

## CASE REPORT

# MID ARM SWELLING- A RARE PRESENTATION OF FILARIASIS

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## ABSTRACT

Bancroftian Filariasis is a tropical and subtropical disease caused by *Wuchereria bancrofti* and transmitted by the *Culex* mosquitoes. The diagnosis of it is conventionally made by demonstrating microfilariae in the peripheral blood smear. Microfilaria and adult filarial worm have been incidentally detected in fine needle aspirates of various lesions. We here report a rare case presentation of Bancroftian filariasis in 20 years old asymptomatic male coming from an endemic area with swelling in subcutaneous tissue of left mid-arm. Our aim is to highlight the finding of microfilaria in fine needle aspiration cytology in an unsuspected case at an unusual site.

**Keywords:** microfilaria, fine needle aspiration cytology, subcutaneous nodule in arm

## INTRODUCTION

The medical literature documents filariasis back to 600 BC by Sushruta, recognizing the clinical manifestation of elephantiasis which was referred to as elephantiasis arabicum.<sup>1</sup> Filariasis is caused by slender threadlike nematodes belonging to super family Filarioidea, can predominantly involve skin and subcutaneous tissue (*Onchocerca volvulus* and *Loa Loa*) or lymphatic system (*Wuchereria bancrofti* and *Brugia malayi*).<sup>1,2,3,4</sup> Bancroftian filariasis is widely distributed throughout the tropics and subtropics and in India in about 243 districts.<sup>3,5,6</sup> *W. bancrofti* is the most common cause of filariasis in India and is transmitted by *Culex* mosquitoes.<sup>3</sup> Filariasis may produce acute as well as chronic clinical manifestation or a person may remain asymptomatic in endemic areas.<sup>3</sup> Usually the disease follows a chronic course with predominant involvement of the lymphatic system of lower limbs, retroperitoneal tissue, spermatic cord and epididymis.<sup>3</sup> Despite the large number of people affected, it is unusual to find microfilaria in routine cytology smear and their recognition is generally considered an incidental finding.<sup>1,5,7</sup> Filariasis presenting as subcutaneous swelling involving upper extremities is rare.<sup>3</sup>

## CASE REPORT:

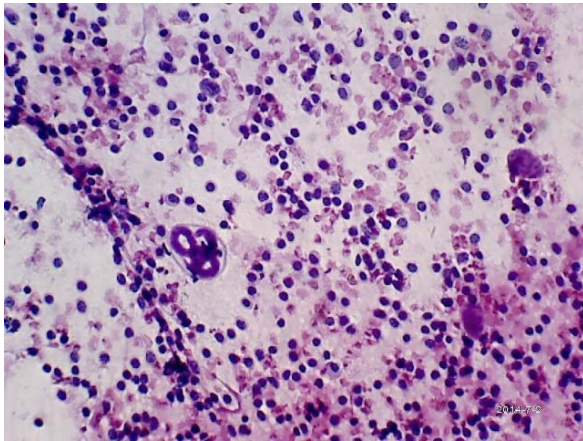
A 20 years old male from Sultangadh region of Uttar Pradesh visited in our hospital OPD with left mid-arm swelling near elbow joint. It was gradually increasing in size over last ten years. At present swelling measures 2.0X1.5 cm. (Fig.1) with mild pain. Patient was not having any other complaints. General and systemic examination was unremarkable. Swelling was mildly tender. USG of the swelling showed dilatation of the

lymphatics. Fine needle aspiration (FNAC) of the swelling advised. FNAC of the swelling done in aseptic conditions, which yielded straw colored fluid. Smears were fixed in methanol for 30 minutes and stained by hematoxylin and eosin. Microscopic examination of the smear showed moderately cellular smear with mainly lymphocytes and other inflammatory cells like histiocytes, eosinophils and polymorphs. There is also presence of numerous microfilariae. Morphologically the microfilariae showed presence of hyaline sheath, cephalic space length: breath ratio of 1:1, nuclei were spherical, regularly placed, appeared in a row, well separated without any overlapping and absent at cephalic end and tail tip. (Fig.2&3). Nocturnal peripheral smear showed no microfilaria

