Intraocular nematode with multifocal choroiditis: Case report

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Abstract

**Background:** Live intraocular nematode is a rare occurrence. Nematode can migrate actively within the eye, creating visual symptoms and damaging ocular tissue.

**Case presentation:** A 26-year old man presented with painless reduced vision of the left eye for one week duration. It was associated with floaters. Visual acuity on the left eye was hand movement. Anterior segment examination was normal with normal intra-ocular pressure. Fundus examination showed a live nematode lying subretinally at the macular area with macular oedema and multifocal choroiditis at peripheral retina. There was no vitritis, vasculitis or any retinal hemorrhage. Systemic examination revealed normal findings and laboratory studies only showed leucocytosis. The diagnosis of introcular nematode was made and he was treated with oral anti-helminths and a course of oral steroid at a reducing dose. The nematode had died evidenced by its immobility during the treatment and finally disintegrated, leaving macular oedema with mottling appearance and mild hyperpigmentation. Multifocal choroiditis had also resolved. However despite treatment his visual acuity during follow-up had remained poor.

**Conclusions:** Cases of intraocular nematode, though not commonly encountered, continue to present the ophthalmologist with the problem of diagnosis and management and hence poorer prognosis to the patient.
Introduction
Live intraocular nematode is a rare occurrence and most reports were from India [1,2,3]. India reported few cases of *Gnathostoma spinigerum* [1,2]. After it gained access to the eyeball, these nematode may localize to the anterior chamber [1], the vitreous [2] or the retina [3,4]. Nematode can migrate actively within the eye, creating visual symptoms and damaging ocular tissue. Ocular inflammation can be induced, particularly when the organism dies.

Case Report
A 26-year old man from the outskirt of Kota Bharu in Kelantan presented with sudden onset of reduced vision of the left eye for one week duration. Initially it was a central field loss which had then progressively involved the whole visual field. It was associated with floaters but was painless with no eye redness, itchiness or discharge. He had four cats at home which he had a very close contact with. He denied any trauma to the eye or any eye injury and he had no past ocular history or medical illness.

His visual acuity was hand movement on the left eye with presence of relative afferent pupillary defect and 6/6 on the right eye. Left eye examination showed no inflammation in the anterior segment or the vitreous cavity. Funduscopic examination disclosed a white live nematode, approximately two disc diameters in length, moving slowly in the macula at the subretinal space (Figure 1). The body of the nematode was roughly tapered at one end and slightly rounded at the other end. There was presence of macular oedema and multiple spots of choroiditis at the peripheral retina. However there was no evidence of worm track found, no vasculitis or any retinal hemorrhage. The right eye findings were normal. Systemic examination showed no significant finding with no jaundice or hepatosplenomegaly.

The blood investigations revealed white blood count of 10.4 x 10⁹/L (high normal), hemoglobin of 17.0g/L, red blood cell count of 6.38 x 10¹²/L (increased) and normal platelet count. The erythrocyte sedimentation rate (ESR), liver function test, serum urea and electrolytes as well as his chest x-ray were also normal. Blood for serum toxocara antibody was negative.

Clinically he was diagnosed to have intraocular nematode with multifocal choroiditis. He was treated with oral Prednisolone 30mg perday for a week, and then it was tapered by 5mg per week. At the same time oral Albendazole 400mg 12 hourly was also started. Two days after the treatment, the nematode was found to be not moving anymore, but its morphology and the rest of the retina remained the same (Figure 2). The antihelminth was continued for five days based on recommendation by the infectious disease specialist. After completed five days of antihelminth, the nematode had disintegrated, leaving a mottled appearance of the macula with mild hyperpigmentation and resolving choroiditis (Figure 3). The patient was discharged after one week with oral Prednisolone of 25mg/day. Upon discharge, his left eye visual acuity remains the same with no vitritis and resolved choroiditis.

Discussion
Humans commonly acquire the infection by ingesting contaminated meat or water containing the third-stage larvae. This larva will continue its life cycle in human body which include the eye and incite ocular damage by a combination of mechanical, immunologic, and allergic
reactions. In this patient, he might have infected the organism from his close contact with his cats at home.

Symptom relief depends on identification and removal of the nematode, however this is often difficult due to the migratory nature of the live nematode. Various types of management for intraocular nematode have been reported. Previously, the conventional treatment was surgical removal [1]. This method may cause considerable damage to the retina. In some cases the nematode may elude capture, creating serious ocular complications.

Laser photocoagulation showed successful result and can be done when the nematode moves away from the macula [3]. There are intravitreal or preretinal or subretinal nematode that were retrieved successfully by pars plana vitrectomy in several reported cases [2,4]. This is true for instance if the nematode is lying at the macula because other modes of treatment like photocoagulation may damage the macula. In this patient, photocoagulation or removal of nematode through vitrectomy was not done because it would jeopardize the macula and worsen his vision.

**Conclusions**
Cases of intraocular nematode, though not commonly encountered, continue to present the ophthalmologist with the problem of diagnosis and management and hence poorer prognosis to the patient.

**Consent**
Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

**Competing interest**
The authors declare that they have no competing interest.

**Authors’ contributions**
MY examined, evaluated the patient and wrote the manuscript. AAAA, MMS, SZ and ZAG examined and evaluated the patient. ZE edited the manuscript. All authors read and approved the final manuscript.

**Acknowledgements**

**References**


Figure Legends

Figure 1: Left fundus shows migrating nematode at macular area.

Figure 2: The nematode was not showing any movement anymore on day 2 of antihelminth.

Figure 3: The nematode appeared less well-defined, with some spots of mild hyperpigmented retina surrounding it after completion 5 days of antihelminth.