

## Ocular Myiasis in a Nigerian adolescent: A case report

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### Summary

Ocular myiasis is a rare condition with varying consequences, from mild to life threatening condition. This case of ocular myiasis is presented to highlight the challenges in making a clinical diagnosis. The study is a case report of a 16-year old female pupil who presented with five months history of “extrusion of worms” from her left eye. An initial assessment of loasis was made until she brought a sample of what she called “worms.” Laboratory examination of the specimen using a magnifying glass revealed a larva. The girl was treated conservatively with a combination of topical antibiotic and topical non-steroidal anti-inflammatory drugs after trimming the eyelashes. On immediate follow up, the girl had no residual visual challenges. Although ocular myiasis is rare, a high index of clinical suspicion is required and myiasis should be considered a differential diagnosis of loasis.

**Key words:** *Conjunctivitis, Loasis, Myiasis, Ocular parasitism*

### Introduction

Myiasis is the invasion of organs and tissues of humans or other vertebrate animals by the larvae (Maggots) of dipterous (two-winged) flies. It affects different parts of the body and may present as cutaneous myiasis, urogenital myiasis, nasopharyngeal myiasis, ocular myiasis and intestinal myiasis. The occurrence and the site of invasion varies with the sanitary conditions, environmental factors and presence of devitalized tissue.

Although, ocular myiasis or ophthalmomyiasis is rare, it occurs more commonly among people who live in farmlands and rural areas.<sup>[1]</sup> Ocular involvement in human myiasis is less than 5%.<sup>[2]</sup>

There are three forms of ocular myiasis: ophthalmomyiasis externa which involves the eyelid, conjunctiva and lacrimal apparatus; ophthalmomyiasis interna when it penetrates the globe and the larva can be seen in the vitreous and subretinal space and orbital ophthalmomyiasis.<sup>[3-5]</sup>

The most common of these various types is ophthalmomyiasis externa which usually presents as conjunctivitis simulating allergic conjunctivitis or viral conjunctivitis.<sup>[6]</sup>

Three families of flies have been implicated in myiasis - the *Calliphoridae* (e.g. *Chrysomia*), the *Sarcophagidae* (e.g. *Chocomyia*) and *Oestridae* (e.g. *Oestrus*).<sup>[7]</sup> These flies cause facultative myiasis.<sup>[7]</sup>

The most common is *Oestrus ovis*. Ophthalmolmyiasis has been reported in parts of Africa<sup>[3, 7]</sup> such as Libya, South Africa, Botswana and Morocco.<sup>[8]</sup>

A high index of suspicion is necessary to make diagnosis and prevent major complications since myiasis usually simulates other ocular diseases. We hereby report a case of ophthalmomyiasis externa in a female adolescent in Sagamu, southwest Nigeria. To the best of the authors' knowledge, this is the first case of ocular myiasis seen at the Olabisi Onabanjo University Teaching Hospital, Sagamu.

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## Case Description

A 16-year old female Senior Secondary School student presented with five months history of extrusion of worms from her left eye. Each worm was described as whitish in colour and wriggling. There was associated itching, painful lid swelling and redness of the affected eye following the removal of the worm. As at presentation, she had removed about eight worms. There was no history of swimming or contact with flowing river, and no history of contact with farm animals. She had history of poor distant vision in both eyes from childhood but she had no spectacle or medications for that purpose.

She lived in a three bedroom apartment with her family members. There was no history of similar health problems in other family members. There was no history of recent travels.

Examination of the eyes revealed a visual acuity of 6/60 and CF at 0.5m in the right and left eye respectively both of which improved to 6/36 and CF at 3m with pin hole. The anterior and posterior segments were essentially normal except for conjunctiva injection. A-1.25DS lenses corrected her vision to 6/5 in each eye. The initial impression was myopia and suspected Loasis. However, blood film microscopy for microfilaria was negative. Spectacle was prescribed and patient was placed on diclofenac eye drops as a non-steroidal anti-inflammatory drug.

