

Case Report

Incidental Detection of Microfilaria in Cytology: Report of Three Cases

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Abstract

Filariasis is one of the common endemic diseases in India. Detection of microfilaria in cytological samples is unusual. Microfilaria associated with visceral malignancy is more uncommon. We present three cases where microfilariae were detected incidentally during examination of cytological samples. Two of them are benign disease entities while third one is malignant in nature. In one case we have found presence of microfilaria in salivary gland which is very rare according to the literature.

INTRODUCTION

Filariasis is one of the common parasitic diseases seen in India showing acute, chronic or asymptomatic presentations¹. *Wuchereria bancrofti* is found in most of the cases². Due to nocturnal periodicity it is very hard to detect microfilariae in routine peripheral blood smears, fine needle aspiration smears and body fluids³. Microfilariae with malignant lesion is far more rare in cytological literature⁴. Here we report three cases where microfilariae were detected in routine cytology without clinical suspicion of filariasis. One of them is associated with malignancy.

CASE REPORTS

Case 1

A 33 year old male presented with non resolving painless enlargement of left sided cervical lymph node measuring 3 cm X 2 cm for 6 months. Previous aspirations showed cytological features of reactive hyperplasia of lymph node after repeated courses of antibiotics. There was history of low grade fever. This time the aspirate showed presence of microfilariae of *W. bancrofti* along with few lymphoid cells against a blood mixed background (Figure 1). Eosinophilia was detected in peripheral blood smear. A diagnosis of microfilarial lymphadenitis was made.³

Case 2

A 40 year old lady presented with enlargement of left sided parotid gland for last 8 months without other significant complaints. There was no history of trauma to the local site, fever or lymphadenitis. Ultrasonogram of parotid was essentially within normal range. Fine needle aspirate showed presence of microfilaria of *W. bancrofti* with mesenchymal elements and few chronic inflammatory infiltrates (Figure 2 and 3). Here

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also eosinophilia was present in peripheral blood smear. A diagnosis of chronic nonspecific sialadenitis with microfilaria of *W. bancrofti* was given. Case number - 3: A 55 year old male presented with breathlessness, dry cough and gradual weight loss for last 3 months. Mantoux test was negative. His X ray chest (PA view) showed massive right sided pleural effusion^[1]. Aspirated pleural fluid was hemorrhagic. Cell count was 550/cu mm. Smear from centrifused deposits of the fluid revealed three dimensional clusters of malignant epithelial cells along with microfilariae of *W. bancrofti* and few reactive mesothelial cells (Figure 4 and 5). The patient was diagnosed as adenocarcinoma of lung with coexistent filariasis. Eosinophilia was absent in peripheral blood. In all three cases the microfilariae were large, had an outer hyaline sheath with no secondary kink, distinct somatic nuclei in the body with absence of nuclei at tail end, resembling microfilariae of *W. bancrofti* on the morphological ground. All three patients had elevated IgG antifilarial antibody in their serum detected by



Figure 1 Microfilaria of *W. bancrofti* along with few lymphoid cells against a blood mixed background in fine needle aspirate of lymph node (Hematoxylin-Eosin stain, X100).

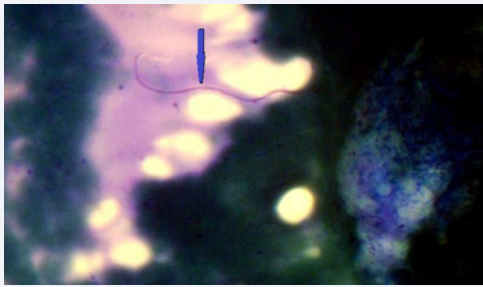


Figure 2 Microfilaria of *W. bancrofti* with mesenchymal element and few chronic inflammatory cells in fine needle aspirate of parotid gland (Leishman Stain, X100) 7.

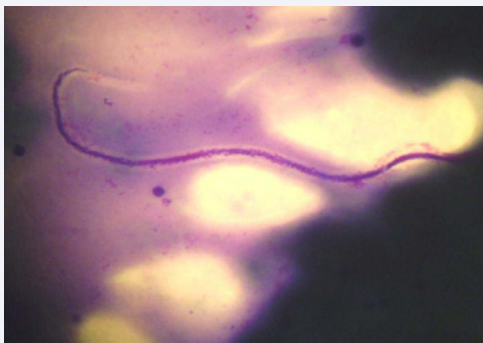


Figure 3 Microfilaria of *W. bancrofti* few chronic inflammatory cells in fine needle aspirate of parotid gland (Leishman Stain, X400).

