

Case Report

## Incidental Detection of *Wuchereria Bancrofti* on Cytology in a Subcutaneous Swelling in Medial Aspect of Arm: A Case Report

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### ABSTRACT

Filariasis is a common parasitic disease posing major health problem in South East Asian countries including India. It is transmitted by bite of mosquito. Lymphatic filariasis is a common presentation in Indian subcontinent. The usual form presentation of the disease is as hydrocele, acute or chronic lymphatic disease or subclinical microfilaremia. Finding of *Wuchereria Bancrofti* in a cytological smear from upper arm swelling is a rare presentation. We discuss here a case of 40 year male with a subcutaneous swelling on the medial aspect of upper limb. Cytology smears revealed sheathed microfilaria without any nucleus in the tail end confirming the species as *Wuchereria Bancrofti*. Wet mount preparations also showed microfilaria. The case is highlighted to ascertain the role of fine needle aspiration cytology in diagnosing filariasis as an incidental finding from subcutaneous swelling and for early institution of therapy.

**Key words:** Microfilaria, subcutaneous nodule, cytology, incidental

### INTRODUCTION

Filariasis is a global health problem in the tropical and subtropical regions of Africa, Asia, Western Pacific and parts of America. Out of 1.10 billion people at risk of infection, 120 million people are infected presenting commonly with lymphoedema and scrotal hydrocele. [1] There are eight species of filarial parasite which are transmitted by mosquitoes and flies. Lymphatic filariasis is caused by *Wuchereria Bancrofti*, *Brugia Malayi* and *Brugia Timori*. Lesion of skin and subcutaneous nodules are caused by *Onchocerca volvulus* and *Loa loa*. [2] The commonest causative agent, *Wuchereria Bancrofti* alone accounts for 95% cases. Definitive host is human beings and the intermediate host is mosquitoes. [2,3]

Microfilaria is commonly diagnosed by stained or unstained blood smear, circulating filarial antigen detection methods and histopathological sections. Fine needle aspiration cytology (FNAC) is not used commonly for diagnosis. However, detection of microfilaria has been reported on cytology smears. [4] The aspiration cytology from different sites like breast, thyroid, liver, lungs and lymph nodes has detected microfilaria *W. bancrofti*. Subcutaneous nodule is an extremely rare presentation. [5,6] Here, we present a case of *Wuchereria Bancrofti* as an incidental finding in a small subcutaneous nodule near medial aspect of left arm detected on FNAC.

## CASE REPORT

A 40 year old male, resident of Faridabad district, Haryana, India, presented in the Surgery Out Patient Department with a small swelling near medial aspect of the left arm since one month. There was history of increase in size of the swelling without pain, trauma or discharge. On local examination, a slightly elongated, soft, non-tender and mobile subcutaneous swelling of size 1 x 1 cm was found. The patient was referred to Pathology Department for FNAC with a clinical diagnosis of lipoma. Two milliliter of blood mixed fluid was aspirated.



Figure 1: Photomicrograph of a sheathed microfilaria of *W. bancrofti*. without any nuclei at the tail. (May Grunwald Giemsa, x400).

Cytology smears revealed many microfilariae, identified as *Wuchereria Bancrofti* because of the presence of hyaline sheath and ratio of cephalic space length and breadth was almost 1 : 1; nuclei were almost spherical, regularly placed, appeared in regular row, well separated without any overlapping and were absent at the tip tail on hemorrhagic background (figure 1). Following this, wet mount preparation done and motile microfilariae were seen (figure 2). However, patient's biochemical investigations and hematological indices including eosinophils (2%) were in normal range. Three consecutive night blood examination didn't show any microfilariae.



Figure 2: Photomicrograph of wet mount preparation of the fluid shows of *W. bancrofti*. (magnification, x200)

## DISCUSSION

*Wuchereria Bancrofti* presenting as subcutaneous nodule is a very rare presentation. The subcutaneous filariasis is mainly caused by *Loa loa*, *Onchocerca volvular* and *Mansonella streptococca* of which *Loa loa* is found both in peripheral blood and subcutaneous nodule and the other two found only in the skin. [7] *Dirofilaria* spp. (*D. immitis* and *D. repens*) causes infection in wild and domestic animals, humans are the accidentally infected. Unusual human ocular dirofilariasis has been reported. [8] Symptomatic cases of filarial infection with typical clinical presentation are often easily diagnosed but definitive diagnosis can be

made by demonstration of circulating microfilariae in blood. [9] However the present case was unusual, being asymptomatic and also there was absence of microfilaria in peripheral blood with normal hematological indices.

Filariasis have high incidence in endemic regions but microfilarias can be absent in blood. However, these cases can be detected on cytology smears incidentally. Hence, cytology plays an important role in diagnosis of asymptomatic cases. In natural habitat, adult worms live in regional lymphatics and microfilariae circulate in the blood. Filarial organism appears in tissue fluids as a result of lymphovascular

obstruction which leads to extravasation of blood or fluid along with microfilariae. [10]

In our case, patient from non-endemic zone came without any clinical symptoms except a small swelling over his left arm. Pandey P et al reported a case of *W. bancrofti* in subcutaneous swelling in cubital fossa. Similar to our case, they also found microfilaria on cytology smear in an asymptomatic patient with normal biochemical and hematological investigation without eosinophilia and microfilaremia. [11] FNAC is not commonly used for diagnosis of filariasis even in endemic zone. Apart from its common site, microfilariae may present at unusual sites like in our case in the medial aspect of arm. Hence, careful screening of cytological smear plays an important role for diagnosis of filarial infection.

## CONCLUSION

Although FNAC is not a diagnostic test of choice but it plays very important role in diagnosing filarial infection as an incidental finding at an unusual sites where there is no clinical suspicion. Finding microfilariae in subcutaneous swelling is rare but we should always consider filariasis as a differential diagnosis at these sites. This would help in early detection and institution of specific treatment can prevent severe manifestations of filariasis in asymptomatic patients.

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