

Short Communication**Cyodiagnosis of filariasis from a swelling on upper arm – a rare presentation**Dr Karumbaiah KP^{1*}, Dr Arshiya Anjum², Prof. Subbannaiah³, Prof. Kariappa TM⁴¹MD (Pathology), Associate Prof. of Pathology, K.V.G Medical College, Sullia, D.K, Karnataka, India²PG in Pathology, K.V.G. Medical College, Sullia, D.K, Karnataka, India³Dept. of Microbiology, K.V.G. Medical College, Sullia, D. K, Karnataka, India⁴MD (Pathology), Prof. and Head, Dept. of Pathology, K.V.G Medical College, Sullia, D.K, Karnataka, India**Corresponding author**

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Abstract: India is endemic for filariasis with large number of cases being reported every year. In endemic areas filariasis may be entirely asymptomatic with high microfilaraemia. We report an unusual case of filariasis in a 39 year old man, who presented with a swelling of one month duration in the medial aspect of the left upper arm, clinically suspected to be a benign soft tissue neoplasm. Aspiration yielded gelatinous material. Cytological examination revealed numerous microfilaria of *Wuchereria Bancrofti*.

Keywords: Cytology, Filariasis, *W. Bancrofti*.

INTRODUCTION

Filariasis is a disabling parasitic disease prevalent worldwide caused by various species of filarial organism. It is a major public health problem in many tropical and sub tropical countries and is seen in India in about 243 districts. The brunt of the disease is borne in coastal areas and banks of major rivers [1]. Filariasis, caused by slender thread-like nematodes of Filarioidea superfamily, can predominantly involve skin and subcutaneous tissue (onchocerca volvulus and Loa loa) or the lymphatic system (*Wuchereria bancrofti* and *Brugia malayi*) [2]. *Wuchereria bancrofti* is the most common cause of filariasis in India and is transmitted by Culicine mosquitoes. Filariasis may produce acute as well as chronic clinical manifestations or a person may remain asymptomatic in endemic areas. Usually the disease follows a chronic course with predominant involvement of the lymphatic system of lower limbs, retroperitoneal tissue, spermatic cord and epididymis [3]. Filariasis presenting as subcutaneous swelling involving upper extremities is rare. Aspiration cytology smears often aid in detection of filarial organisms from various sites of the body in clinically unsuspected cases [4].

CASE REPORT

A 39 year old male, resident of Dakshina Kannada district of interior coastal Karnataka, India, presented with a history of painless swelling on the medial aspect of left upper arm since one month. No history of any other swelling, fever or any other clinical symptoms.

Examination

A small subcutaneous irregular, swelling measuring 2.5x1.5 cm was noted. The swelling was firm, non tender, and movable. A clinical diagnosis of benign soft

tissue tumor was proposed and the case was sent for fine needle aspiration cytology (FNAC) study.

Cytology

Fine needle aspiration was performed from the swelling which yielded 0.1ml of thick gelatinous material.

Microscopy of Haematoxylin & Eosin (H&E) and May Grunwald Giemsa (MGG) stained smears showed numerous ensheathed parasites having blunt head with curved and pointed tails free of somatic nuclei at the tip and was identified as microfilaria of *W.Bancrofti*. Background showed scattered mixed inflammatory cells with debris (Figure 1 & 2).

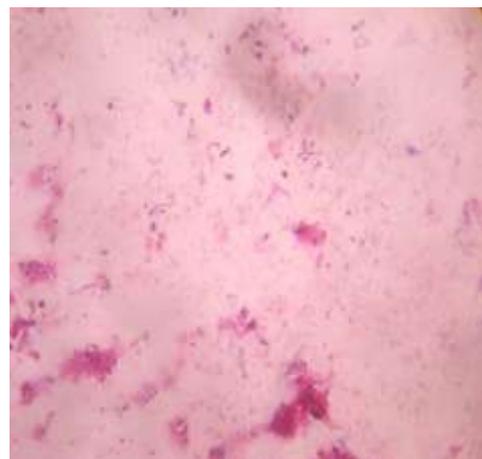


Fig. 1: Photomicrograph of the microfilaria of *Wuchereria bancrofti* in a background of scattered inflammatory cells and debris (H&E, x4)



Fig. 2: Photomicrograph of the microfilaria of *Wuchereria bancrofti* with blunt head and a pointed tail free of nuclei (MGG, x40)

Routine blood examination revealed normal eosinophil count. Blood examination drawn after one hour of oral dose (2mg/kg body weight) of diethyl carbamazine (DEC Provocation test) did not reveal microfilaremia.

DISCUSSION

Filariasis is a major public health problem in the tropical countries. Unfortunately majority of infected individuals in filarial endemic communities are asymptomatic with continued transmission and microfilaremia is often absent or transient which further complicates disease detection [1].

Microfilarial larvae in asymptomatic patients can reach tissue spaces due to vascular or lymphatic obstruction, leading to extravasations of larva. Cytology can demonstrate these extravasated larvae in tissue spaces or fluids [5]. Thus demonstration and identification of the parasite in cytologic smears played a significant role in the prompt recognition of the disease and institution of specific treatment, obviating the more severe manifestations of lymphatic filariasis [6]. In our case, the patient was a native of an endemic area without any specific signs and symptoms. FNAC proves to be a simple and effective method used in the diagnosis of such cases.

Microfilaria of *W. Bancrofti* are identified on cytological smears as long, thin, colorless transparent sheathed thread like structures (280-300 x 67 μ) with blunt head, pointed tail and absence of somatic nuclei in the tail tip. *Brugia malayi* larva in comparison is smaller with kinks instead of a smooth curve and presence of nuclei in tip. Adult worms of both species appear as white thin thread like structures with tapering ends and distinction is often impossible [6].

CONCLUSION

Despite high incidence, it is infrequent to find microfilariae in fine needle aspiration cytology smears and body fluids. A differential diagnosis of filariasis should be considered in patients presenting with swellings in any part of the body with or without other symptoms, particularly in endemic areas. Careful screening of such swellings with FNAC study is helpful to detect microfilaria even in asymptomatic patients without eosinophilia.

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