

## Case Series

# Unusual site of presentation of *W. Bancrofti* with various forms of filaria seen on cytology smears - Report of 2 cases

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	International Archives of Integrated Medicine, Vol. 5, Issue 1, January, 2018. Copy right © 2018, IAIM, All Rights Reserved. Available online at <a href="http://iaimjournal.com/">http://iaimjournal.com/</a>	
	ISSN: 2394-0026 (P)	ISSN: 2394-0034 (O)
	Received on: 06-12-2017	Accepted on: 13-12-2017
	Source of support: Nil	Conflict of interest: None declared.
<b>How to cite this article:</b> Shweta P. Bijwe, Arunkumar D. Chopwad. Unusual site of presentation of <i>W. Bancrofti</i> with various forms of filaria seen on cytology smears - Report of 2 cases. IAIM, 2018; 5(1): 145-148.		

## Abstract

Filariasis is a major public health problem in tropical countries like India, China, Indonesia, Africa and the Far East. Aspiration cytology often helps in demonstration of microfilaria and its various forms, from uncommon diverse areas and in unusual clinical presentations like subcutaneous swelling caused by *W. bancrofti* in our cases. In our cases various forms of *W. bancrofti* were seen on cytology. Microfilaria being most common form seen on cytology, adult worm, coiled forms (embryos) and ova seen less often. FNAC can be helpful in diagnosis of symptomatic as well as asymptomatic cases of lymphatic filariasis. During cytological evaluation of tissue fluids and aspirate from lesions of any part of the body, possibility of filariasis must be kept in mind as a possible differential diagnosis, particularly in endemic areas. This will help to give appropriate therapy to asymptomatic patients.

## Key words

Subcutaneous presentation of *W. bancrofti*, Microfilaria, Adult worm, Coiled form, Ova.

## Introduction

Filariasis is a major public health problem in tropical countries like India, China, Indonesia, Africa and the Far East. In India *W. bancrofti* is responsible for 98% diagnosed cases of lymphatic filariasis [1]. Skin and subcutaneous

tissue involvement is commonly due to *Loa Loa* and *Onchocerca volvolus* whereas lymphatic involvement is caused by *W. bancrofti* and *Brugia malayi*. Aspiration cytology often helps in demonstration of microfilaria and adult worms from uncommon diverse areas like breast,

effusion fluid, thyroid, soft tissue swellings, etc. [2]. We are describing two cases of bancroftian filariasis presenting as an unusual presentation of subcutaneous swelling.

## Case series

### Case report 1

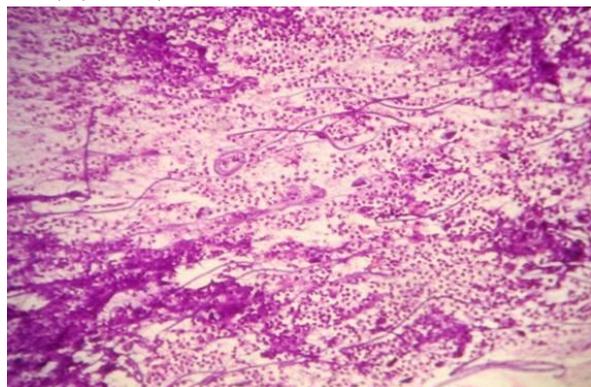
#### Clinical findings

11 year old girl presented with 2×2 cm, firm, mobile, non-tender, gradually increasing subcutaneous nodule on ventral aspect of left forearm. There were no other associated complaints like fever, pain or lymphadenopathy. Clinical diagnosis of benign soft tissue tumour was kept for the lesion. FNAC from nodule yielded necrotic material.

#### Cytological findings

Cytological examination revealed necrotic and inflammatory background with acute and chronic inflammatory cells, many eosinophils, epitheloid cells and giant cells. Many microfilaria larvae, coiled forms and ova *W.bancrofti* of were seen (Figure – 1, 2).

**Figure - 1:** Microphotograph showing microfilaria of *W. Bancrofti*, coiled form and ova on necrotic inflammatory background (H & E, 10X) (case 1).



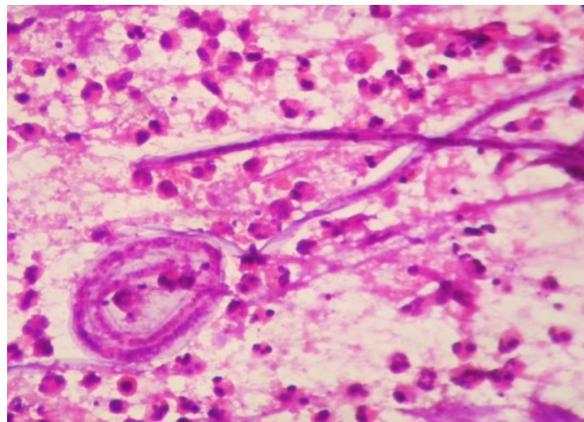
### Case report 2

#### Clinical findings

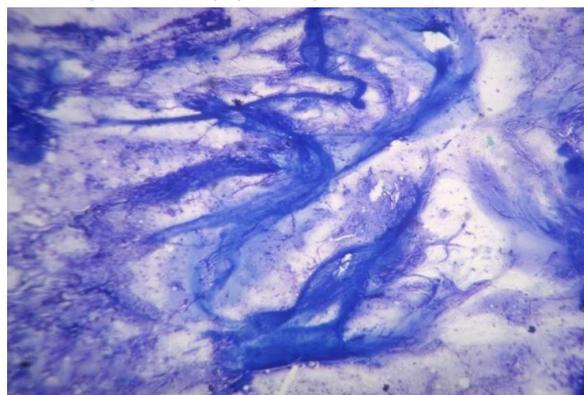
60 year old female presented with cord like swelling of size 4×1 cm in lower outer quadrant of right breast since 4 days. It was firm, fixed to overlying skin & tender. On ultrasonography,

swelling was found to be in subcutaneous plane. FNAC from swelling yielded necrotic aspirate.

