

A LIVE WORM IN ANTERIOR CHAMBER

Dr. Aneesh Neekhra, Dr. A.P. Agashe, Dr. Hemant Todkar, Dr. H.L Trivedi,
Dr. Rahul Jain, Dr. Shirish Fegde

ABSTRACT : A live worm was removed intact from anterior chambers of left eye of 23 years old male patient with no systemic findings.

INTRODUCTION :

There are various parasites, which causes ocular manifestations with or without other systemic associations. Most of these cases comes with retinal / posterior segment manifestations specially toxoplasmosis, toxocariasis. Rarely patients come with anterior chamber manifestations specially in Onchocerciasis, loa loa but these are more common in African continent.

As far as our country is considered, live worm mainly Gnathostomiasis in anterior chamber was reported in few cases.

CASE REPORT :

A 23 years old male came to our out patient department at B.Y.L.Nair Hospital with complaints of gritting sensation and watering with minimal redness in left eye. He had no complaints in right eye. When he was asked specifically he told something was moving in front of his left eye whenever he splashes water into eyes in the morning. This uneasiness remained for few minutes and then it was relieved by its own. He had been taking non-steroidal anti-inflammatory topical drugs with tear substitutes.

On examination visual acuity was 6/6 in both eyes with minimal congestion in left eye. He was examined after splashing water over slit lamp which resulted into translucent 20-25mm long adult worm convoluted on itself freely moving within the anterior chamber without any attachment to iris. There was no abnormality found in the conjunctival fornices as well as in cornea with no cells / flare in the anterior chamber. Both pupils were reacting fully. Fundus examination was normal with no signs of previous chorioretinitis and migratory tracts with optic disc normal. Extra ocular movements were found to be normal. There was no abnormality in the surrounding ocular adnexa. Systemic examination did not reveal any migratory subcutaneous swelling, nodules, or abscess.

All routine investigations including Haemogram, chest x-ray came out to be normal. Liver and renal profile was normal. Routine stool and urine examination did not reveal any eggs / worm / larva. Ultimately patient underwent surgical removal of worm by paracentesis in superiotemporal quadrant under topical anesthesia. He was given topical steroids and antibiotics post operatively.

It was examined by microbiologist and came out to be angiostrongyliasis. Patient was followed weekly for six months with no recurrence / any other symptoms.

Discussion :

Since unfortunately histopathological examination was not done, this created diagnostic dilemma. As such clinically only angiostrongyliasis is the ocular worm whose adult stage commonly found in anterior chamber. Here main differential diagnosis is with Gnathostomiasis. (Table 1)

Other ocular worms reported to be found in the anterior chamber of eye are as follows:-

- 1. Bancroftian and Brugian Filariasis** : Aberrant adult worm migrate to conjunctiva, eyelid lacrimal gland, anterior chamber, iris and subretinal. Adult W bancrofti worms are 4 to 8 cm in length and adult Brugia species are 2 to 4 cm in length. Systemically acute lymphangitis and adenolymphangitis funiculitis, epididymitis, orchitis are the common findings.
- 2. Sparganosis** : Prevalent in Southeast Asia humans can become infected by the proceroid larval form, after drinking contaminated water with infected copepods, infected second intermediate hosts (usually snakes or frogs). Adult worm cannot develop in humans and may be between 1 and 60 cm. In length. Migratory subcutaneous swellings, nodules, or abscess formations are common.
- 3. Schistosomiasis** : Ocular involvement includes conjunctival / lacrimal gland egg-related granulomas. Aberrantly migrating worms have been found in the superior ophthalmic vein and the anterior chamber. Diagnosis is usually made when eggs are detected in stool, urine, or biopsy material.
- 4. Paragonimiasis** : Retinal hemorrhages and involvement of the anterior chamber, eyelid and orbit; and subluxation of the lens have all been reported. Uveitis, hypopyon and secondary glaucoma can result. Diagnosis is by identification of eggs in sputum or feces examination.
- 5. Onchocerciasis** : Microfilaria migrate freely within the cornea, anterior chamber,
- 6. Loiasis** : vitreal humor, retina, choroid and optic nerve. Not found in India.

Others parasites with mainly posterior segment manifestations are :-

Toxocara (granuloma)

Toxoplasmosis (chorioretinitis)

Echinococcosis (vitreous cysts)

Cysticercosis

Other parasites limited mainly to conjunctiva and eyelids are as:-

Dirofilariasis : Worldwide transmitted by mosquitoes,

Mansonella perstans : Africa, Central and South America, conjunctival nodule formation, proptosis, eyelid swelling with microfilariae in blood.

