

HKJO Quiz



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Question

A 30-year-old woman was examined for sudden painless loss of vision in her left eye of 3 months' duration. A local ophthalmologist observed vitreous haze and retinitis proliferans. She was given a course of systemic doxycycline and betamethasone, but there was no improvement. Her systemic history was unremarkable. She was a non-vegetarian and she was a housewife by occupation. There was no history of contact with pets.

Ocular examination revealed visual acuity of 20/20 in the right eye and 20/20 in the left eye. Slit-lamp examination revealed multiple, old, fine keratic precipitates with no anterior chamber reaction. The iris showed multiple atrophic patches with several well-delineated, full-thickness holes. On gonioscopic examination, the anterior chamber angle was found to be open. **Figure 1** shows the fundal view of the left eye at this stage. A diagnosis of panuveitis in the left eye was made, and the treatment with topical steroids and mydriatics, along with oral prednisolone 60 mg daily, was prescribed. Posterior subtenon injection of triamcinolone 40 mg was also given.

On follow-up examination 6 weeks later, marked reduction of the vitreous haze was noted in the left eye. **Figure 2** shows the fundal view at this follow-up.

What is the diagnosis ?

(Answer and discussion on page 105)

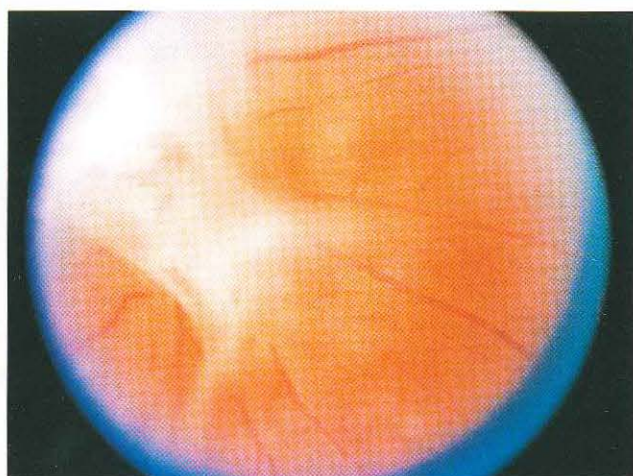


Figure 1. The fundal view of the left eye at presentation.

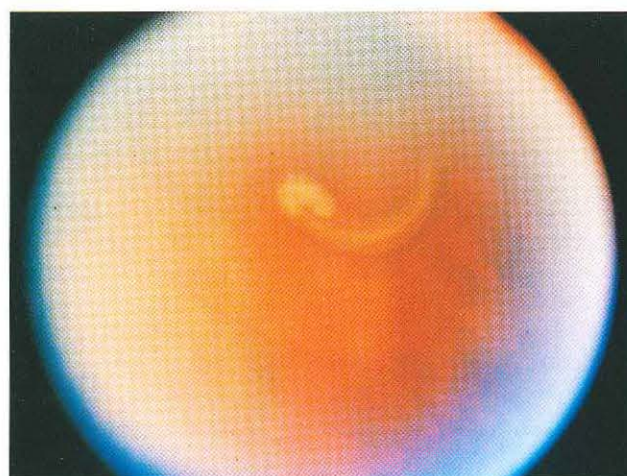


Figure 2. The fundal view after treatment.

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Answer

Figure 1 shows dense vitreous haze and fibrous proliferation over the optic disc and macula. Fundus photograph of the patient showing vitreous haze and inflammatory vitreous membrane over the optic disc. (Reprinted with permission from the Retina journal, Lippincott-Raven Publishers, Philadelphia, USA.)

Figure 2 reveals a live worm, of approximately 4 mm long and 1 mm wide, in the posterior pole of the vitreous cavity. Fundus photograph showing a coiled parasite in the vitreous cavity, which became visible after resolution of vitritis. (Reprinted with permission from the Retina journal, Lippincott-Raven Publishers, Philadelphia, USA.)

This was a case of worm infestation of the left eye in this patient. The worm was surgically removed and identified as *gnathostoma spinigerum*.

(Question on page 104)

Discussion

To the best of our knowledge, only 13 cases of intraocular *gnathostoma spinigerum* have been reported in the English literature to date. The parasite was found in the anterior chamber in most of these cases, causing severe iritis with or without hypopyon. It was found in the vitreous cavity in three cases.

Gnathostomiasis occurs mostly in Southeast Asian countries, especially Thailand, Burma, Malaysia, Japan, China and India. The common definitive hosts are domestic cats, dogs, and wild mammals. Man is an incidental host. Adult worms anchor to the stomach walls of the definitive hosts and lay eggs. Eggs are liberated in the stool of the animals and are hatched in fresh water as first-stage larvae. The larvae are ingested by fresh-water fish, frogs, snakes etc., which act as intermediate hosts. In

these animals, third-stage larvae develop. These infected intermediate hosts then may be ingested by other animals, such as chickens, pigs or ducks (paratenic hosts), where the third-stage larvae can exist without further maturation. Man can acquire infection either by eating the raw or inadequately processed meat of such intermediate or paratenic hosts.

Gnathostoma can cause various ocular lesions, including lid edema, orbital cellulitis, Bell's palsy, anterior uveitis with or without hypopyon, hyphema, secondary glaucoma, multiple iris holes, pallor of the optic disc, sclerosed vessels, subretinal hemorrhage, subretinal tract and retinal detachment with multiple holes. Simultaneous systemic involvement was not seen in any of the cases reported in the literature.¹ In this case the initial findings included severe panuveitis with multiple, full thickness iris holes. Dense vitritis with inflammatory membrane obscured the view until the inflammation was resolved with steroid treatment.

The mode of entry of this parasite into the eye is not clearly known. Fresh chorioretinal hemorrhage close to the optic disc has been observed in a few cases and has been thought to be the mode of entry. In this case no such chorioretinal hemorrhage was observed; however, an extensive irregular chorioretinal scar was seen that probably indicated the entry of parasite into the subretinal space.

If the worm is in the vitreous cavity, pars plana vitrectomy is indicated. The parasite can be gently grasped with intraocular forceps and removed through a sclerotomy wound, or it can be sucked into the port of the vitreous cutter. It is not unusual for the parasite to be cut or broken into parts.

Once the parasite is removed, inflammation should subside dramatically with topical and systemic steroid treatment. Chorioretinal atrophic scars may, however, persist.

References

1. Biswas J, Gopal L, Badrinath SS. Intraocular *Gnathostoma spinigerum*, Clinico-pathological study of two cases with review of literature. Retina 1994;14:438-44.