A Rare Case Report of Filarial Pleural Effusion

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INTRODUCTION

Filaria is a vector born disease. It is common in tropical countries and is endemic in India with heavily endemic areas being Uttar Pradesh, Bihar, Andhra Pradesh, Orissa, Tamil Nadu, Gujarat and Kerala. It is a major health problem in endemic areas especially along seacoasts. Wucherania bancrofti is the most widespread of filarial organisms infecting humans[1]. However, the finding of microfilaria in the pleural fluid is very rare. It presents as fever, lymphatic obstruction, asymptomatic microfilaremia and tropical pulmonary eosinophilia[6]. To our knowledge there are only few such cases of Filaria associated with pleural effusion, reported in the past, in which microfilaria were demonstrated in the pleural fluid along with peripheral blood smear. Hence it has been reported for its rarity.

CASE REPORT

A 32 year old male patient resident of Adilabad district, Telangana, presented with non productive cough, low grade fever and shortness of breath of grade III, and left sided pleuritic chest pain since one month, no other significant present history. Diagnosed as pancreatitis 2 years ago and on treatment since then. Known alcoholic, stopped 3 years back. No other significant past and family history. Clinical examination revealed a pulse rate of 82/minute; BP 110/80 mm Hg, respiratory rate 22/min, SPO2 93% on room air, no significant findings noted on general examination, respiratory system examination revealed signs of left sided pleural effusion. Examination of other systems was non-contributory.

The routine blood investigations were with in normal limits including Erythrocyte Sedimentation Rate, serum amylase and serum lipase. Chest radiograph PA view revealed homogenous opacity occupying whole left hemithorax i.e massive pleural effusion on the left side with mediastinal shift to the right side(Fig.1). Provisional diagnosis was left sided pleural effusion secondary to

ABSTRACT

Lymphatic filariasis is common in tropical countries and is endemic in India. It has wide spectrum of presentation. Filarial lung involvement is usually in the forms of Tropical Pulmonary Eosinophilia with pulmonary infiltrates and peripheral eosinophilia. Pleural effusion is an uncommon manifestation, and the finding of microfilaria in the pleural fluid is very rare. We report a rare case of pleural effusion which showed microfilaria of wucherania bancrofti cytologically and on nocturnal peripheral blood smear.

Keywords: Microfilaria, pleural effusion, filariasis.
Figure 1: Chest radiograph showing left sided massive pleural effusion with mediastinal shift to right side.

Figure 2: Microfilaria of Wuchereria bancrofti in H&E (Hematoxylin and Eosin) smear of pleural fluid.

Figure 3: Peripheral blood smears of midnight sample showing Microfilaria of Wuchereria bancrofti.

Figure 4: Chest radiograph showing left sided pleural thickening with no recurrence of effusion.
Koch's etiology or pancreatitis was made.

The case was further investigated with diagnostic thoracocentesis which revealed haemorrhagic exudative, pleural fluid, ADA and pleural amylase and lipase are with in normal limits. The smears made from sediments of pleural fluid stained with H&E (Hematoxylin and Eosin) showed larvae of Wucheraria bancrofti on background of chronic inflammatory exudates [Fig. 2]. Nocturnal peripheral blood smear is also positive for Microfilaria larva of Wucheraria bancrofti [Fig. 3]. Patient was treated with tube thoracostomy and Diethyl Carbamazine citrate with oral dose of 6mg/kg body weight in three divided doses after food for 21 days. Intercostal tube was extubated and continued treatment with Diethyl Carbamazine citrate, and on follow up after 3 weeks, the patient improved clinically with chest radiography findings of pleural thickening without evidence of pleural effusion(Fig. 4).

DISCUSSION

Filariasis is a major public health problem in India. Wucheraria bancrofti is the most widespread of the filarial organisms infecting man. The parasite is endemic in both urban & rural areas of India[3]. It has been estimated that 374 million persons are living in endemic areas and 43 million are infected in India[7].

Filarial effusions tend to be chylous in nature due to leakage of chyle from the occluded thoracic duct. Non-chylous effusions caused by microfilariae are rare. Exudative effusion may be due to Lymphangitis resulting from incomplete obstruction of lymphatics[9]. In our case, it manifested as an exudative pleural effusion.

Tropical pulmonary eosinophilia (TPE) is a form of occult Filariasis characterized by pulmonary infiltrates on chest radiograph and peripheral eosinophilia. They present with paroxysmal dry cough, wheezing, dyspnea, anorexia, malaise and weight loss. However, <0.5% of these infections manifest as TPE[10]. TPE results from a hypersensitivity response to the microfilariae of the lymphatic-dwelling parasites, usually related to W. bancrofti or B. malayi infection[10]. In our case, there was no TPE or peripheral eosinophilia on presentation.

The host's immune response directed against the parasite lying in different lymphatic vessels appears to be the major factor in determining the clinical presentation. However, whether the immune response is due to the embryos, adult worm of larval antigens is not known[11]. Exudative effusion observed in our patient appears to be due to lymphangitis[12] and incomplete obstruction of lymphatics. However, the atypical hypersensitivity reaction which is known to occur in patients with lymphatic filariasis cannot be ruled out[13].

The microfilariae in the pleural fluid have been demonstrated only in very few cases so far[1]. Microfilaria of Wucheneria bancrofti in pleural fluid had been presented in endemic as well as non endemic areas [2,3]. Filariasis can present as fever, lymphatic obstruction, asymptomatic microfilaraemia and tropical pulmonary eosinophilia[6], pulmonary eosinophilia[5]. Menon et al[6] diagnosed Wucheraria bancrofti microfilarial pleural effusion in a case of tropical pulmonary eosinophilia, in which peripheral blood was negative for microfilaria on three occasions.

SK Singh et al observed Microfilaria in malignant pleural effusion. A Marathe et al[4] observed microfilaria in pleural fluid smear, but microfilaria were not found in peripheral smears. But, ours is a case of filarial pleural effusion in which microfilaria have been demonstrated both in the pleural fluid and peripheral smear of midnight sample and the patient did not show symptoms of tropical pulmonary eosinophilia or peripheral eosinophilia.

In the present case the patient was not put on anti tubercular treatment since there was no positive finding for the same and the recovery of the patient only with Diethyl Carbamazine stresses the need of high index of suspicion for diagnosis of such infection and the prompt institution of appropriate chemotherapy.

CONCLUSION

In idiopathic pleural effusions, when tuberculosis and malignancies are ruled out, careful search for microfilaria in centrifuged pleural fluid is rewarding especially in endemic countries like India.

CONFLICT OF INTEREST
The authors declared no conflict of interest.

FUNDING: None

REFERENCES


