

Case Report

An Encounter with a Worm in Anterior Chamber: A Case Report

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Abstract

Background: Several parasites are known to affect the eyes, some of them even causing blindness. Data on helminths infecting the eye are scant and mostly limited to case reports from different countries. **Case:** A 53 years old female presented with complaint of redness, foreign body sensation and diminution of vision in right eye since one month. **Observations:** On examination a live motile worm was found wriggling in the anterior chamber which was surgically removed. The microscopic findings were in favour of *Dirofilaria*. However, detailed histopathological examination and determination of species couldn't be done. **Conclusion:** The occurrence of parasite in eye is an uncommon event. Most of these parasites are found in subconjunctival or subretinal regions. Those in anterior chamber is a very rare event. Recently *Dirofilaria* is being recognised as an emerging zoonosis.

Key words: Anterior chamber, worm, *Dirofilaria*.

Introduction

Vector borne parasitic zoonoses (VBPZ) have long been causing morbidity and mortality in humans. With the change in climatic conditions, environment, human demographics and behavior changes in epidemiology and distribution of VBPZ are being noted. These changes, alone and in concert, alter the interactions between humans and infectious disease agents leading to clear emergence of infectious and zoonotic diseases (Jones, 2008; Otranto, 2011). These changes also influence the

vectors e.g., ticks, fleas, black flies, mosquitoes and sand flies, of zoonotic parasites and change their relationships with humans.

Dirofilariasis is one of the VBPZ which has been and is being reported from wide geographic areas including areas that have not previously reported such cases (Otranto, 2011).

We report a case of ocular *dirofilariasis* from an area previously considered non endemic for the parasite.

Case report

A 53 years old female from Assam presented with complaint of redness, foreign body sensation and diminution of vision in right eye since one month. She had no history of fever, cough, subcutaneous nodules or rashes. There was no pet at home and there was no travel history.

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Her best corrected vision was 6/12p and 6/9 in right and left eye respectively. Ocular examination of right eye revealed circumcorneal congestion, stromal oedema inferiorly in cornea, and a small, live thread like mobile worm wriggling in anterior chamber. The posterior synechia was noted at 9 O'clock position. Rest of the ocular examination was unremarkable. Systemic examination also did not reveal any abnormality.

Complete blood picture and erythrocyte sedimentation rate were within normal limits with no evidence of eosinophilia. Peripheral blood smear was unremarkable and no microfilariae were seen. Chest X-ray was unremarkable. Urine and stool analysis did not reveal any ova or cyst.

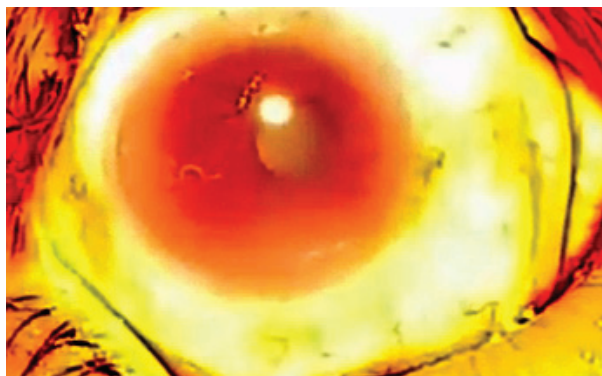


Figure 1: Clinical photo of worm in anterior chamber



Figure 2: Microscopic view of the worm

Pilocarpine 2% was instilled to prevent posterior migration of the worm. Patient was taken to operating theatre. Side port was made at temporal quadrant and intact live worm was recovered with forceps. It was then preserved in normal saline and sent for identification. Patient recovered without complication and was advised to consult a physician to rule out any systemic involvement.

On examination the worm was immature, about 2.5mm long, rounded at one end and slightly tapering at the other. The worm had longitudinal ridges and was identified as *Dirofilaria* however species couldn't be identified.

Discussion

Dirofilaria is a filarial nematode. Based on the absence or presence of external longitudinal cuticular ridges, two subgenera of *D. dirofilaria* represented by *D. immitis* and *D. nuchtiella* with *D. repens* and *D. tenuis* as type species are well recognized. Nearly 40 species have been identified but only six are known to infect human. The most common ones are *D. repens* and *D. immitis*. *D. repens* is commonly found in subcutaneous tissues of dogs, foxes and cats, while *Dirofilaria immitis* inhabits right ventricles and pulmonary arteries of dogs and cats hence, also known as dog heartworm. Other species that occasionally cause human infections include *Dirofilaria tenuis*, infecting raccoons, *Dirofilaria ursi* from bears, *Dirofilaria subdermata*, of porcupines and *Dirofilaria striata*, which affects bobcats (Simon, 2012). These carnivores are definitive host and mosquitoes belonging to the genera *Aedes*, *Armigeres*, *Culex*, *Anopheles*, and *Mansonia species* are intermediate host cum vector for this nematode. Mosquitoes obtain microfilaria from an infected host during a blood meal. Microfilaria develops into the third stage infective larva in the mosquito. When this mosquito feeds on human or other hosts, it transmits the infective larvae into blood

stream of the host. The larva fails to attain full maturity in human so microfilaria is not seen making human an accidental dead-end host. However, Ermankova et al., (2014) and Orihel et al. (1997) have reported adult worms in their cases and Lupse et al. (2015), Orihel et al. (1997) reported multiple worms from single inoculum.

The most affected areas are head, orbit, thoracic wall and the upper limbs. The most common presentations are subcutaneous and submucous lesions (Nath, 2010). Ocular involvement is usually periorbital, orbital, subconjunctival or subtenon (Chopra, 2012). However, there are very few intraocular lesions have been reported (Otranto, 2011a)

Removal is curative and full visual acuity is generally restored with no long term sequelae. The use of antihelminthic drug is not routinely recommended after surgery. However, Jelinek et al. (1996) have proposed the use of Diethylcarbamazine, Ivermectin.

The identification of most *Dirofilaria* to genus level is easy given to its morphological features. Determining the species is more difficult, especially if worm is immature as in our case and in situations when, the specimen is affected by surgical manipulations. In such cases, Polymerase chain reaction (PCR) can help in reaching final diagnosis (Rishniw, 2006).

Dirofilaria is endemic in Southeastern part of United States, Southern and eastern Europe, Central and minor Asia and Sri Lanka (Pampiglione, 2000). *Dirofilaria* was found to be endemic in the southern coastal states of Kerala and Karnataka in India (Sekhar, 2000; Sabu, 2005). Few cases have been reported from Punjab (Chopra, 2012), Haryana (Gautam, 2002), Assam (Nath, 2010) and Orissa (Singh, 2010).

Though considered rare, there has been rise in number of case reports in recent years both from epidemic and from areas considered to be non-

endemic. Pampiglione et al. 2001 has reported that in the last 50 yrs, the number has increased to 782. Therefore, *Dirofilaria* is regarded as an emerging zoonosis. The clinicians should be aware of the epidemiology and behaviour of the nematode because awareness is the first step towards early diagnosis, better management and more efficient prevention.

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