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## Case Report

# Ophthalmomyiasis secondary to infected scleral buckle

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### ABSTRACT

**Purpose:** Ophthalmomyiasis is an infestation of human eye with dipterous fly larvae. Oestrus ovis is the most common cause of human myiasis. However to the best of our knowledge there is no documented case report regarding maggots infestation secondary to infected scleral buckle. Hence, we report a rare case of ophthalmomyiasis being affected due to infected scleral buckle.

**Case Description:** A 68 years old female, presented with acute symptoms of severe pain, watering, pricking sensation of her right eye since 10 days and foul smelling blood stained discharge since 1 day mimicking an unilateral external ocular foreign body. Patient is shepherd by occupation since 20 years. On examination a circumferentially anteriorly displaced exposed infected solid scleral buckle explant was noted. Prompt diagnosis, mechanical removal of buckle and sixty live larvae from the right eye under topical anaesthesia were removed. Investigations like X-ray orbit, DNE and imprint cytology were done. Symptomatic treatment as well as a dose of ivermectin 9 mg tablet was given. Patient was advised maintenance of good personal hygiene and regular follow ups.

**Results:** A case of Ophthalmomyiasis secondary to infected scleral buckle detected incidentally was thoroughly investigated and followed up.

**Conclusion:** Special care and attention should be given to the medically and physically compromised patients. Accurate understanding and management of such cases are important to avert complications such as internal Ophthalmomyiasis.

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## 1. Introduction

The invasion of living and dead animal tissue by dipterous fly larvae is known as myiasis.<sup>1</sup> Human myiasis affects mainly individuals in rural areas especially those who come in contact with animals such as sheep as in shepherds and farmers. Keyt in 1900 first reported human ophthalmomyiasis and later in 1910 by Elliot.<sup>2</sup> It's seen commonly in tropical regions in countries with poor hygiene. It's seen commonly in tropical regions in countries with poor hygiene, inadequate living conditions, and warm weather. Prevalence of Ophthalmomyiasis is 5% or less of all cases of myiasis.<sup>3</sup> Oestrus ovis is the most common organism in man, apart from these other fly species of

genera Calliphora, Chrysomyia, Hypoderma, Oedemagena are also known to cause ophthalmomyiasis in humans.<sup>4</sup>

Ophthalmomyiasis can occur in three forms: External, internal, and orbital.<sup>5</sup> External ophthalmomyiasis is when the larvae deposit on the ocular surface. When the larvae penetrate it can be seen in the vitreous cavity or subretinal space it is known as internal ophthalmomyiasis. Among the three entities the third, Orbital is in which the larvae make their way to the orbital structures and is the most damaging type.<sup>6</sup>

In our case report we report a rare case of Ophthalmomyiasis externa secondary to infected scleral buckle, thoroughly investigated and followed up. As per literature there is no such case being reported which makes our report a unique one.

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## 2. Case Report

We report a case of 68 years old female, shepherd by occupation since 20 years with poor personal hygiene. Presenting with chief complaints of severe pain, Watering, Pricking sensation of her right eye since 10 days, foul smelling blood stained discharge since 1 day. She gives a past history of retinal surgery 30 years back with no records presently. There was post-operatively no visual improvement. She had neither history of trauma nor any systemic infestations. Patient gives similar history of pain and watering 2 years back for which she had got sympathomatic treatment. Local examination showed periorbital edema and matting of eyelashes. On examining further a scleral buckle explant which was anteriorly displaced was noted circumferentially. [Figure 1] Infected scleral buckle was cut from the both sides and manually removed. Eye was found to be pthysical. Conjunctiva appeared to be markedly congested with necrotic debris [Figure 2] other eye was found to be normal.

Antibiotic eye drops and ointment were applied, eye was patched. On removal of patch on day 1 the most remarkable finding was the presence of white tiny worm like organisms crawling over the conjunctiva and cornea. These were seen about 1.5 mm × 1.5 mm in size and whitish in colour. The larvae had following characteristic features like translucent body which was segmented, and cephalopharyngeal skeleton with pair of curved, oral hooklets indicative of *Oestrus ovis* [Figure 3]. Turpentine oil packing was done. Under local anesthesia using 4% xylocaine 60 maggots were removed [Figure 4]. Debridement of necrotic debris was done. Regular dressing of the wound was done with thorough washing.

Investigations like X ray orbit showed normal findings with no bony erosions except for soft tissue swelling. Nasal involvement was ruled out, DNE turned out to be normal. Scrape imprint cytology was done showed acute inflammatory lesion.

The patient was treated with intravenous ciprofloxacin 500mg (12 hourly), Tablet diclofenac and serratiopeptidase (twice daily for 3 days), Oral ciprofloxacin (twice daily for 5 days) and a single dose of ivermectin. Local applications of ocupol eye ointment and eye drops to the right eye for 1 week were instructed.

Patient was advised maintenance of good personal hygiene and regular follow ups.

## 3. Discussion

The Myiasis is derived from Greek myia ( $\mu\nu\alpha$ ) meaning "fly". It is an infestation caused by dipterous fly larvae on live human or vertebrate animals, which survive on living or dead tissues. Factors contributing to human infestation include factors as poor personal hygienic conditions, debilitating diseases such as immunocompromised states



**Fig. 1:** Patient on presentation showing scleral buckle



**Fig. 2:** After removal of scleral buckle



**Fig. 3:** Maggots removed in saline



**Fig. 4:** Removal of Maggots

like malignancies, chronic infections and HIV infection.

The treatment of external ophthalmomyiasis includes removal of larvae mechanically.<sup>7</sup> A various procedures have been suggested for the maggots removal, such use of turpentine oil as in our case. Apart from it betadine and liquid paraffin can also be used. Another alternatives are the removal of maggots manually or debridement of the tissue surgically. Treatment of ophthalmomyiasis with Ivermectin is also been reported.<sup>8</sup> Ivermectin is extracted from *Streptomyces avermitilis* causing tonic paralysis of gabaergic transmission.<sup>9</sup>

From the past 60 years scleral bulking had been a surgical method for the treatment of retinal detachment. In the new era pars plana vitrectomy has become well known, but in a rhegmatogenous retinal detachment there are many indications for scleral buckling. Buckle infection is most common indication for removal of a scleral buckle. The incidence of buckle exposure after scleral buckling is about 0.2–5.56%.<sup>10</sup>

To avoid the possible complication of internal ophthalmomyiasis patient should be advised regular follow-up. Early larvae's growth can often be extracted from the eye with fine forceps. It is important to prevent the larva from remaining in the tissue cavity as it will produce an undesirable inflammatory response, or a bacterial infection. Antibiotics as given in our case and topical corticosteroids further prevent secondary bacterial infection and reduce inflammation.

Facilities for basic sanitation, maintenance of neat surroundings, good hygiene and health education are very crucial for preventing myiasis.

#### 4. Conclusions

Reporting a rare case of external Ophthalmomyiasis suggestive of *Oestrus ovis* caused secondary to infected scleral buckle. Special care and attention should be given to the medically and physically compromised patients. It is also essential to know about the possibility of infected scleral buckle leading to Ophthalmomyiasis.

#### 5. Conflicts of Interest

All contributing authors declare no conflicts of interest.

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None.

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