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Case Report

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AN ADULT LOA LOA WORM IN SUBCONJUNCTIVAL SPACE; AN ATYPICAL PRESENTATION OF LOIASIS IN SOUTH GUJARAT, INDIA

***Dr. Charul Jain, Dr. Nikunj Koladiya, Dr. Mansi Gupta and Dr Siddharth Singh Maanju**

India.

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***Corresponding Author**
Dr. Charul Jain
India.

ABSTRACT

Loa loa, a filarial nematode eye worm, is endemic in tropical rain forest areas of Africa. Travelers and migrants are more commonly found to be infected in India. In the past 100 years, very few cases have been reported in India. We report an unusual case of adult LOA LOA in subconjuctival space in 45 year old female patient resident of rural area in Gujarat, India, with no history of travel to endemic places which was not associated with calabar swellings or microfilaremia. It was diagnosed by the morphology of the adult worms removed surgically under topical aneasthesia.

INTRODUCTION

Loiasis disease of submucosal tissue and subcutaneous tissue caused by infection of the Loa loa, also known as the African Eye Worm.[1] Loa loa is endemic in Central,[2] and West Africa, where it is transmitted by flies Chrysops.[1]

Adult worms live freely in subcutaneous space and may occasionally migrate into the subconjunctival space.[3] where they invariably produce symptoms such as ocular pain, pruritus, tearing, foreign body sensation.[4]

Cutaneous manifestations including Calabar swellings are pathognomonic and are likely due to a hypersensitivity response elicited by migration of the adult worm through tissue.

Definitive diagnosis of loiasis is made by detection of worm in subconjunctival, anterior chamber, vitreous cavity or visualization of microfilariae on blood smear. Surgical removal of the worm from the eye allows for laboratory identification of the species.

However, exception of report by Lakshmi et al,[5] and Kumari V et al.[6] in none of the reports, microfilaremia was demonstrated in peripheral blood smear, thus leading to the conclusion that perhaps immature worms were present in these otherwise asymptomatic patients.

CASE DISSCUSION

A 46-year-old lady presented with complaints of swelling in the right eye associated with redness and itching since 14 days. There was no history of travel outside India or direct contact foreigners. She had no past history of similar complaints.

On ophthalmic examination, her vision was OS UCVA 6/6 for distance, Near vision +1.75D N6.Whitish linear nodular, non tender infero temoporal swelling was seen in right eye. The swelling was non tender, extra ocular movement were full unrestricted in all gazes. Left eye was within normal limit.

No other systemic abnormalities were present. No localized swelling noticed by the patient in any part of body.

Patient was considered for surgical excision under topical anesthesia. A cylindrical ,thread- like structure was noted after conjunctival insicison Using serrated forceps,coiled structure was carefully removed from subconjuctival space and conjunctival wound was closed with 8-0 vicryl suture. The specimen was sent for microbiological examination.

Microbiological examination report confirmed infestation of eye worm “L. loa”. On microscopic examination – cylindrical, white structure having head, body and blunt tail and head which was devoid of lips.

After by microbiological confirmation of adult Loa Loa worm, blood reports along with peripheral blood smear and differential eosinophil counts three times a day, 10:00 am 2:00 pm and 12am were done. PBS and other blood reports were normal, suggesting no microfilaremia.

Patient was started on topical low dose steroids and antibiotic combination [moxifloxacin (5%) with loteprednol (0.5%)] three times a day and lubricating eye drops (carboxy methylcellulose 0.5%) six times a day.

DISCUSSION

Loiasis is a filarial disease caused by infection with nematode Loa loa, known as African eye worm. Loiasis is transmitted to humans by bites of tabanid flies like Chrysops silica and Chrysops dimidiate, which introduce

larvae into subcutaneous tissues of human hosts.[8] Over six to twelve months, larvae develop within human subcutaneous tissues into adult worms, which measure 30-70 mm in length and 0.3-0.5 mm in diameter.[8] Once mature, adult worms continue traveling through the subcutaneous tissue.[8] Immature larvae or microfilariae are released by adult female worms and migrate between the host's bloodstream and lungs in a diurnal pattern, hence the timing for blood collection is crucial for correct diagnosis. Characteristic morphology of microfilaria and its special features are important for identification.

Loiasis can present with subconjunctival migration of adult worms, which may be associated with conjunctivitis, epiphora, foreign body sensation, and transient eyelid swelling.[8]

Symptoms are typically self-limited. While the benign subconjunctival migration of adult Loa loa worms is common, other ophthalmic manifestations have been reported rarely. Intraocular adult filarial have been noted in the anterior chamber, which may cause corneal edema, uveitis, hypopyon and secondary cataract formation.

Suspected cases of ocular filariasis, usually, sheathed microfilaria in blood with diurnal periodicity and showing a column of nuclei up to the blunt tail tip typically hints toward Loa loa infection. Similarly, unsheathed microfilaria from skin or tissue around the eyes with no periodicity and with pointed tail tip without nuclei indicates Onchocerca infection, and unsheathed nonperiodic microfilaria in blood with blunt tail tip and nuclei indicates Mansonella infection. Microfilaria of Wuchereria bancrofti and Brugia malayi is nocturnal and sheathed and found in blood with the absence of nuclei in the pointed tail tip and presence of two widely spaced nuclei in the tail tip, respectively.[9] In this case, microfilaria could not be found in peripheral blood smear.

Treatment for LOA LOA is controversial and medical treatment poses significant side effects.

1st-line treatment, diethylcarbamazine (DEC), utilizes immune response to kill both microfilaria and adult worms.[8] Complete treatment may require repeated doses. In patients with high loads of microfilaria, DEC treatment posses significant risk of encephalopathy.[10]

Second line treatments include ivermectin and albendazole.[10] Ivermectin treatment is lethal to microfilaria but not adult larvae.[8] Ivermectin may also lead to encephalopathy in patients with high microfilarial loads (30,000 microfilariae/mL.).[9] Albendazole is thought to kill adult parasites by inhibiting microtubule formation and the uptake of glucose, but it does not affect microfilaria.[8]

Generally advanced disease are more likely to suffer significant long- term vision loss, if intraocular filariae are removed prior to development of intraocular membranes may be able to return to their normal visual acuity.

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