

SUBCONJUNCTIVAL WUCHERERIA BANCROFTI IN CALABAR: A CASE REPORT

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ABSTRACT

Subconjunctival worm is a manifestation of ocular filariasis, one of the Neglected Tropical Diseases (NTDs) which constitute an important public health problem in Nigeria. The most commonly reported subconjunctival worm is loaloa which in some occasions is associated with the so called 'Calabar swelling'. However there exist few reports of ocular filariasis caused by *Wuchereriabancrofti* involving the eyelids, conjunctiva, cornea, anterior chamber, and uvea with variable presentations. We report a case of a 31-year-old female, constitutionally asymptomatic patient who presented with *Wuchereriabancrofti* filarial worm encysted in the subconjunctival space.

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INTRODUCTION

Ocular worms in general are more prevalent in certain geographical regions with favorable environmental factors. The epidemiology of these parasitic ocular conditions sometimes reflects the habitat of the causative parasites as well as the habits and the sanitary condition in the area where they occur. However, there exist cases where these parasitic worms are imported from the so-called endemic region to the "free area".

Wuchereriabancrofti is a human parasitic round worm and a major cause of lymphatic filariasis. Human ocular infestation by *Wuchereriabancrofti* is a rare occurrence compared to the infestation by loaloa and so not frequently reported. The few cases reported, mostly from South-East Asia had documented the involvement of the eyelids, conjunctiva, cornea, anterior chamber, uvea and vitreous.¹

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Depending on the part of the body that is affected, some patients could present with no symptom while others may present with symptoms of ocular inflammation that may be associated with reduced vision and or reduced quality of life.

Diagnosis is based on species microscopic identification, isolation of microfilaria from a peripheral blood smear. Treatment is with diethyl carbamazine citrate along with systemic steroids

Case report.

A 31-year-old female farmer presented to the eye clinic of university of Calabar teaching hospital, Calabar, Nigeria, with a sensation of worm-like movements and foreign body sensation in the right eyes which started 3 years prior to presentation. There was associated history of intermittent itching, but no redness of the eye, no loss of vision, no swelling of the eyelids or any part of the body. Until a year prior to presentation, she lived in a village endemic for lymphatic filariasis in the Northern senatorial district of Cross River State, Nigeria where she was majorly involved in farming activities.

She reported occasional visualization of a life worm that wriggled underneath the white part of her eye by the relatives, but no attempt was made to remove the worm since she was pregnant at that time.

At presentation she had a best corrected visual acuity (BCVA) of 6/6 in both eyes. The only significant ocular finding was a localized encapsulated subconjunctival worm in the inferotemporal aspect of the right eye. The worm was found to be lifeless, coiled over itself and enclosed in a surrounding cyst wall (fig. 1 and 2). Systemic examination was normal, no evidence of cutaneous lesions, subcutaneous swellings or nodules. A provisional diagnosis of subconjunctival worm, most probably loaloa, was made.

She was subsequently taken to the operating room and after appropriate aseptic preparation, about 1ml of subconjunctival injection of 2% lignocaine with Adrenaline was infiltrated around the encapsulated worm. A small conjunctival incision was made just inferotemporally and adjacent to the worm. A milky-coloured encapsulated lifeless worm coiled over itself was carefully excised en bloc with non-toothed forceps and Westcott's conjunctival scissors and placed into a sample bottle containing normal saline solution. The conjunctival defect was closed with 7/0 vicryl interrupted sutures. Topical antibiotic and steroid preparations were given post operatively.

The excised worm was immediately sent in the normal saline solution to the microbiology/ parasitology laboratory for specie identification. The morphological appearance showed a whitish, cylindrical, worm tapered at both ends measuring 8.0mm in length and 0.3mm in breadth at the widest part. Microscopic findings were those consistent with a growing adult

filial worm viz: a translucent, smooth external cuticle and no chitinous exoskeleton, blunt rounded head end and pointed tail end with two spicule-like structures, unsegmented body structures with no appendages and no reproductive structures. All the identified features were consistent with *Wuchereriabancrofti*.

Blood work up which included full blood count and differential for eosinophilia, peripheral daytime and nighttime serial blood samples for microfilarial examinations with Giemsa stain and periodicity evaluation were requested. However, patient did not come back for follow up.

