

Intravitreal live adult Brugian filariasis

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Human ocular infestation by live filarial worm is a rare occurrence and has been reported mostly from South-East Asia. It involves the eyelids, conjunctiva, cornea, anterior chamber and uvea. No case of intravitreal Brugian microfilaria / adult worm has been found by Medline search. Here we report a case of live intravitreal adult Brugian filaria, where the parasite was successfully removed by pars plana vitrectomy. Identification of the worm was done by light microscopy and confirmed by immuno chromatographic test.

Key words: *Brugia malayi*, intravitreal filariasis, ocular infestation

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Intraocular infestation by the filarial worm is a rare occurrence in humans. Most of the published reports are from South-East Asia.¹ We report a very rare case of intravitreal Brugian filarial worm, where the worm was removed live and intact by pars plana vitrectomy.

Case History

A 35-year-old male presented to us with complaints of “something moving in front of his left eye for two days”. His visual acuity was 20/20 in both eyes. Anterior segment findings were within normal limits. Indirect ophthalmoscopy of the left eye showed clear ocular media, but there was a motile whitish thread-like worm entangled with vitreous strands found near the optic disc [Fig. 1]. Posterior segment of the right eye showed no abnormality.

The patient had history of recurrent fever. Peripheral blood smear examination showed eosinophil count of 523/ μ l of blood but no detectable microfilaria. Systemic examination revealed no abnormality. Chest X-ray was normal. No cutaneous lesions were seen. Routine and microscopic examination of urine showed no abnormality.

Pars plana vitrectomy was planned to remove the worm live and intact. Limited vitrectomy was carried out leaving vitreous strands around the worm intact, which helped in removing the parasite by grasping the vitreous strands around it [Fig. 2]. The worm measuring 30 mm in length and 0.1 mm in diameter was alive and actively motile upon removal from the eye. It was sent to the parasitologist and on light microscopy identified to be adult filarial worm because of twisted body curves with smooth cuticle, fine transverse striations, ventrally coiled tail [Fig. 3] and the slightly swollen head end² [Fig. 4]. Immuno



Figure 1: Live intravitreal Brugian worm with active motility seen between the optic disk and macula

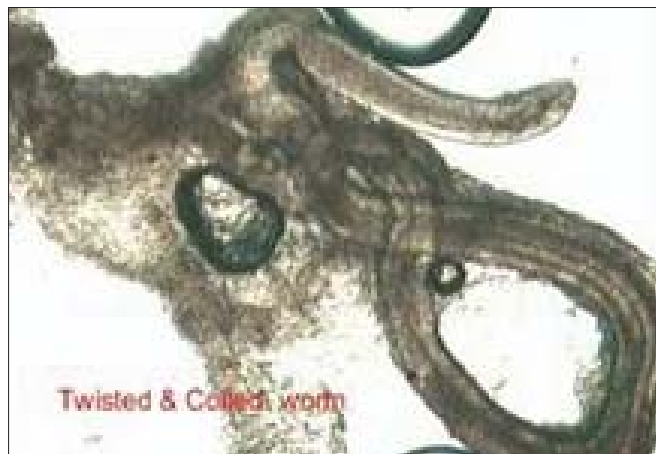


Figure 3: Light microscopic picture of the worm showing twisted body curves, smooth cuticles, transverse striations and ventrally curved tail (100x)

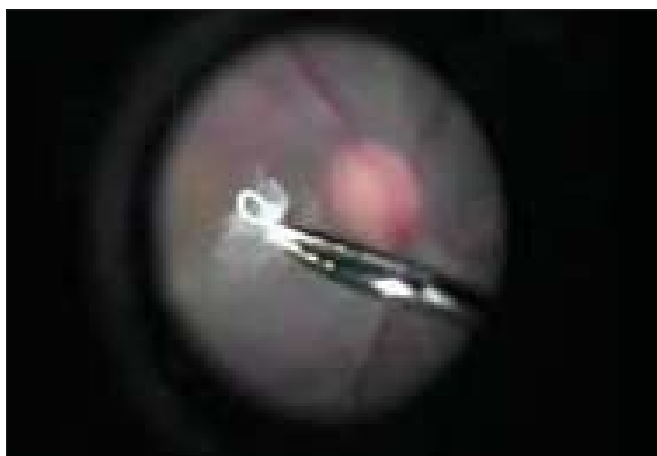


Figure 2: The worm is extracted live and intact after limited vitrectomy holding the vitreous strands around the worm

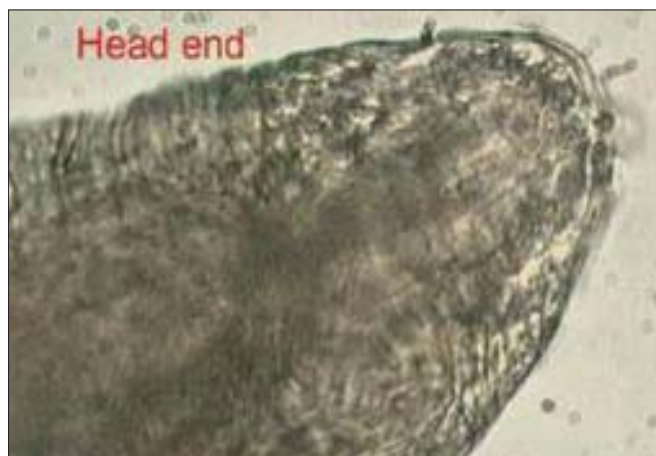


Figure 4: Light microscopic picture of head end of the parasite showing slight bulging (400x)

chromatographic test (ICT) for filarial antigen was negative. The sensitivity and specificity of ICT for filarial antigen (*W. bancrofti*) is 96 to 100% and 95 to 100% respectively.³ This helped us to diagnose the worm as adult Brugian filarial worm and most probably *Brugia malayi* as this is the only other filarial worm found in the Indian subcontinent according to the literature.³

Discussion

Brugia malayi is a helminth belonging to class Nematodes. Man is the definitive host for *Brugia malayi*, the intermediate host being species of mansonian mosquitoes. Adult worms live in the lymphatic system discharging live embryos (microfilaria) into the bloodstream, which are capable of living in the peripheral blood for a considerable period of time without undergoing any developmental metamorphosis. Microfilariae are taken up by the intermediate host where they undergo further development becoming infective for man.^{3,4}

Usually pathogenicity of *B. malayi* is due to lymphangitis and elephantiasis. But rarely, microfilariae move out of lymphatics or blood circulation and can come to extravascular sites like the eye (vitreous cavity). The exact mode of entry of such helminths

into the vitreous cavity is not known. The possible modes may be from choriocapillaries through the retinal layers as in a few reported cases of intravitreal Gnathostomiasis or through the optic nerve head.⁵

The most common clinical presentation of ocular filarial infestation is chemosis, lid edema orbital cellulitis, anterior uveitis or worm in the anterior chamber. But no case of intravitreal adult Brugian filarial worm has been found by Medline search.

Once a parasite is identified in the vitreous cavity it should be removed immediately, live and intact as (i) it is capable of migrating to various parts of the eye and could cause structural damage and severe intraocular reaction (ii) severed parasite may cause serious intraocular inflammation (iii) intact parasite is necessary for proper identification of species and any systemic treatment if needed for it.^{5,6}

This very rare case of intravitreal Brugian filariasis illustrates that larval stage of lymphatic filariasis can reach vitreous cavity and grow into its adult form and may cause visual problem. Removal of the living intact parasite is necessary not

only for symptomatic relief or visual rehabilitation but also for prevention of intraocular inflammation due to damage or death of the parasite.

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