

Case Report

Ophthalmic parasitic zoonoses caused by *Dirofilaria Repen*

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Abstract

A 48year old woman with fever and arthritis due to a suspected viral etiology was referred for fundus examination and ophthalmic opinion. Examination revealed mild congestion and edema, mild increase in Intra ocular pressure decrease in visual acuity and the presence of a live worm in the anterior chamber. Surgical paracentesis was performed to remove the parasite which was identified as the filarial nematode *Dirofilaria repens*. Post-surgical follow up remained uneventful with the ocular parameters returning to normal. Emphasis on timely intervention in these cases would prevent infections from progressing from simple manifestations to serious complications like iridocyclitis, secondary glaucomas and destruction of intraocular structures leading to loss of vision.

Key words: *Dirofilaria repens*, Ophthalmic zoonoses.

Introduction

There are several causes of blindness due to both infective and non-infective etiology⁽¹⁾ and those induced due to the involvement of parasitic agents are of a major public health concern. Several parasites localize in the human eyes as an effect of a specific neurotropism, larval migration and in a few cases, as a primary localization being directly into the eyes. Zoonotic parasitic infections involving the eye are encountered world-wide and can be a major threat to the socio-economic development, mainly in developing countries. At an individual level, it has a severe impact on the quality of life of the affected person with the threat of ensuing complications unless there is timely intervention to prevent such incidents.

Case History

A 48 year old woman with fever and arthritis presented to the Ophthalmology OPD with complaints of mild irritation and a burning sensation in her left eye. Examination of the Left eye showed conjunctival

congestion in the anterior chamber, there was a thin thread like structure. Pupil was of normal size and reactive to light. Lens appeared normal. Intra ocular pressure was found to be slightly raised at 22mg. A vision of 6/12 was recorded. Fundus examination was normal. On Slit lamp examination, a parasite measuring about 6-8mm in length with sluggish motility was seen in the inferior aspect between 5 & 6 o'clock position with minimal flare. Gonioscopic examination of angle showed the round body like structure touching the schwalbe's line with the angle being wide open. The worm was surgically removed, sent for microbiological examination and subsequently identified based on morphological characteristics as *Dirofilaria repens*.

Discussion

The largest numbers of filarioid eye infections are known to be caused by the *dirofilaria*

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species. These parasites are known to be natural parasites of dogs and other carnivores (2). Human dirofilariasis is a zoonotic infection. Though several species of dirofilaria have been identified, only a few of them are known to be associated with human infections including *D.immitis*, *D.tenuis*, *D.repens*, *D.ursi* and *D.subdermata*, *D.striata* and *D.lutrae* (3). The first human infection was reported in Hungary in 1879 and the first ocular infection was noted in Sicily in 1885 (4).



Fig:1 – Live worm - Anterior chamber

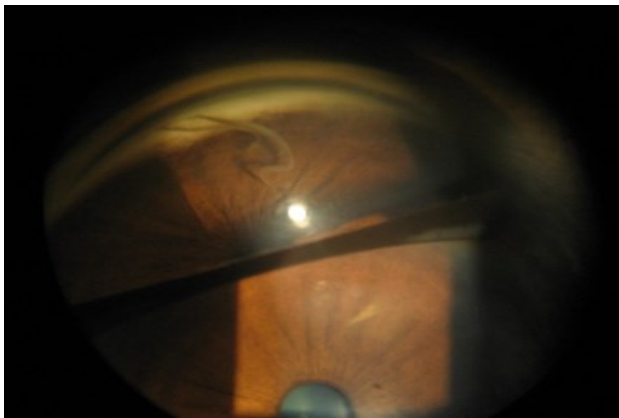


Fig:2 – Live worm - Anterior chamber

Cases of human infection have been subsequently reported from Argentina, Australia, Brazil, Cannada, Costa Rica, China, Egypt, France, Greece, Hungary, India, Israel, Italy, Japan, Malaysia, Netherlands, New Zealand, Russia, Senegal, Spain, Srilanka, Thailand, United States and Yugoslavia. Cases of human dirofilariasis caused by *Dirofilaria repens* in particular, have been reported widely throughout Asia, Europe and Africa. Reports of this infection from India are however limited (5). The first two cases of dirofilarial infection were reported from the state of Kerala by Joseph et al in 1976 and by George and Kurian in 1978 respectively (6). In the Indian scenario, *D. repens* remains the most common causative

agent while in a few cases *D. immitis* (7) and *D.tenuis* (8) have also been reported.

Although it is an uncommon parasite in human, when found it is usually located in the sub epithelial tissues of the eyelids, fingers, cheeks, breasts, abdomen, and very rarely in the conjunctivae. The source and the route of infection are not known definitely. Since only immature forms are found in humans and no microfilariae are detected in circulation (9). Diagnosis of dirofilariasis is based on a detailed history and microscopic species identification. There are no blood tests for ocular dirofilariasis: eosinophilia is inconsistent, the filarial serology is frequently negative because of low and fleeting antibody production and tests for microfilaremia are also negative (10, 11, 12, 13).

In most cases, antifilarial medication is not administered prior to surgical resection of the lesions. A single dose of ivermectin followed by 3 doses of diethylcarbamazine (DEC) is given if the syndrome is strongly suspected prior to surgery. Recent veterinary studies have indicated that the administration of doxycycline plus ivermectin for several months, with or without administration of the adulticide, may eliminate adult worms with less potential for thromboembolism and perivascular inflammation (14,15). This may suggest future avenues for human therapy.

Human infection with *Dirofilaria repens* is not widely recognized in India although it is a common zoonotic infection reported from across the globe including neighbouring countries like srilanka. This vector borne illness is considered to be a dead end infection in humans. Due attention should be given in epidemiological and parasitological studies and it should be considered in the differential diagnosis of cases with orbital pseudotumour and conjunctivitis. With the increase in the incidence of ophthalmic parasitic zoonotic infections, it is important to realize that as ophthalmologists and parasitologists, it is important that we recognize, identify and treat these patients as required before they progress to complications which cannot be averted.

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