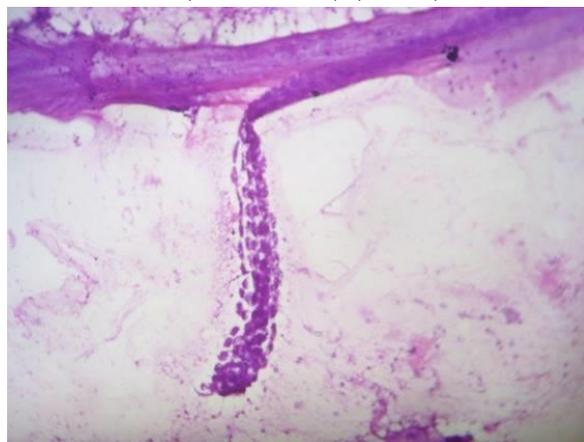
**Figure - 2:** Microphotograph showing coiled form and microfilaria of *W.bancrofti* (H & E, 40X) (case 1).



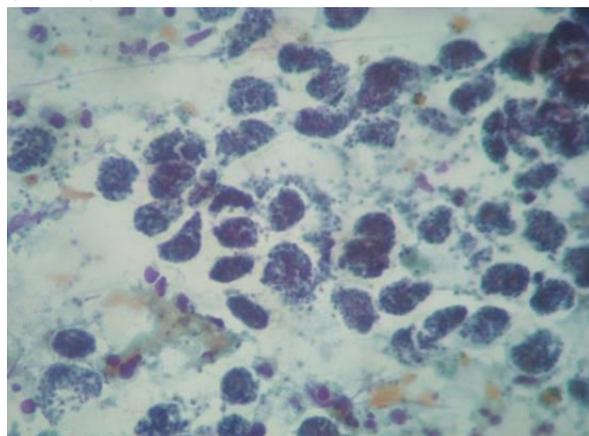
**Figure - 3:** Microphotograph showing numerous *W.bancrofti* microfilaria and fragments of adult worm (MGG, 4X) (case 2).



**Figure - 4:** Microphotograph showing fragments of adult filarial worm of *W.bancrofti* containing numerous ova (H & E, 10X) (case 2).



**Figure - 5:** Microphotograph showing sheets of ova of *W.bancrofti* filarial organism (PAP, 40X) (case 2).



### **Cytological findings**

Cytological examination revealed many microfilariae of *W.bancrofti*, fragments of adult worm and eggs (ova) of microfilariae on necrotic background along with acute inflammatory cells, epithelioid cells and giant cells (**Figure - 3, 4, 5**).

### **PS findings**

Nocturnal sample of both patient failed to reveal any microfilaria. Eosinophil count was normal in both patients (5% and 4% respectively).

### **Discussion**

Filariasis is endemic in tropical countries such as India, China, Indonesia, parts of Asia and Africa [3]. The adult gravid female worms residing in lymphatic system releases larger number of microfilaria which then pass through thoracic duct & pulmonary capillaries enter the blood stream.

Diagnosis of lymphatic filariasis in symptomatic cases with typical clinical presentation is often easy and straight forward. However, a majority of the affected in endemic area remain asymptomatic with continued disease transmission. In endemic areas, microfilaremia is often absent or transient, which further leads to difficulty in diagnosis. But microfilaria, even in asymptomatic cases can reach tissue spaces due to vascular or lymphatic obstruction, leading to extravasations of larva. Cytology can

demonstrate this extravasated larva in tissue spaces or fluids [4].

### **Deceptive clinical presentation-**

Our first case presented as a subcutaneous nodule which is an uncommon site for clinical presentation and was clinically suspected as benign soft tissue neoplasm like fibroma, neurofibroma, lipoma or dermal adnexal tumour.

Our second case presented as a breast mass and was diagnosed as fibroadenoma. Filarial nodule in breast is virtually never diagnosed clinically as such & is always a diagnosis on cytology.

In our cases, the patient came from an endemic area which explains lack of clinical symptoms of filariasis and amicrofilaremic state. FNAC is proved to be an effective measure in diagnosis where clinical diagnosis is not related to filaria.

### **Cytological findings**

In our cases cytological examination showed various forms of *W.bancrofti*.

Microfilaria is the most common form of filarial organism detected on cytological smears. It is seen as larva surrounded by thin hyaline sheath, which is considered as remnant of eggshell [5]. Size ranges from approximately 245 to 300  $\mu$ m.

Case 1 showed many eggs which contained tightly coiled but well developed microfilaria within, referred as embryos. This finding supports the fact that *W.bancrofti* are ovoviviparous; that is they lay eggs with well-developed embryos within, as reported by some [5].

Ova of the *W.bancrofti* and fragments of adult worms seen in our cases can also be detected rarely [6]. Presence of adult worms and ova from aspirates of many sites like lymph node, breast, body fluids, soft tissue swellings etc.is reported [3, 7-10].

### **Conclusion**

FNAC can be helpful in diagnosis of symptomatic as well as asymptomatic cases of lymphatic filariasis. During cytological evaluation of tissue fluids and aspirate from lesions of any part of the body, possibility of filariasis must be kept in mind as a possible differential diagnosis; particularly in endemic areas. This will help to give appropriate therapy to asymptomatic patients.

### **Acknowledgement**

We would like to thank Department of Microbiology, IGGMC, Nagpur, for their support.

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