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***Letter to the Editor***

# Surgical Management of Live Intraocular Parasite in the Anterior Chamber

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It was with great pleasure that we read about the case report- An Encounter with a Worm in Anterior Chamber: A Case Report ( Pradhan D et al A Worm in Anterior Chamber Nepal J Ophthalmol 2018; Vol 10 (19): 98-101). Expressing our gratitude to the author, we would like to first thank the authors for submitting such an interesting case and also make some contributions to it.

## Comment

It has been indicated that after the ocular examination and discovery of the live parasite – "Pilocarpine 2% was instilled to prevent posterior migration of the worm." The authors acted very appropriately because mishaps have occurred by overlooking this aspect.

Paul et al, (Paul and Pammal, 2008) in their case report described finding a parasite mimicking Angiostrongylus sp. Co-incidentally, it was in a Nepalese man who had presented with chronic and on and off granulomatous uveitis. They identified a live parasite and attempted surgical removal. It resulted in the worm migrating to the posterior segment and never to be found again. The patient initially had a vision of 20/80 in the affected eye, which deteriorated to NPL and became phthisical over a period of 2 years. The authors, however, do not describe if they had used a miotic or any other agent to immobilize the worm.

It should, however, be noted that pilocarpine may help in some but not all cases. Due to the inflammatory reaction – such eyes tend to have synechia and exudative reaction. Hassan et al, (Hassan et al., 2016) in their case report described a similar scenario where extensive synechia with fibrous ring was present with an irregular pupil. The parasite in their case was Loa loa. Similarly, Saumya Pal et al,(Saumya Pal et al., 2011) in their case report described pupil failing to constrict despite using pilocarpine when attempting to remove an intraocular live parasite. Such cases should be approached cautiously as a sudden synechial break during use of surgical viscoelastic devices can cause a change in pressure gradient and promote the migration of the parasite to the posterior chamber/segment.

In such scenarios, use of neuroparalytics – such as plain lidocaine(preservative-free) or parasympathomimetics –such as carbachol

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can be of great value. Mehta et al(Mehta et al., 2006) have described using intracameral preservative-free 0.3 ml intracameral lignocaine. Similarly, Shah et al and Venugopal et al(Shah et al., 2004; Venugopal et al., 2014) have further added that in case of unavailability of lidocaine, preservative-free 1% Xylocaine is safe, corneal endothelium friendly and may also be used. Lidocaine is an amide-linked local anesthetic agent, which acts by blocking conduction of nerve impulses by their direct action on voltage-gated sodium channels hence paralyzing the parasite. On the other hand, Mellin et al (Mellin et al., 1983) have reported that use of cholinergic agents such as carbachol causes flaccid paralysis in worms and also has an additive effect as a miotic agent, hence decreasing motility and risk of migration to posterior chamber.

The authors describe the surgical technique where they created a side port and the live worm was recovered with help of forceps. Using a "touch" technique can cause parasite to elicit hypermotility increasing risk of posterior segment migration or difficulty in extraction. It also can cause damage to it capsule which can induce a hypersensitivity reaction(Santiago and Nutman, 2016) which could be disastrous.

Use of viscoelastic agents to visco-express the worm has been described earlier(Mehta et al., 2006). We used a similar but a modified technique to deliver a live parasite of similar dimensions as the authors described. We believe this may further ease the management of such cases if there were to be encountered in the future by ophthalmologists. (Khatri A, Khatri BK., 2017). The parasite in our case was confirmed by parasitologists to be Ascaris lumbricoides.

We instilled topical pilocarpine and obtained miosis and operated under subconjunctival anesthesia. We created a clear corneal incision using 2.8mm keratome in the close but not same quadrantic location of the parasite to prevent accidental contact. Another incision was made at the opposite angle to the location of the parasite and we used viscoelastic material to visco-express the parasite in toto. A suture trying or a McPhersons' forceps can be helpful to gape the opposite side port to aid in the easy expression of the parasite

Recently, we again encountered a case with a live parasite in the anterior chamber. (Figure 1) We used a similar technique as mentioned above and used carbachol as a neuroparalytic and miotic agent. We successfully viscoexpressed the parasite with a help of a capsulorhexis forceps to gape the surgical wound. (Figure 2)

It is very important to recognize in our part of the world that a cause of uveitis could be secondary to a parasite. A live parasite should always be surgically removed and a microbiological/parasitological assessment is mandatory.

Authors have no disclosures to make.

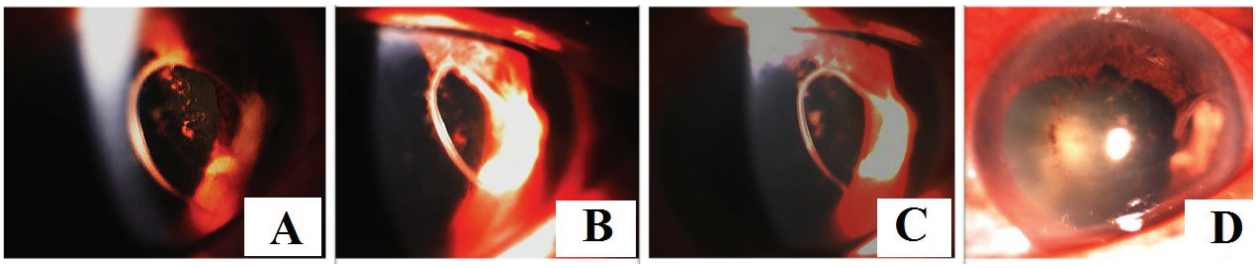


**Figure 1:** Notice the change in the shape and position of the live worm (A-D) when the beam of light is shown

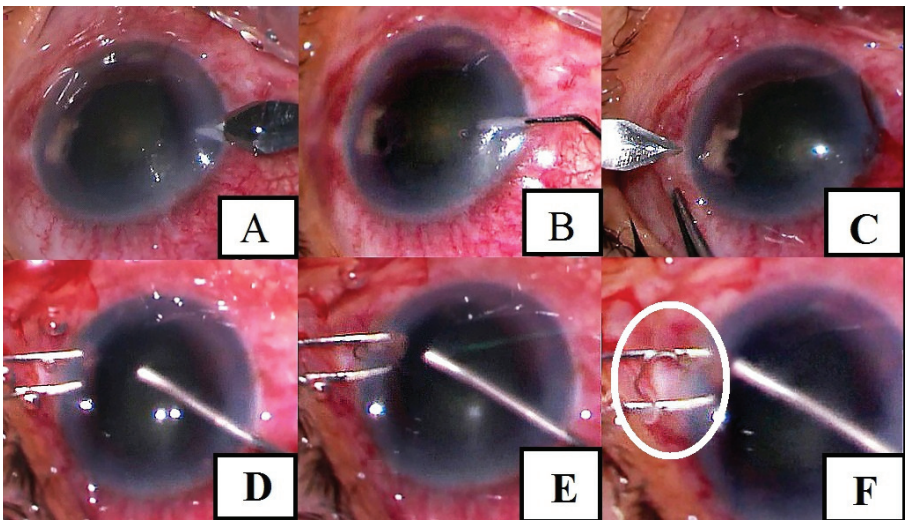


**Figure 2:** Side port created at the opposite side to the location of the parasite using a keratome.(A) Carbachol Injected in the anterior chamber (B). Another side port created adjacent to the position of the parasite(C). Viscoelastic device injected into the anterior chamber in a continuous manner while slightly depressing the side port adjacent to the parasite downwards (D-E). Parasite expressed in toto (F).

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