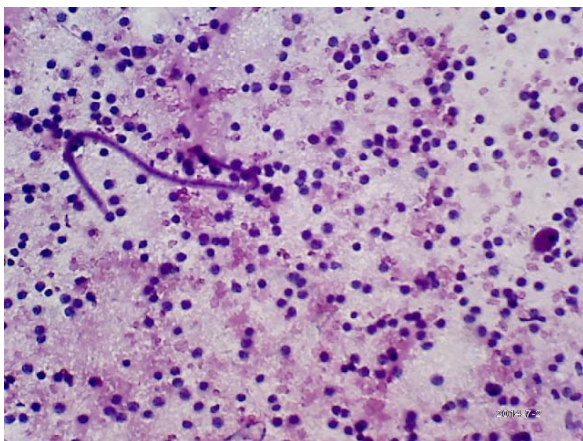


**FIGURE 1:** Mid arm subcutaneous swelling near elbow.

Other investigations were Hb- 14.9 gm%, TC- 5,870/cmm., Differential count shows N- 51%, L- 41%, E- 5%, M-3%, absolute eosinophil count was 295 cells and platelet count was 2,19,000 /cmm. The immunochromatography test of serum showed positivity for anti filarial antibody. Patient was treated with Diethylcarbamazine. There was marked reduction in size of the swelling which was radiologically confirmed.



**FIGURE 2:** Microfilaria in sheath, H & E 40X



**FIGURE 3:** Microfilaria in inflammatory background, H & E 40 X.

## DISCUSSION

Filariasis is a major public health problem in tropical countries, especially India, China, Indonesia and some parts of Africa and South America.<sup>1,2,6,8</sup> It is endemic all over India.<sup>6</sup> In India, *Wuchereria bancrofti* is distributed chiefly along the sea coast and along the banks of big rivers (except Indus). But it is also been reported from Rajasthan, Punjab, U.P. and Delhi.<sup>3, 8</sup> India contributes to about 40% of the total global burden of disease, about 120 million people are currently infected worldwide and in need of treatment including 40 million disabled and incapacitated by the disease.<sup>7</sup> Clinically filariasis can be of two major categories – filariasis of skin and subcutaneous tissue and lymphatic filariasis.

*Onchocerca volvulus* and *loa loa* are most common organisms reported in former, and *Wuchereria bancrofti* and *Brugia* species (*B. malayi* and *B. timori*) are two most common species in latter.<sup>1,7,8</sup> *W. bancrofti* is responsible for 90% and *Brugia* species for 10% of the total numbers of infections worldwide.<sup>7</sup>

The adult of the lymphatic filariae inhabit lymph vessels, where blockage and host reaction can result in lymphatic inflammation and dysfunction, and eventually in lymphedema and fibrosis. Other filariae mature in skin and subcutaneous tissue, where they induce nodule formation and dermatitis; migrating filariae of these species can cause ocular damage.<sup>6,8</sup> Microfilarial larva in patients can reach tissue spaces due to vascular or lymphatic obstruction, leading to extravasations of larva.<sup>3</sup> *W. bancrofti* is detected by fine needle aspiration cytology (FNAC) at different sites like breast, thyroid, lymph node, liver, lungs and few cases have been reported in bone marrow and body fluids.<sup>1,6,8</sup> Appearance of microfilaria in subcutaneous nodule in arm is rare presentation.<sup>1</sup>

In our case subcutaneous nodule aspirate showed sheathed microfilaria, *W. Bancrofti* was confirmed by morphology and filarial antibody test in serum. Subsequent examination of night blood smear from patient failed to demonstrate microfilariae which is in accordance with the reports by other authors.<sup>1,5,8</sup> thus suggesting that filaria can exist without microfilaremia.<sup>1,5,8</sup> Blood eosinophil counts were within normal range in our case, as also reported by other authors.<sup>1,5</sup> Majority of cases in endemic regions neither show microfilariae in blood, nor any symptom,<sup>1,4</sup> as our patient was having this swelling since 10 years without any other complaints. Patient was referred to clinician and he responded to Diethylcarbamazine treatment. These observations suggest that there is no consistent relationship between filarial infection and blood eosinophilia, which in turn reflects the difference in host response to parasite from person to person. Diagnosis of filarial infection by detection of antigen would obviate the problem in low level of microfilaremia, but such tests are available only in reference laboratory and are expensive.

## CONCLUSION:

Most of the parasitic infections are curable if diagnosed promptly. FNAC plays significant role in diagnosing filarial infections in asymptomatic, unsuspected cases of filaria in countries like India where it is endemic, thus avoiding more severe manifestations of lymphatic filariasis. High index of suspicion is required to diagnose such unusual presentation of *Wuchereria bancrofti*. Careful screening of cytological smear can render definitive diagnosis of early, asymptomatic and clinically unsuspected cases of bancroftian filariasis, especially in those cases where microfilariae is absent in peripheral blood.

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