Fulminant Orbital Myiasis - A Rare Case Report from Central India

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INTRODUCTION

A 42 year old male farmer presented to eye OPD with a history of painful, foul smelling discharging wound over the lower lid along the inferior orbital margin since two weeks and crawling sensation over the wound with diminution of vision right eye since three days. He gave history of trauma to right eye after falling on sharp edge of stone one month back when he was in a drunken state due to which he had a lacerated wound of about 5cm x 2 cm x 2cm along inferior orbital margin.

The wound was cleaned and dressed only once at a local hospital, however, he neglected the wound and didn’t open the dressing for about 15 days until he noticed a crawling sensation and maggots teeming from the wound. He denied a history of diabetes mellitus, hypertension or any other chronic systemic disease or any prolonged use of medications, progressive loss of weight or appetite. However, he was a chronic alcoholic. He belonged to low socioeconomic strata with poor personal hygiene and was residing in a rural area.

On presentation, the patient was in agony due to pain. On examination of the right eye, the eyelids were severely oedematous and indurated with severe mechanical ptosis. The lower lid along the inferior orbital rim had a deep open, macerated wound of size about 5cm x 2cm x 2cm, filled with necrotic tissue (slough), discharge and around 5-6 maggots were seen teeming from the wound [Fig. 1]. The skin around the wound was red and friable. On separating the lids gently and mechanically, the conjunctiva was severely congested and chemosed. Unaided visual acuity was 3/60; best-corrected visual acuity could not be assessed as the patient was in agony due to pain. The cornea, anterior chamber and iris were normal. The pupil was normal-sized reacting to light. The eyeball had deviated inwards and ocular movements were painful and restricted in all directions. Lens had immature senile cataract. Intraocular pressure and nasolacrimal passage could not be assessed because of gross lid oedema. Fundus examination of the right eye was within normal limits. On examination of the left eye, unaided visual acuity was 6/18 and best-corrected visual acuity was 6/9. Anterior segment was within normal limits with pupil normally reacting to light and fundus examination was normal.

Five to six superficially lying maggots were removed with the help of turpentine oil and forceps after adequate local anaesthesia. Many more deep-seated maggots were seen but were difficult to remove.
CLINICAL DIAGNOSIS

Based on the above findings, a clinical diagnosis of orbital myiasis in an infected skin wound along the inferior orbital margin of the right eye was made.

DIFFERENTIAL DIAGNOSIS

1. Orbital Cellulitis with a secondary bacterial infection.
2. Preseptal cellulitis.

PATHOLOGICAL DISCUSSION

Infestation of the living tissues of the eye, ocular adnexa or orbit by larvae of flies of the Diptera order is known as Ophthalmomyiasis. Common sites of myiasis are arms, legs, and other parts of the body, involvement of orbit being very rare. Ophthalmomyiasis is uncommon, representing less than 5% of all human myiasis sites.[1] Orbital myiasis can mimic preseptal cellulitis.[1] The severity of ophthalmomyiasis may range from simple irritation to complete destruction of the orbit, blindness and even death.[2,3]

Predisposing factors are elderly age, damaged ocular or periocular mucosal barrier, immunocompromised status, chronic debilitating conditions such as diabetes mellitus, fungating carcinomas, psychiatric illness, intellectual disability, hemiplegia, and neglect of open wounds, use of immunosuppressive agents, poverty, rural background.[4-5] Sachdeva MS et al.[6] 1990 first reported a case of destructive myiasis in an immunocompetent individual.

DISCUSSION OF MANAGEMENT

The Computed Tomography (CT) [Fig. 2] showed soft tissue swelling in the right lateral extraconal compartment and preseptal region of the right orbit with the involvement of extraocular muscles. The nose, paranasal sinuses and central nervous system were not involved in CT imaging. Blood sugar levels were within normal limits and HIV and HBsAg tests were negative.

The patient was treated with intravenous antibiotics, anti-inflammatory and antacid drugs. Five to six superficially lying maggots were removed from the wound with the help of turpentine oil, hydrogen peroxide and forceps after giving adequate local anaesthesia in minor OT. Many more deep seated maggots were seen but were difficult to remove in same sitting. They were removed daily in a span of three days. The maggots were sent for entomological identification. On entomological examination, the larvae were identified as Oestrus ovis. Sterile dressings were given twice a day.

Wound debridement was done under local anaesthesia to remove the necrotic tissue from the wound. Before each maggot retrieving session, the wound was packed with gauze...
soaked in betadine, hydrogen peroxide and turpentine oil taking utmost care to avoid spillage into the eye.

The affected eye was thoroughly irrigated and antibiotic eye ointment and ocular lubricant were applied following each maggot retrieving session. ENT consultation was done which revealed no evidence of maggots in the nasal cavity and paranasal sinuses. Over one week, the patient's general condition improved, inflammation settled and the wound cavity healed with healthy granulation tissue.

On discharge, there were no maggots in the wound. Oedema of lids and surrounding skin decreased showing improvement in ptosis [Fig. 3]. The patient's best-corrected visual acuity in the right eye was 6/24. The pupil was normal and reacting to light, the lens had immature senile cataract and ocular movements were full and free in all directions. The left eye's best-corrected visual acuity was 6/6.

Manual removal of maggots under local anaesthesia remains the main line of treatment. Maggots have photoreceptors on the anterior end of the larvae, helping them bury deeper into the tissues on exposure to light (Negative Phototaxis) and maggots also have hooks with which larvae remain firmly adhered to the tissue causing incomplete removal even after its paralysis further leading to granulomatous inflammation and calcification.[7] Due to negative phototaxis and chances of incomplete removal, it becomes crucial to immobilise and suffocate the maggots by using topical anaesthesia and various suffocating agents like liquid paraffin, turpentine oil, petroleum jelly, beeswax before attempting the manual removal.[5] It may not be possible to manually remove all the live maggots in one sitting as the smaller larvae might be missed, some larvae might penetrate deeper in the tissue on exposure to light, as flies lay the eggs in batches and hence hatching also occurs in batches, it becomes mandatory to remove the maggots on multiple occasions till the wound is maggot free.

Using of larvicidal agents like hydrogen peroxide and isopropyl alcohol is also helpful. It is important to administer systemic and topical antibiotics to avoid secondary infections and to halt the further spread of bacterial infection.

**FINAL DIAGNOSIS**

Fulminant Orbital Myiasis.

**REFERENCES**