Four weeks later, the patient returned to the clinic with a specimen of the worm she removed from the eye a day before the visit. This was sent to the Medical Microbiology and Parasitology Laboratory of the Obafemi Awolowo College of Health Sciences, for the identification of the worm specimen. The worm specimen was identified as a larva using a magnifying glass but a more definitive identification could not be done due to lack of the appropriate facilities. Unfortunately, the larva was mistakenly decapitated during processing (Figure 1)

The patient's eye lashes were trimmed after applying Chloramphenicol eye ointment for about five minutes to suffocate any larvae that might still be harboured by the lashes. The lid margin was cleansed with povidone-iodine and she was asked to continue with Chloramphenicol eye ointment to report for follow up a week after. On immediate follow up, she had no further complaints but she subsequently defaulted from the clinic and has not reported for more than one year now.

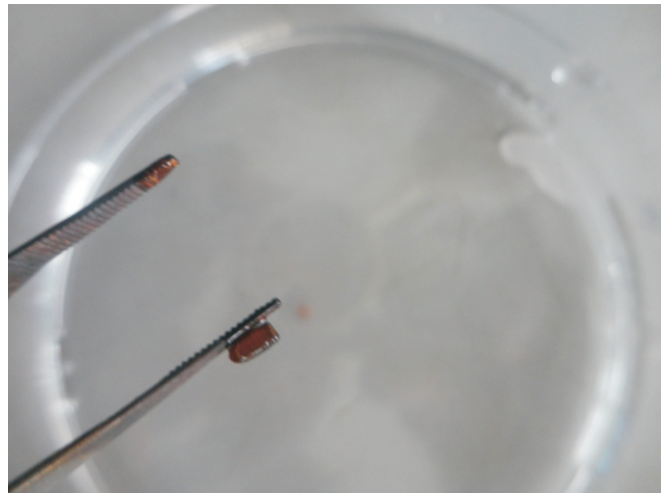


Figure 1: Larva specimen under processing in the laboratory

## Discussion

Ocular myiasis or ophthalmomyiasis is an uncommon condition worldwide. Though cases of cutaneous myiasis and aural myiasis have been reported in Nigeria,<sup>[8,10]</sup> we are not aware of any case of ocular myiasis yet reported. This could be due to its rare occurrence; it is also possible that some cases might have been misdiagnosed as reported by Akdemir *et al*<sup>[11]</sup> where the first case was misdiagnosed as bacterial conjunctivitis.

Ophthalmomyiasis externa often simulates allergic and viral conjunctivitis, as it presents with itching, watering, pain and redness like in the index patient and similar to previous reports.<sup>[3,4,6,8]</sup>

The only differentiating factor from conjunctivitis is usually history of worm moving across the eye and removed manually as in the index case. Worms are also found in the eye in cases of Loasis when blood film studies may be used to confirm the diagnosis. Blood film for microfilaria was negative in the index case.

It is possible that the patient did not notice a fly on her eye laying eggs as it was previously reported<sup>[12, 13]</sup> or better still, there could be a focus point elsewhere. There was a previous report of a baby with an ulcer at the back of the head which allowed contact with flies and who later developed ophthalmomyiasis externa.<sup>[14]</sup> It is important that an early and accurate diagnosis is made to forestall ocular complications. The larva could migrate from the conjunctiva to penetrate the globe or orbit of the eye leading to more severe ocular complications that can result in severe vision loss.<sup>[13, 15]</sup> Fortunately, the index case did not manifest any complications beside mild conjunctivitis.

The most common agents causing

ophthalmomyiasis externa are *Oestrus ovis* (sheep botfly) and *Dermatobia hominis* (human botfly).<sup>[15]</sup> These are most commonly found in livestock hence, people taking care of livestock are more predisposed to myiasis. Considering the socioeconomic status of the family (by virtue of living in a three-bedroom flat apartment), contact with livestock may be unlikely. However, myiasis has also been reported in patients who had no known history of exposure to farm animals or rural areas like our patient.<sup>[4]</sup> Identification of the larvae is usually done macroscopically with magnifying lens but it is best done using electron microscope where the segments, spines and spiracles of the larva are studied for characterization. Unfortunately, such facilities were not available at the time of managing the case.

The recommended treatment modalities include suffocation of the larvae with oils e.g. ointments, use of anti-inflammatory drugs like steroids or non steroidal agents and manual removal of the larvae from the conjunctiva and vitreous.<sup>[13]</sup> Ivermectin has been reported to be useful in the treatment<sup>[16]</sup> though its efficacy has not been proven as only one case of ophthalmomyiasis externa has been treated with it.

## Conclusion

Ophthalmomyiasis externa should be considered as a differential diagnosis of conjunctivitis and a high index of suspicion is necessary for early diagnosis to prevent major complications.

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