Case Report
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**ABSTRACT**
Human ocular infestation by a live filarial adult worm is a rare occurrence. These worms are caused by organisms such as Brugia malayi, Wuchereria bancrofti, Dirofilaria repens and many others. An unusual case of periocular filariasis was diagnosed at the Lusaka Eye Hospital in a female patient aged 47 years. This was in a patient whose profession is to deal with animals. She presented with twitching and feeling of movements on the eyelid. Following clinical examination and laboratory investigations, diagnosis of periocular filariasis was confirmed. The treatment consisted of the surgical extraction of the parasite, antibiotics, steroidal anti-inflammatory and anthelminthic drugs. The intraoperative and postoperative evolution of the case was favorable.

**INTRODUCTION**
The ocular manifestations of filariasis are common in the eyelids, iritis, retinal hemorrhages, or the presence of microfilaria in the lacrimal gland secretion [1]. Intraocular infestation by the filarial worm is a rare occurrence in humans and most of the published reports are from Southeast Asia [2]. Entry into the anterior chamber may be through ciliary vessels. Lymphatic filariasis caused by Brugia malayi occurs in South Asia [3]. Brugian filariasis is mainly a rural disease and is transmitted by mosquitoes of the genera Mansonia, Anopheles, and Ae des. Domestic animals like cats and dogs may serve as reservoirs of infection [4]. During a blood meal, mosquitoes ingest microfilaria and they become infective in 10 days. Humans contract the disease through repeated episodes of mosquito bite.

Dirofilaria repens (Spirurida, Onchocercidae) is a nematode that parasitizes mainly dogs (Canis lupus familiaris) and other mammals, but may also infect humans, being considered a zoonotic agent. The parasite’s most frequent localization in humans is in subcutaneous and ocular tissue (75.8%) [5,6], especially in the ocular area, which is accessible to mosquitoes that act as vectors. Adult parasites are found in subcutaneous tissues while the larvae (known as microfilariae) are found in the blood of the infected animals. They are ingested by mosquitoes of genera Ae des, Anopheles, or Culex during the blood meal. The larvae grow and become infective inside the mosquito’s body. Infective L3 larvae may be transferred to humans through inoculation when the mosquitoes feed.

**CASE SCENARIO**
A 47-year-old female patient, living in the USA who has frequent trips to Zambia and other African countries to carry out research in animals such as dogs, cats, pigs, rabbits, presented at a private hospital complaining of episodes of swelling of the lower and upper eyelids of the left eye. The patient could feel something moving in her eyelid for a period of 2 months before which she was asymptomatic. She was also complaining of twitching, discomfort in the upper eyelid, generalized body itchiness and episodes of fever. The private hospital referred her to Lusaka Eye Hospital for further management.

Ocular examination revealed a visual acuity of 6/6 in both eyes, normal intraocular pressure (14 mmHg in the right eye RE and 17 mmHg in the LE). A round formation containing a mobile thing in the subcutaneous tissue of the upper eyelid was observed. Examination of the fundus of the eye revealed a well-defined disc and macula and also normal blood vessels without the presence of other larval forms. Ultrasound performed revealed a larva in the eyelid. General clinical examination did not reveal the presence of subcutaneous nodules. Heart ultrasound, abdominal ultrasound, and chest X-ray showed normal relations. Based on clinical examination and investigations, a diagnosis of subcutaneous ocular parasitosis was made.

The parasite was surgically removed. A worm removed was white, translucent and measuring 8 cm. Surgery was successful and there were no post-surgical complications. Further treatment was instituted with Diethylcarbamazine 50 mg TID on days 1 and 2, then 100 mg TID on day 3 and 125mg TID on days 4 to 14.

**DISCUSSION**
The patient attended to at Lusaka Eye Hospital had a rare presentation of extraocular filariasis which did not give a lot of challenges with the surgical management. Microfilariae are more commonly known to cause intraocular filariasis than adult worms [3]. W. bancrofti and B. malayi are main causative organisms to cause uveitis secondary to intraocular filariasis in the Indian subcontinent [4]. W. bancrofti is a helminth belonging to class nematodes. Man is the definitive host, the intermediate host being species of Anopheles mosquitoes. In this case report, the interaction between the patient and domestic animals predisposed her to mosquito bites through which the larvae could be transmitted to her easily.

Adult worms live in the lymphatic system, discharging live embryos (microfilaria) into the bloodstream. Adult filarial worms are thread-like structures that live in the...
subcutaneous tissues and the lymphatic system. They sexually reproduce microfilaria, the first larval stage. Microfilariae are ingested by hematophagous arthropods, where they develop into infective larvae that grow in the vertebrate host and mature into adult worms. The exact route of invasion of microfilariae into the eye is still unknown. They enter the eye probably through the long and short posterior ciliary vessels, cerebrospinal fluid, or the optic nerve sheath [5]. Once a parasite is identified, it should be removed live and intact to prevent inflammation, damage to the eye and anaphylaxis. In the patient under discussion surgery was done cautiously in order to prevent any reactions. Ocular Filariasis though not commonly seen in the Zambian community, it is very important to always be on the lookout especially in patients who could present from other parts of the world. In this case the patient was not a resident of Africa but the fact that she handled the definitive hosts of the parasite, infestation could arise from there. It is therefore very important to have a high index of suspicion, to take a good history and perform a thorough ocular examination in patients presenting with ocular swellings. In the same vein the patients with uveitis of suspicious origin associated with diseases like elephantiasis and having had serious contacts with domestic animals must undergo thorough examination to rule out ocular filariasis.

CONCLUSION
Periocular and ocular filariasis is not common in our Zambian population but can be seen in patients coming from outside Zambia especially with the history of interacting with animals such as cats and dogs. Accurate diagnosis and early treatment bring out good outcome.

LIST OF REFERENCES