Trichinosis : America and Europe. Bilateral palpebral edema, myalgia and eosinophilia with pain on eye movements.

Ascariasis : Recovered from the nasolacrimal duct in numerous patients.

Hookworm : Reported to involve cornea.

Dracunculosis : 60 to 80 cm. In length adult female worms isolated from the conjunctiva.

Cerebral angiostrongyliasis is caused by a rodent lung worm angiostrongylus (Parastrongylus) cantonensis. Although, this was discovered in the rat in 1935, it remained unknown in humans until 1962, when the second human case reported in Hawaii. Since then, more than 2000 human cases have been reported in the Asian Pacific area. Most of them were diagnosed on a clinical basis. (1)

Recent epidemiologic studies indicate that India, China and Africa also are endemic areas.

Human contract the infection by eating infected raw mollusks, carrier host (eg. prawns, crabs or planarians), or vegetables contaminated by the mucus of infected mollusks. Adult worm A. cantonensis (Male worm 20-25mm 320-420 μm in diameter. Female worm

22-34 mm. 340-560 μm)

parasites in the pulmonary artery and right heart of rats. Eggs are deposited in pulmonary artery where they hatch and the larvae break through pulmonary capillaries and pass into alveoli. From lungs, the larvae migrate through bronchotracheal tree and are swallowed into gastro intestinal tract. These first stage larvae pass into intermediate host either terrestrial slugs or land or aquatic snails via feces. It molt twice and become third stage larvae. When the infected host are enter by rats the larvae penetrate the intestinal wall and are carried into blood stream and reach up to the brain where it become adult worm that ultimately matures in the lung.

Because human beings are unsuitable hosts, organism confined to central nervous system, but normal and full maturation of the parasite does not occur. Eosinophilic meningoencephalitis, cranial neuropathy, and ocular involvement are the most common manifestations of human angiostrongyliasis (2).

In ocular angiostrongyliasis, worms in various stages of development have penetrated the

anterior chamber, subretinal space, and vitreous. Patients may present with blepharospasm, inflammation of the anterior chamber, iridocyclitis, vitritis, retinal detachment, and lid edema. Fibrous deposition and scarring along worm paths can result in vitreal fibrosis and contraction with retinal distortion and detachment. Papilledema (often unilateral) can also occur with angiostrongyliasis eosinophilic meningoencephalitis. Involvement of cranial nerves (specially II, VI, VIII) can result in ocular palsies or ptosis. Orbital involvement can result in exophthalmos and extraocular palsies. Neuritis, both peripheral and optic, can accompany cerebral angiostrongyliasis, with resultant visual disturbances. Intraocular angiostrongyliasis can occur without associated meningitis.

There are about eight cases reported to be found in the anterior chamber, one case in sub retinal location and 2 cases of third stage larvae in vitreous (3).

As far as treatment concerned, cortico steroids, analgesics, and repeated removal of cerebrospinal fluid may relieve symptoms though spontaneous recovery often occurs with cerebral angiostrongyliasis. Mebendazole (100 mg BD x 5 days) is currently the pharmacologic agent of

choice although albendazole, lavamisole, and ivermectin may be effective(2). These antiparasitic drugs are not recommended for routine angiostrongyliasis cantonensis because of detrimental effects with acute tissue reaction after worm dies (1). Ocular angiostrongyliasis is treated with surgical removal of the parasite. Steroids and analgesics may be employed.

Such patients with non-specific complaints with worm infestation can be missed if not particularly looked for. Ocular parasites are not common in India, hence certain degree of suspicion, careful history taking and detailed examination are important.

References :

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| | Gnathostomiasis | Angiostrongyliasis |
|------------------------------|--------------------------------|--------------------------------|
| Disease entity | Eosinophilic myeloencephalitis | Eosinophilic myeloencephalitis |
| Incidence | Low | High |
| Major Pathology | Hemorrhage, necrosis | Eosinophilic granuloma |
| Symptoms | Severe | Mild |
| Cutaneous migratory swelling | Frequent | Absent |
| Neurologic Manifestations | Frequent | Rare |
| Prognosis | Poor | Good |
| Mortality | 13% | 1.2% |