

OPHTHALMOMYIASIS: A RARE CAUSE OF SHORT DURATION PRE-SEPTAL CELLULITIS IN A HEALTHY NON-COMPROMISED ADULT

Dear Sir,

Ocular involvement accounts for about 5% of all cases of myiasis. Ophthalmomyiasis has been almost exclusively found in debilitated and emaciated patients. Rural agricultural areas, crowded conditions and poor personal hygiene are other predisposing factors.⁽¹⁾ We report a case of ophthalmomyiasis in a healthy and non-compromised adult host within four days of minimal trauma.

A 50-year-old man from an urban lower-middle class manual worker background in India, presented with a history of trauma due to a roadside accident, with pain and right lower eye lid swelling of four days duration. There was a pre-septal cellulitis and a 0.5 cm long ulcer in the right lower lid near the orbital rim. The lower lid showed an indurated mass 3 cm × 1 cm extending from the ulcer. The patient reported having received oral antibiotic treatment consisting of Amoxicillin plus Cloxacillin 500 mg tds (Novaclox[®], Cipla Pharmaceuticals, Mumbai India) and local antibiotic drops [Ciprofloxacin eye drops 0.3 mg w/v (Joxin[®], Jawa Pharmaceuticals, Gurgaon, India)] elsewhere, but the treatment gave no relief. Two days after the trauma, he developed a swelling over the right lower lid. The clot resolved, and an ulcer with blood-stained discharge was formed the next day. Maggots were observed crawling in the ulcer bed. There was no history of any systemic disease.

On further examination, maggots were seen in the centre of the ulcerated area. Investigations revealed a normal haemogram, blood glucose, glycosylated haemoglobin, protein and electrolyte profiles. Routine urine examination tested negative for albumin and sugar-reducing agent. Microscopical examination of urine was also normal. Radiographs of the skull, orbit, paranasal sinuses and the chest showed no abnormality. HIV serology was also negative. There were no signs of malnutrition or emaciation. A diagnosis of external ophthalmomyiasis of the right eye in a healthy and non-compromised adult host was made (Fig. 1). Manual removal of the maggots was undertaken. Infiltration of anaesthesia was given with 2% Xylocaine. Turpentine oil was used to suffocate the maggots. A total of nine maggots were removed. Two more larvae were seen on the dressing the next day. The



Fig. 1 Photographs show ophthalmomyiasis manifesting as a short duration pre-septal cellulitis in a healthy non-compromised adult.

patient was given one dose of ivermectin 6 mg and albendazole 400 mg (Bandy Plus®, Madras Pharmaceuticals, Chennai, India), and prophylactic antibiotic cover was extended for five more days. The patient improved after five days of therapy and was clinically normal at two weeks follow-up (Fig. 2).

Myiasis is the infestation of human tissue by the larvae of a fly of the Diptera order. More than 85,000 Diptera species are known to exist. The first case of ophthalmomyiasis was reported by Keyt in 1900.⁽²⁾ Ocular myiasis can be classified as internal, external or orbital. The most common aetiological species are *Oestrus ovis*, *Cuterebra*, *Dermatobia hominis*, *Hipoderma bovi*, *Chrysomya* and *Cordylobia*. *Cordylobia* maggots are fast growing and have burrowing habits. *Dermatobia hominis* is the most common cause of cutaneous myiasis.⁽³⁾ The female lays the eggs on the skin or mucosa. They hatch, on stimulation by heat, into larvae that measure about 1.5 mm and penetrate the skin or mucosa in a few minutes. The larva burrows, with its anterior spiracle, into the ulcer to allow for feeding, while the caudal respiratory spiracle remains positioned outside of the ulcer. They can invade the conjunctiva and ocular bulb, provoking conjunctivitis, corneal ulcer and destruction of the ocular bulb, eyelids and orbit, since it feeds on the surrounding tissues. After about ten weeks, the larva falls onto the ground and pupates, and finally transforms into an adult fly.⁽⁴⁾

