing is a cost effective and safe management approach for orbital myiasis.

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PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

PATIENT CONSENT

The authors, Neeta Misra, Pratik Gogri, Somen Misra, Anil Singh and Ashish Ingale declare that:

1. They have obtained written, informed consent for the publication of the details relating to the patient(s) in this report.
2. All possible steps have been taken to safeguard the identity of the patient(s).
3. This submission is compliant with the requirements of local research ethics committees.