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Sir,

A technique for removal of a live nematode from the vitreous

Thelaziasis is a nematode infection of ocular tissue that is caused by *Thelazia callipaeda*, called oriental eyeworm,

which is found in China, India, Thailand, Korea, and Japan. This parasite has been identified in the conjunctival sac, lacrimal gland, and canal of animals such as dogs, cats, cows, badgers, rabbits, foxes, and monkeys in Asia. Thelaziasis in human is an opportunistic infection.¹ At least 40 cases of ocular infection in humans have been described.² However, intravitreal migration of living worm is extremely rare. In case of live worm in vitreous, removal without causing any damage to live worm is difficult. Damage to live worm in vitreous may liberate internal contents of worm, which can result in serious inflammation.

We describe a technique using minimum posterior hyaloidotomy with passive aspiration of live worm for safely removing it as a whole.

Case report

A 50-year-old man was injured in his left eye by shattered glass from broken lens of spectacles. Clinical examination of the eye revealed a 6 mm-sized, peripherally located, single, full thickness corneal laceration with iris incarceration and traumatic lens opacity. Corneal wound was repaired with interrupted 10-0 nylon sutures, and pars plana lensectomy with partial anterior vitrectomy was done. Two days after operation, a 15 mm sized live thread-like worm was found inside the vitreous cavity. Trans pars plana vitrectomy for removal of the worm was performed. Initially, minimum posterior hyaloid far from the live worm was excised with the vitreous cutter from the mid-vitreous in order to make a small opening in the posterior hyaloid surface. A nineteen-gauge cut-down needle was introduced into the vitreous cavity and placed at the opening of posterior hyaloid surface. By gradual elevation of infusion bottle, the 15 mm-long live worm was captured and removed as a whole in a 50 cm³ syringe connected with the 19 gauge cut-down needle (Figures 1 and 2). We did not apply active suction pressure to maintain ocular stability.

After removing the live worm in the vitreous, remained vitreous was removed with vitreous cutter.

Comment

T. callipaeda is a member of the phylum Nematoda, order Spirurida, suborder Spirurata, superfamily Spiruroidea. Adult worms look like creamy white threads; they are 4.5–17 mm long and 0.25–0.85 mm in diameter. *T. callipaeda* is an unsegmented invertebrate with distinct

Figure 1 (a–d) Serial photos of the moment of capturing the intraocular *Thelazia Callipaeda*. The height of infusion bottle was maximal and resultant pressure difference across the eyeball forced the eyeworm (arrow) enter into a 50 cm³ syringe through 19-gauged cut-down needle (arrowhead).

Figure 2 Gross appearance of *Thelazia callipaeda* from the present case (scale in mm).

oral and anal parts³. The mouth is without lips and consists of two concentric rings of flattened papillae around a central opening. Unlike *Gnathostoma spinigerum*, which is a close relative of *Thelazia* and is quite frequently found within the eye and causes major tissue destruction due to possessing rows of curved hooks and posteriorly angled spines in a cuff around the mouth used for boring into tissue, *T. callipaeda* does not possess the organs to enable it to burrow any body structure.

There have been only a few case reports about intraocular infestation by *T. callipaeda*, among which all was found in the anterior chamber except one intravitreal infection case.^{4–7}

We think that the worm entered into the eye through corneal lacerated wound. On consultation to the Department of Parasitology, it was identified as an adult worm of *T. callipaeda* (Figure 2). After the operation, anterior chamber and vitreous cavity were quiescent without serious inflammatory reaction.

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Sir,
Hemiretinal arterial supply by the cilioretinal artery

We read this report with interest.¹ However, we feel that the evidence that the arteriole in question is a cilioretinal artery, as opposed to an early posterior bifurcation of the central retinal artery, is not convincing.

The claim that in the early venous phase of the FFA, the dye appears faded in the upper arteriole, whereas still bright in the lower arteriole, is not sufficient evidence to support a diagnosis of a cilioretinal artery. If the dye had entered the superior arteriole earlier than the inferior, one would expect to see the superior venous filling to be at a later stage than the inferior. On the contrary, the published frame shows symmetrical lamellar flow in both the superior and inferior retinal venous circulation, suggesting that the dye entered their feeding arterioles at the same time.

An earlier frame, were it to show simultaneous filling of this arteriole and the choroid in the absence of filling of the inferior arteriole, would be conclusive, but was presumably not available.

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Sir,
Hemiretinal arterial supply by the cilioretinal artery

Skarmoutsos and Kyle have made a good point regarding the comparison of the superior and inferior venous filling in this case. The venous filling does appear to be at the same stage in the upper and lower systems. There is trilaminar flow just visible at both of the first main bifurcations of the superior and inferior hemiretinal veins. Trilaminar flow occurs at the junction of two veins with bilaminar flow, with the inner laminar of each vein joining to produce three laminae.¹ If this is a cilioretinal artery, it would have fluoresced along with the choroid 1–3 s before the central retinal artery, and in theory the venous stage would then start 1–3 s early in the superior venous system with more fluorescence present than in the picture shown.

The patient in this case had the FFA performed for unrelated reasons, and unfortunately this was the earliest frame available. Earlier frames of the fundus fluorescein angiogram would have been conclusive to identify this as a cilioretinal artery, and without these there is no definitive answer. The cilioretinal artery was an incidental finding, and we felt that it was inappropriate to repeat the FFA just for personal gain.

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