Malignant Pleural Effusion with Filariasis

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Abstract
The occurrence of microfilaria in pleural fluid is rare. Filarial lung involvement occurs in the form of Tropical Pulmonary Eosinophilia with pulmonary infiltrates and peripheral eosinophilia.

We report a 74-year-old male patient, non smoker who was admitted to our hospital with breathlessness and chest discomfort of two weeks duration. He had, eosinophilia and deranged renal function. X-ray chest revealed massive left sided pleural effusion. Pleural fluid analysis revealed atypical cells and pleural fluid cytology showed microfilaria (Wuchereria bancrofti), which were also found on peripheral smear.

Introduction
Parasites lymphatic filariasis is caused by three main agents i.e. Wuchereria bancrofti, Brugia malayi and Brugia timori. These are called sheathed microfilaria. Filariasis mainly affects people residing in coastal areas but presently cases are being reported from all over the country. Adult worms are found in lymphatics and microfilaria, in peripheral circulation. Microfilaria has also been isolated from various sites in body fluids.¹² Serous cavity filariasis is caused by Mansonella ozzardi and Mansonella perstans. The isolation of filarial worm from pleural fluid has been confirmed from various studies.²³⁻⁴ B. malayi filariasis is an entirely rural disease.

Lymphatic filariasis has been targeted by the World Health Organization for elimination by the year 2020 because recent advances in its diagnosis and chemotherapy have resulted in promising control strategies.⁵

Case Report
A 74 year old patient was admitted to our hospital with a history of breathlessness and chest discomfort since two weeks. There was no history of fever, cough, haemoptysis and weight loss. He was a known case of coronary artery disease with severe LV dysfunction, hypertension, sick sinus syndrome and post pacemaker implant since the last five years. Clinical evaluation revealed pallor, pitting pedal oedema and raised jugular venous pressure. There was absent breath sounds on left of chest. On investigations he had leucopenia with azotemia. TLC was 2000/cmm; eosinophils were 10% (AEC-200). Urea- 98mg/dl, creatinine- 4.8mg/dl. X-ray chest revealed massive left sided pleural effusion (Figure 1). CECT thorax revealed poorly enhancing lobulated lesion in left lower lobe extending up to the hilum, gross pleural effusion with near total collapse – consolidation of left lung and mediastinal lymphadenopathy. There were few sub pleural and parenchymal nodules in right lung, non enhancing hypodense lesion in left adrenal and hepatosplenomegaly with abdominal lymphadenopathy. 2 D-ECHO revealed sclerotic valves, mild MR and TR, dilated in and LVEF 30%. Pleural fluid analysis showed haemorrhagic appearance, glucose- 109 mg/dl, protein- 3.6 g/dl, albumin- 2.5 g/dl, LDH- 1246IU/L and pleural fluid ADA- 22 IU/L. Peripheral blood smear and pleural fluid cytology showed microfilaria (Wuchereria bancrofti). Monteux test was negative. Patient was managed with the primary diagnosis of Septicaemia with Acute Kidney Injury, with ischaemic cardiomyopathy.

The left pleural effusion was drained through pig-tail drain. The patient was treated with albendazole and Di-ethyl Carbamazine (DEC) for three weeks. Four weeks post treatment, repeat pleural fluid cytology and PBS showed persistent microfilaria.

Discussion
Filariasis is diagnosed by clinical features and demonstration of microfilaria in peripheral blood smear and/or in different body fluids. The most commonly affected population is from coastal region. Pleural effusion due to microfilaria is due to thoracic
duct obstruction and it is chylous in nature.

Serous cavity effusions have been reported from infection due to Mansonella perstans. Pleural effusion due to Wuchereria bancrofti is extremely rare. Malignancy is the commonest cause of haemorrhagic pleural effusion seen with carcinoma of lung, breast, and lymphoma or effusion from occult primary.7

Varghese et al8 observed that in three of the six reported cases reported, microfilariae were the cause of symptoms, whereas in the other three cases, microfilaria was associated with other diseases, including malignancy. In our case the pleural effusion was massive, exudative and haemorrhagic in nature which goes in favour of malignancy and finding of microfilaria was an association. Again this may be due to severe LV dysfunction which he had following anterior wall myocardial infarction 10 years back. Patient was also diabetic and on oral antidiabetic drugs. The peripheral blood smear was positive for microfilaria which is a common finding in filarial infections.

There was no clinicoradiological evidence of ‘Tropical Pulmonary Eosinophilia Syndrome’ in this case. With this clinical scenario it is evident that the filarial infection in this case was an opportunistic infection due to Diabetes (immunocompromised state) which has been supported by other studies.8,10 Because of the rarity we reported this case.

Our patient was given Albendazole and DEC for three weeks. After four weeks post treatment repeat PBS (Peripheral Blood Smear) and Giemsa stain of pleural fluid again revealed microfilaria. This raises the possibility of drug resistance or possible gene mutation. Therefore it is a matter of future research for drug resistant Filariasis and also to revise DEC prophylaxis guidelines in our National Filarial Control Programme.

Conclusion

This case highlights the association of immunocompromised status with severe / remittant filarial infection.

References

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