



Microfilaria in Pleural Effusion - An Atypical Presentation

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ABSTRACT

Filariasis is a major public health problem in many areas of tropics and subtropics of Africa Western Pacific, and parts of America affecting over 83 countries. It is a public health problem in India. The majority of cases found in India are attributed to infection by *Wuchereria bancrofti*, that mainly affects lymph nodes and lymphatic channels. Presence of filariasis in pleural fluid is an unusual finding. In the present case report a female patient presented with sign and symptoms of haemorrhagic pleural effusion.

Keywords: India, Pleural effusion, Filariasis, *W. bancrofti*

INTRODUCTION

Tropical diseases are always endemic in the region of Asian and African countries. Filariasis involves lymphatic system with a predilection for lower limbs, retroperitoneal tissue, spermatic cord, and epididymis [1]. The filariases result from infection with vector borne, tissue dwelling nematodes, called filariae [2]. *Wuchereria bancrofti* is the commonest of filarial organism infecting humans [3].

Microfilaria can affect other sites like thyroid, bone marrow, bronchial aspirate, nipple secretion, ovarian cyst fluid, cervico-vaginal smear, breast, pericardial and pleural fluid rarely [4].

Lymphatic filariasis is an important public health problem in India. An estimated 374 million population live in endemic areas and forty-five million are infected [5]. There are only 13 such reported cases in English language scientific literature with extensive search [6].

CASE REPORT

A forty-five years female patient was admitted in chest department with dry cough, shortness of breath for two weeks. Clinical examination revealed left sided stony dullness and absence of breath sounds. There was no history of fever and known exposure to tuberculosis. Peripheral blood examination showed anaemia (haemoglobin - 14.7 g/dl), erythrocyte sedimentation rate - 52 mm/h and total leukocyte count- 11,500/mm³. Peripheral Blood Smears did not show any parasite or eosinophilia. IgE (79.0 IU/ml) and adenosine deaminase levels (6.1 IU/ml) were in normal range. Test for HIV appeared to be negative. Pleural fluid showed protein- 2.7 g/dl, ADA- 5.7 IU/ml, total cell count - 300/mm³, and no malignant cells were found. Normal cholesterol (47 mg/dl) and triglyceride (32 mg/dl) were estimated.



Figure 1 Chest X-Ray Posterior Anterior view showing massive left sided pleural effusion

Chest X-ray showed massive left sided pleural effusion (Figure 1). Sputum for AFB was negative. The centrifuge deposit from pleural fluid aspirate stained with Leishman Stain showed presence of several microfilariae that were rounded anteriorly and tapering posteriorly with a clear space free of nuclei at the caudal end (Figure 2).

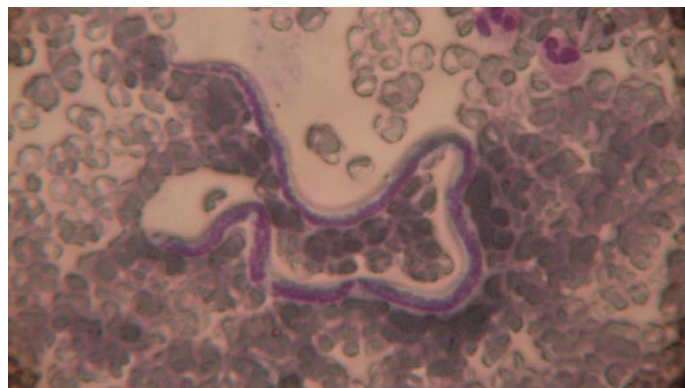


Figure 2 Centrifuged deposit of pleural fluid aspirate stained with Leishman stain showed presence of several microfilariae of *W. bancrofti*

CT scan thorax showed massive left sided pleural effusion with compression collapse left lung (Figure 3).

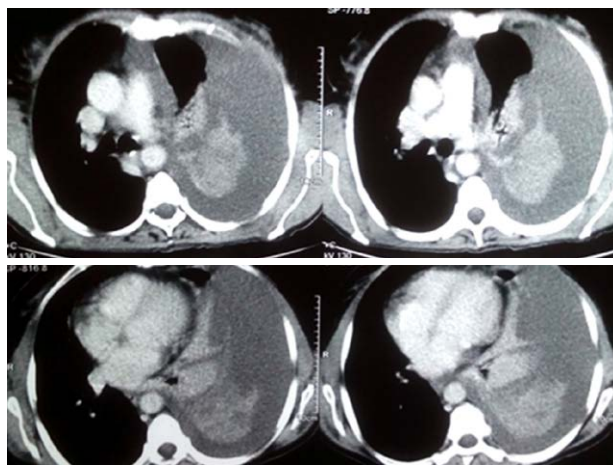


Figure 3 CT scan thorax- massive left sided pleural effusion with compression collapse left lung

DISCUSSION

Filariasis is a global problem [7]. In India microfilariae of *Wuchereria bancrofti* and *Brugia malayi* are commonly prevalent one. The major clinical presentation of lymphatic filariasis include asymptomatic microfilariaemia, acute and chronic manifestation and occult filariasis [8]. The diagnosis is made on the basis of morphology of microfilaria. Microfilaria of *B. malayi* are smaller than those of *Wuchereria bancrofti* poses secondary kinks instead of a smooth curve and unlike *Wuchereria bancrofti* the tip is not free of nuclei [9]. In this case the nematodes were identified on the basis of their morphology.

The clinical manifestation of lymphatic filariasis may range from asymptomatic microfilariasis to hydrocele, lymphangitis, lymphadenitis, with high grade fever (Filarial fever) and lymphatic obstruction [10].

In this case the patient did not come with usual features of filariasis. Rather the patient presented with massive haemorrhagic non-chylous pleural effusion primarily suggesting tuberculosis, as this the most common cause of pleural effusion in India [11,12]. There was no co existing malignancy, which is the most common cause of haemorrhagic pleural effusion [11,12]. The subsequent extensive search for microfilaria in blood did not yield any result. Similar finding was also observed by Sivakumar, et al. [13]. Microfilaria probably appear in tissue fluids and exfoliated surface material due to lymphatic obstruction [6]. The host immune response directed against the parasite lying in different lymphatic vessels appears to be the major factor in determining the clinical presentation. The immune response is due to embryos, adult worm and larval antigen is not known. Exudative effusion in these cases may be due to lymphangitis and incomplete obstruction of lymphatics or atypical hypersensitivity reaction [14].

Filariasis can be cured by Diethylcarbamazine (DEC) [15] and in this case, the pleural effusion of the patient improved dramatically on administration of DEC and the patient was cured.

CONCLUSION

Endemic nature of filariases has made it one of the main topics of public health interest. Microfilaria in pleural fluid is one of the uncommon conditions and need a higher index of suspicion and careful screening of aspiration smears, especially in patients with pleural effusion in filarial endemic zones, so as not to miss this incidental finding and delay in treatment. Centrifuge deposit of pleural fluid is must for all cases.

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