Myiasis is seen in necrotic, chronically inflamed and suppurated tissue. The foetid smell emanating from the tissue attracts flies to lay their eggs. Myiasis is unlikely to develop on healthy tissue of normal healthy individuals. Mechanical removal of maggots is an important step in the management of myiasis.⁽⁵⁾ Ether has been used to narcotise the larvae, while turpentine oil is used for suffocation of the maggots.⁽⁶⁾ Practices like covering the wound with oily substances,⁽⁷⁾ e.g. Vaseline, should be avoided because the larva remains in-situ, dying and causing foreign body granuloma, which may further aggravate inflammation or progress to calcification. All the maggots could not be removed in one sitting as they had burrowed deep into the adnexal structures. Mechanical extirpation of the maggots, along with proper hygiene, helps to heal the wound completely. In recent times, ivermectin has been used for myiasis with gratifying results.⁽⁸⁾

Destructive ocular myiasis is usually seen in debilitated and emaciated patients. In extreme cases, loss of the eyeball has been reported.⁽⁵⁾ In one case, old neglected trauma has been associated with ophthalmomyiasis in a debilitated 70-year-old male.⁽⁹⁾ Age and nutritional status were not possible risk factors in the present case. Usually, myiasis develops weeks after the primary insult. However, in this case, it occurred within four days of the injury. This case highlights the possibility of ophthalmomyiasis occurring in a healthy and non-compromised host. Although uncommon, ophthalmomyiasis should be considered as a possible differential diagnosis for any pre-septal cellulitis refractory to conventional treatment, even in healthy non-compromised adults with a short duration of injury history.

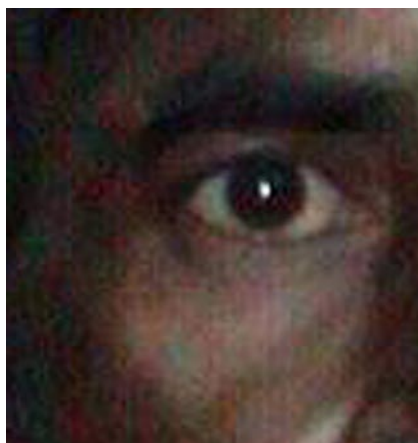


Fig. 2 Post-treatment photograph shows healing of the infected area.

Yours faithfully,

Jatinder Bali
Y K Gupta
Bithi Chowdhury
Binnoo Nayyar
M M Gupta

Hindu Rao Hospital
Delhi 110006
India

Renu Thakur

Department of Medicine
Shastri Park Hospital
Government of National Capital Territory of Delhi
Delhi
India

REFERENCES

1. Wilhelmus K. Myiasis palpebrarum. *Am J Ophthalmol* 1986; 101:496-8.
2. Sivaramasubramanyam P, Sadanand AV. Ophthalmomyiasis. *Br J Ophthalmol* 1968; 52:64-5.
3. Rodrigues MM, Weiss CB, Muncy DW. Ophthalmomyiasis of the eyelid caused by *Cuterebra* larva. *Am J Ophthalmol* 1974; 78:1024-6.
4. Tsuda S, Nagaji J, Kurose K, et al. Furuncular cutaneous myiasis caused by *Dermatobia hominis* larvae following travel to Brazil. *Int J Dermatol* 1996; 35:121-3.
5. Sachdev MS, Kumar H, Roop, et al. Destructive ocular myiasis in a noncompromised host. *Indian J Ophthalmol* 1990; 38:184-86.
6. Wood TR, Slight JR. Bilateral orbital myiasis: report of a case. *Arch Ophthalmol* 1970; 84:692-3.
7. Zupan-Kajcovski B, Simonian H, Keller JJ, Faber WR. [Cutaneous myiasis caused by a double infestation with larvae of *Dermatobia hominis* and *Cochliomyia hominivorax*]. *Ned Tijdschr Geneesk* 2004; 148:2086-9. Dutch.
8. Fox LM. Ivermectin: uses and impact 20 years on. *Curr Opin Infect Dis* 2006; 19:588-93.
9. Biswas PN, Thakur SK, Mukherjee H, Bhaduri G. Ophthalmomyiasis. *J Indian Med Assoc* 2005; 103:539-42.