Worm in anterior chamber of the eye

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SUMMARY

We report a case of a 42-year-old female patient who presented to the ophthalmology outpatient department with painful red eye for 1 month. Slit-lamp microscopy showed a live worm in the anterior chamber of left eye. The worm was surgically removed under topical anaesthesia. It was sent to the microbiology department for further identification and was found to be adult female *Loa loa*.

BACKGROUND

Loa loa also known as 'African eye worm' is a nematode which causes loiasis through bite of *Chrysops* flies. It has been associated with Calabar or fugitive swellings that are areas of angioedema due to migration of the adult worms through the subcutaneous tissues and are often found at the extremities especially around joints.¹ In the eye, it has a special predilection for subconjunctival tissues where it may lead to ocular pain, tear, pruritus and foreign-body sensation, thus prompting the synonym 'eye worm'. Intraocular infestation by live *L. loa* is a rare occurrence, and few such cases have been reported previously.^{2–5} We report a case of live *L. loa* in the anterior chamber which was surgically removed under topical anaesthesia.

CASE PRESENTATION

A 42-year-old woman, resident of Shravasti, a rural area in Uttar Pradesh, India, visited the Ophthalmology Outpatient Department of King George's Medical University in July 2017 with a chief

complaint of pain, redness and decrease in vision in the left eye for 1 month. Slit-lamp examination of left eye showed conjunctival congestion, clear cornea. Anterior chamber showed mild iritis and presence of coiled up, thread-like structure which was mobile. The lens was clear. Right eye was within normal limits. Best corrected visual acuity was 6/36 in the affected left eye and 6/6 in the right eye. A diagnosis of a live anterior chamber worm was considered. The patient appeared to be healthy, and no subcutaneous nodules or swelling on any part of the body was seen. There was no hepatosplenomegaly or lymphadenopathy.

INVESTIGATIONS

Blood investigation

Laboratory investigation of peripheral blood showed eosinophilia but diethylcarbamazine (DEC) provocation test was negative for microfilaria.

Parasitic identification

A live adult actively motile worm was extracted through a superior nasal limbal stab incision and sent to the Microbiology Department of the university for further identification (figures 1 and 2). On macroscopic examination, the worm was white, cylindrical, curved, about 0.8–0.9 cm in length and around 0.5 mm in breadth. Microscopically, the worm had blunt anterior and the posterior ends of the body (figure 3). There was a vulval opening near the mouth, and uterine structures could be seen (figures 4 and 5). The mouth parts

Figure 1 Worm in the anterior chamber of the eye.

Figure 2 The worm seen under light microscope (x40 magnification).

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Figure 3 Blunt anterior ends of the worm as seen under microscope (x40 magnification).

were not very clear, but a microfilaria could be seen near the vulval opening. The worm was identified to be adult female *L. loa*. Absence of secondary kinks and double stylets at the anterior end differentiated it from *Brugia* spp. It was also differentiated from *Wuchereria bancrofti* on the basis of the smaller size.⁶

DIFFERENTIAL DIAGNOSIS

Wuchereria bancrofti, *Brugia malayi*, *B. timori* and *Onchocerca volvulus*.

Figure 4 Genital pore of the worm as seen under microscope (x400 magnification).

Figure 5 Uterine structures of the worm as seen under microscope (x400 magnification).

TREATMENT

Surgical removal of the worm.

DEC, 2–6 mg/kg body weight for 2–4 weeks.

OUTCOME AND FOLLOW-UP

Patient was relieved of her symptoms after worm removal.

DISCUSSION

Human loiasis shows geographical restriction to rain forests and swamp area forests of West Africa but sporadic cases have been reported from other countries including India. Barua *et al* in 2005 reported ocular loiasis in a 48-year-old man as a first case report from Assam in the Regional Institute of Ophthalmology, Gauhati Medical College.⁴ Mandal *et al* stated about recovery of subconjunctival gravid female *L. loa* from a 50-year-old Indian woman in Kumayun district, Himalayas.⁷ Other case reports of worm recovery from anterior chamber of the eye have been published by various authors like Bhagwat *et al*⁸ in 1953, Laxmi *et al*⁹ in 1988, Arora *et al*¹⁰ in 1990 and Satyavani *et al*¹¹ in 1993.⁵ Sayali *et al*¹² reported adult *L. loa* from upper eyelid in 2011 and Khetan *et al*¹³ reported male *L. loa* from a 9-year-old child.^{5 12}

The woman in our case belonged to a rural region in India. Because of early presentation, our patient did not develop any complications. Early diagnosis and immediate management strategies are helpful in preventing grave ocular complications like uveitis with hypopyon and secondary cataract with corneal oedema. Being a relatively rare entity in our country, parasite infestations should be kept as differential diagnosis in cases of unknown aetiology with similar presentations.

Treatment involves manual removal of the worms present along with the use of DEC for over a period of about 3 weeks. Severe hypersensitivity responses may occur due to the killing of both microfilariae and adult worms in patients with high microfilaricidal load, hence steroid may have to be added in some cases. Personal protection should be done by using skin repellants and wearing long sleeves and covered clothings to minimise the chances of bite from *Chrysops* fly.

Learning points

- ▶ Filarial parasite should be kept in differential diagnosis of painful red eye.
- ▶ Slit-lamp examination should be done under low illumination to avoid missing the parasite in anterior chamber.

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