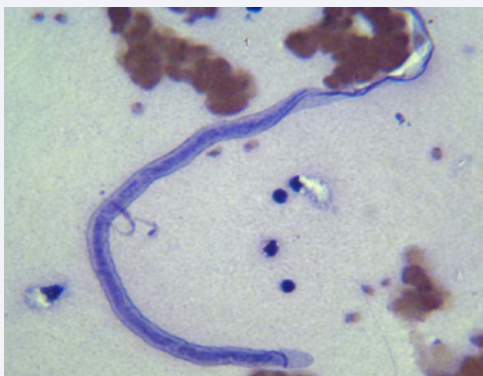


Figure 4 Microfilaria of *W. bancrofti* along with reactive mesothelial cells in pleural fluid (Hematoxylin-Eosin stain, X400). 8.

enzyme-linked immunosorbent assay (ELISA). The first and the second cases underwent diethylcarbamazine therapy and both of them responded well as evident by normal eosinophil count and absence of microfilariae in repeated fine needle aspirate on follow up. The third patient was lost on follow up. **5. Discussion:**

Filariasis is a major health problem in India. It is caused by *Wuchereria bancrofti*, *Brugia malayi*, *Brugia timori*. The first two are common in India [2]. The sheathed microfilaria of *W. bancrofti* is differentiated from the sheathed microfilariae of *B. malayi* by its larger size, relatively straightened outline without secondary kinks, prominent somatic nuclei in body and nuclei

free tail tip on morphological basis [3]. Adult filariae live in lymph vessels and many times cause inflammation and obstruction leading to lymphoedema, lymphangiomas and [4] fibrosis. Some infected individuals remain asymptomatic throughout their life in endemic zones. They are traditionally called as “endemic normals” [5]. Although microfilaria in fine needle cytology is not a common finding, it was observed in various cytological materials i.e. aspirated materials from lymph node, breast lump, cutaneous swelling, bone marrow, bronchial aspirate, nipple discharge, ascitic fluid, pleural fluid, pericardial fluid, ovarian cyst fluid and cervicovaginal smears in few occasions [4]. In these situations the diagnoses remain merely incidental as in case no -1 where the patient was clinically suspected as a case of tuberculosis due to its chronic presentation and failure to resolve instead of antibiotic therapy. The detection of microfilaria in salivary gland is a very rare finding. The literature shows only one reported case of microfilarial infestation in submandibular gland [6]. Association of bancroftian microfilaria in chronic sialadenitis of parotid gland in case no - 2 is probably the first reported case. This association is presumed to be purely incidental. Microfilaria rarely causes pleural effusion [7]. If there is effusion it is usually chylous in type due to secretion of chyle from the occluded thoracic duct. Exudative or hemorrhagic effusions are very rare. Although microfilaria in unusual sites are considered incidental findings, the association of microfilaria with debilitating conditions suggest that it may be an opportunistic infection or it may be coincidental with various neoplasms (chance association) [8]. The portal of entry of microfilaria in pleural space is still a speculation. Most of the authors have explained that as microfilaria circulate in vasculature & lymphatic system and whenever the neoplastic lesion causes vascular or lymphatic obstruction they appear in tissue fluid or shed off in surface material. In malignancy increased vasculature also causes increased deposit of microfilaria to these sites [9]. This explains the association of microfilaria in malignant pleural effusion in case no - 3 although the presence of microfilaria makes no change of clinical presentation of the neoplastic process.

CONCLUSION

The association of microfilariasis should be kept in mind in endemic areas such in India. Fine needle aspiration cytology can

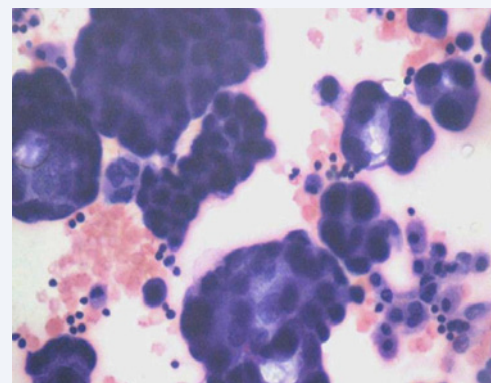


Figure 5 Three dimensional clusters of malignant cells in pleural fluid (Hematoxylin-Eosin stain, X400).

be a very sensitive and cost effective tool for the detection of helminthic etiology in unexplained lymphadenopathy or parotitis after exclusion of tuberculous cause. Careful screening of cytologic smears should be done for detection of coexistent microfilarial infestation with other benign or malignant pathology to detect the hidden burden of microfilarial diseases in tropical country like India and to provide accurate treatment.

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