Discussion

Wuchereriabancrofti is a helminth belonging to a class of Nematodes most prevalent in Asia, Nile delta and Africa. Man is the definitive host while the intermediate host is a species of Anopheles mosquitoes. Adult filarial worms are thread-like structures that live in the subcutaneous tissues and the lymphatic system causing lymphatic filariasis which is one of the neglected tropical diseases. They sexually reproduce microfilaria which are discharged into the bloodstream. Microfilariae are ingested by hematophagous arthropods, where they develop into infective larvae that grow in the vertebrate host and mature into adult worms.¹

An estimated 1.34 billion people in 81 countries of the world are at risk of filariasis and about 40 million people suffer from the clinical manifestations of the disease mainly elephantiasis (lymphoedema) and hydrocele.² In Nigeria, Lymphatic filariasis (LF) is prevalent in all states and geopolitical zones and about 106 million people are at risk of the disease. A total of 241 lymphoedema and 205 hydrocele cases have been reported from mapping surveys

conducted in the country however ocular filariasis with *Wuchereriabancrofti* in particular has not yet been reported.³

Ocular parasitism by different species of adult filarial worm has been reported in the literature. The most commonly reported subconjunctival worm in Nigeria is loiasis, the eye worm of Africa, and these are mostly seen among the residents of the endemic areas in the rural communities but cases among urban dwellers have also been reported.^{4,5} However there are reports of ocular bancroftian infections in Asia. Barot et al⁶ reported a live *Wuchereriabancrofti* in subconjunctival space of a 61-year-old female who presented with lid oedema, localized chemosis, conjunctival hyperemia. In the same vein, Nanavaty⁷ and colleagues found a subconjunctival worm in a symptomatic patient who also had a limb involvement. Khokhar et al⁸ reported a live *Wuchereriabancrofti* in the Anterior Chamber of a 34-year-old male who presented with photophobia. Ganesh et al⁹ on the other hand reported an intraocular *Wuchereriabancrofti* that presented as panuveitis and secondary glaucoma.

The patient was resident in a village in Northern senatorial district of Cross River State, Nigeria which is a known to be endemic for filariasis.³ The patient had knowledge of the worm in her eye for a period of 3 years before she presented for care. Except for the sensation of movement which she had initially for about 2 years prior to presentation, she was essentially asymptomatic. A provisional diagnosis of loiasis which is rather common in the area was made, however, *the worm was identified as Wuchereriabancrofti* by microbiologist.

This case is reported to increase awareness on the possibility of an ocular involvement of infection by the Bancroftian worm in the setting where LF is endemic which could

contribute to the burden of preventable blindness. It should also be noted that, although nematode identification at the species level might be supported by anamnestic information, such as host and geographic location, a reliable definitive species identification with proper morphologic or molecular diagnosis is however needed. Our limitations in this case report was the lack of opportunity to carry out cytologic analysis studies and polymerase chain reaction assay detection of *Wuchereriabancrofti* DNA in peripheral blood due to patient's inability to report back for peripheral blood smear examination and follow up.

CLINICAL PICTURES: fig 1 and 2 show encapsulated lifeless worm coiled over itself.

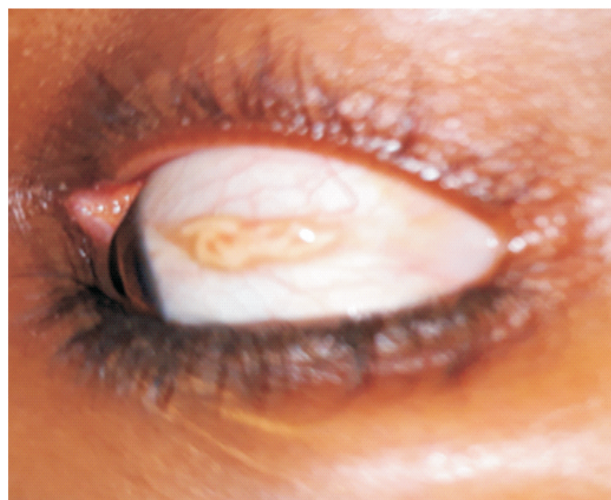


Figure 1.

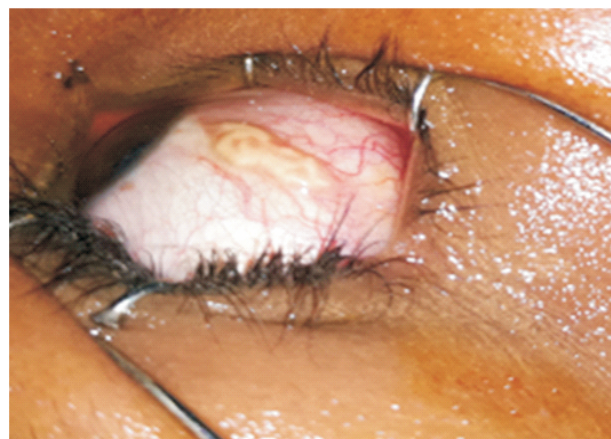


Figure 2

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