ABSTRACT: BACKGROUND: 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. Microfilariae and adult filarial worm have been incidentally detected in fine needle aspirates of various lesions. We here report a unusual case of Bancroftian microfilariasis in 13 yr old asymptomatic male coming from endemic area with preauricular swelling in subcutaneous tissue. Our aim is to highlight the chances of finding microfilaria in cytology of an unsuspected case at an unusual site.

KEYWORDS: microfilaria, fine needle aspiration cytology, preauricular subcutaneous nodule.

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[1]. Filariasis is caused by slender thread like nematodes belonging to super family Filarioidea.

Filariasis is endemic in India and South East Asia. Present estimate suggest that over 120 million people in 80 countries are affected by filariasis and more than 1.1 billion people live in areas where there is risk of infection.[2,3] Despite the large number of people at risk and wide variety of tissues affected, it is unusual to find microfilariae in fine needle aspiration cytology(FNAC) smears.[2]

Individuals having circulating microfilariae are outwardly healthy but have the ability to transmit the infection to others through mosquito bites. Those with chronic filarial infection suffer severely from the disease but no longer transmit the infection. Diagnosis of filarial infection is frequently made on clinical grounds in endemic areas, but demonstration of microfilariae in circulating blood is the only means by which one can make definitive diagnosis. [2,4]

We hereby report a case of preauricular subcutaneous nodule with microfilaria – an incidental finding on cytology.

CASE REPORT: A 13 yrs old asymptomatic male presented with preauricular swelling of 2x1 cm ,since 1month without any history of pain or fever associated with the swelling.
Peripheral smear did not reveal any significant finding. USG of the swelling was reported as preauricular abscess. X-ray finding and other investigations were normal and patient was nonreactive for HIV infection.

FNAC of the swelling was advised.

Patient did not have any signs and symptoms of filarial infection, and the disease was not clinically suspected.

FNAC of the preauricular swelling was done in aseptic conditions, by 23 gauge needle attached to 10ml disposable syringe. Slides were air dried, fixed, with ether alcohol and stained by hematoxylin and eosin.

**CYTOLOGICAL FINDING**: Fine needle aspiration cytology (FNAC) of the swelling revealed hemorrhagic aspirate with few scattered microfilariae in background of few lymphocytes, neutrophils and eosinophils. Morphologically the microfilaria showed presence of hyaline sheath(Figure 1), cephalic space length: breadth ratio of 1:1. Nuclei were spherical, regularly placed, appeared in row, well separated without any overlapping (Figure 3) and absent at cephalic end and tail tip(Figure 2 & 4).

On FNAC, diagnosis of microfilaria of Wuchereria bancrofti in subcutaneous nodule was given.

**DISCUSSION**: Filariasis is a major public problem in tropical countries, especially India, China, Indonesia and parts of Africa. Current estimates indicate that there are at least 6 million attacks of acute filariasis per year and more than 20 million people have one or more chronic filarial lesion.\(^2\) The international task force for disease eradication has identified lymphatic filariasis as one of the six diseases considered eradicable or potentially eradicable.\(^5\)

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 malayi are the 2 most common species in latter.\(^6\) In the present case microfilaria of Wuchereria bancrofti was seen in subcutaneous nodule.

The life cycle of Wuchereria bancrofti is found in two hosts. Man is definitive host and mosquito is an intermediate host.\(^7\) Adult worm resides in lymph node where the gravid female release a large numbers of microfilariae. These larvae pass through the thoracic duct and pulmonary capillaries to the peripheral circulation.\(^8\)

The microfilariae of 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; but subcutaneous nodule is a very rare presentation.\(^7,9,10,11\) and the appearance of microfilara in preauricular nodule can be considered as an rare site and to best of our knowledge no case has been reported at this site.

In our case subcutaneous nodule aspirates showed sheathed microfilaria, W. Bancrofti was confirmed by absence of nuclei in cephalic and tail end and was thus differentiated from W. Loa Loa.

Subsequent examination of night blood smear from patient failed to demonstrate microfilariae which is in accordance with the reports by other authors\(^2,12\) thus suggesting that filaria can exist without microfilaremia. Blood eosinophil
counts were within normal range in our case, as also reported by Varghese et al.[12] Majority of cases in endemic regions neither show microfilariae in blood, nor any symptom. [2,3]

Patient was referred to clinician and he responded to Diethylcarbamazine (6mg/kg) for 21 days.

**CONCLUSION:** The main purpose of this case report is to raise the awareness that in tropical countries like India where filariasis is endemic, it should always be considered as a differential diagnosis of swelling at any site. Our presentation revealed that microfilaria may even be present at rare site like preauricular subcutaneous nodule. Careful examination of cytological smears is very important in prompt recognition of the disease and institution of specific treatment especially in unsuspected and asymptomatic cases.

![Figure 1: Microfilaria of Wuchereria bancrofti. The microfilaria is sheathed, with eosinophil in left corner. (H&E, 40x)](image1)

![Figure 2: Microfilaria of Wuchereria bancrofti with few inflammatory cells in background. Note the cephalic and tail tip free from nuclei. (H&E, 100x)](image2)
Figure 3: Microfilaria of Wuchereria bancrofti with spherical nuclei which are regularly placed without overlapping (H&E,100x)

Figure 4: Microfilaria of Wuchereria bancrofti. The microfilaria is sheathed, its body is gently curved, and the tail is tapered to a point and nuclei do not extend to the tip of the tail (H&E,100x)
REFERENCES: