Ocular Myiasis - A Case Report

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A 25 year old postgraduate student presented with complaints of marked pain, burning, itching, redness, and tearing of a week’s duration. He had consulted three other Ophthalmologists before consulting us. Right from non-specific anti-histamines to steroids like Prednisolone acetate eye drops to Acyclovir eye ointment were prescribed with no benefit.

On examination his visual acuity was 6/6 in both the eyes. There was more of fornicial congestion with no corneal staining in the right eye and the left eye was normal. Anterior chamber was normal. On high magnification a tiny mobile shining creature of less than a millimeter was seen in the inferior fornix. It was carefully removed and photographed under a microscope. Thereafter antibiotic drops was prescribed and he was reviewed the next day.

He was very comfortable and profusely thanked us. On further questioning it was revealed that he was a Veterinary postgraduate student and comes into contact with animals frequently.

Discussion

Myiasis is defined as the invasion of living animal tissue by fly larvae (maggots). When larvae invade the eye, this condition is termed ocular myiasis (OM) or Ophthalmomyiasis. Larvae most commonly attack the lids or conjunctiva (external ophthalmomyiasis). In rare instances they may penetrate into the eyeball itself (internal ophthalmomyiasis). External OM can usually be remedied without complications; however, internal OM is very serious and often results in serious damage including blindness.

In the majority of cases, OM is caused by larvae of the sheep nose bot fly (Oestrus ovis), although other species such as the human bot fly (Dermatobia hominis) are occasionally involved. The sheep nose bot fly is a large, hairy, yellowish-brown, bee-like fly. It resembles a honey bee, but is slightly smaller in size. Unlike most flies, O. ovis gives birth to live young larvae which are capable of parasitizing hosts immediately. In its normal life cycle, the adult female fly deposits larvae around the nostrils of sheep and goats and the larvae migrate into the sinuses. There, they mature by going through three progressively larger larval stages (instars). After a few months, the fully mature larvae (third instar) pass out of the nostrils and pupate on the ground. Adult flies emerge from the pupae approximately 3 – 6 weeks later and live for about a month.

Occasionally, the sheep nose bot fly deposits larvae near the eyes of humans living or working in close proximity to livestock. In humans, O. ovis larvae generally do not develop past the first instar stage, although other species may grow much larger. An interesting feature of O. ovis is that it can deposit larvae while still in flight. The fly darts close to the eyes or nostrils and ejects a stream of larvae into the target area.

OM is characterized by a condition similar to conjunctivitis, marked by pain, burning, itching, redness, and tearing in the affected eyes. Often these symptoms are accompanied by the sensation of a foreign body moving in the eye. Many patients report having had an insect buzzing around their face or striking them in the eye immediately prior to the onset of symptoms. In extreme cases the larvae may penetrate the mucosal sinus causing swelling, pain, and frontal headaches, or may invade the globe of the eye, causing retinal damage and blindness.
body segments, each with spines or hooks which allow them to maintain their hold on the host tissue while moving about by means of peristaltic contractions. A pair of enlarged oral hooks on the anterior end (mouth) anchors the larva firmly while it feeds on eye secretions and bits of broken tissue. The larvae are readily visible to physicians examining the eye. In some cases they can be seen traveling through the cornea. Early growth stage larvae can often be carefully extracted from the eye with fine forceps. Anaesthetic drops may be useful to immobilize the larvae during removal. Antibiotic ointments have also been used to help suffocate the larvae, thereby facilitating removal. Antibiotic ointments or drops, as well as topical corticosteroids, can be used to prevent secondary bacterial infection and reduce inflammation. Follow-up examination is advisable to rule out complications or the existence of additional larvae. If the larvae have burrowed more deeply into the conjunctiva, sinuses, or eyeball, surgery may be required.

Reference: