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An Accidental Finding of Microfilaria in Malignant Pleural Effusion

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Abstract: ***We present atypical instance offilaria in pleural fluid cytology in conjunction with lung cancer. In most cases of filariasis, it is associated with peripheral eosinophilia or tropical pulmonary eosinophilia. However in our instance, filaria was identified without any eosinophilia. Microfilaria has been isolated from pleural fluid in very few cases and ours was one such.***

Keywords: Eosinophilia, Pleural effusion, *WucheriaBancrofti*

1. Introduction

Filaria is a vectorborne disease that is a major public health issue in the nations where it is endemic. *Wucheria bancrofti* is responsible for around 95% of the cases. [2]Adult worms can be discovered in lymphatics, while microfilaria can be identified in the bloodstream. [3] *Mansonella ozzardi* and *Mansonella perstans* cause serous cavity filariasis. [4]Filariasis can manifest itself in a variety of ways, including adenolymphangitis, hydrocele, lymphaedema, elephantiasis, fever, funiculitis, or epididymoorchitis. Hydrocele, lymphaedema, elephantiasis, chyluria, and Tropical Pulmonary Eosinophilia{TPE}are all chronic manifestations. [5] There were just 13 of such reported cases in English language scientific literature with extensive search. Hence it is being reported for its rarity. [6]

2. Case Report

A 67 - year old male from Sitapur, Uttar Pradesh was admitted in chest department with history of fever, cough, expectoration, and shortness of breath for the past three months. There was no history related to filariasis, eosinophilia or pulmonary tuberculosis in the patient. Clinical examination of chest revealed stony dullnessas well as diminished breath sounds and chest expansion.

Patient wasmoderately constructed and nourished, according to the examination.

No history of Tuberculosis or hemoptysis in the past. All vitals were within normal limit.

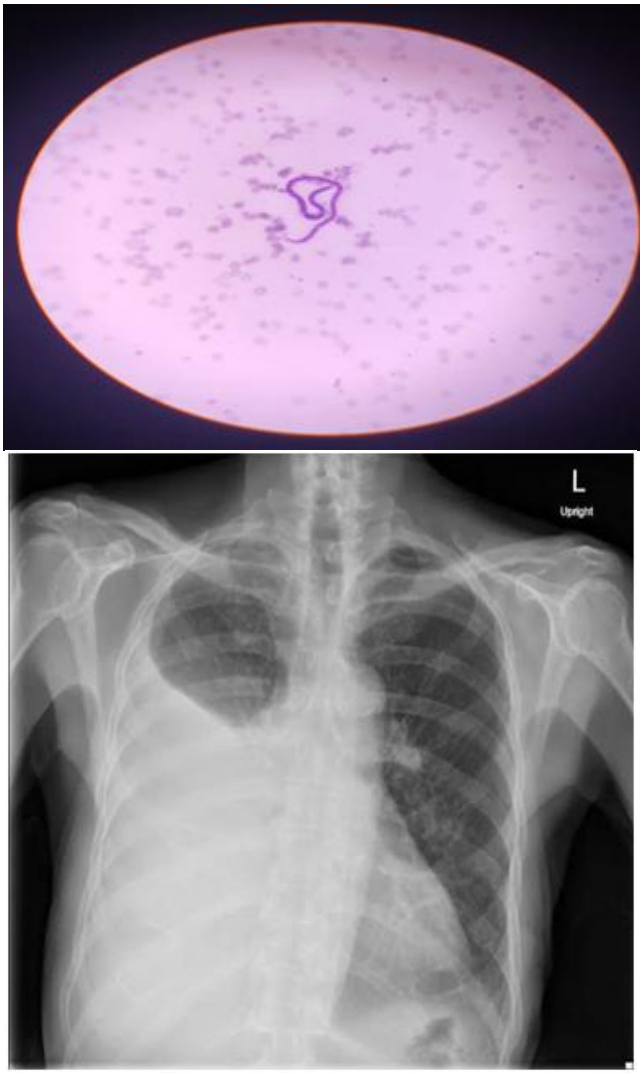

Figure 1: Right Sided pleural effusion

Haemogram -
Haemoglobin 12.7gm/dl, Total leucocyte count14, 100/cmm, Polymorphs94 %, Lymphocytes4 %, Monocyte1 %, Eosinophil1 %, Plateletcount 3.16lac, Packed cell volume39.2%, Mean cell volume92.5fl, Mean cellhaemoglobin30pg, Mean cell haemoglobin concentration32.5g/l.

Biochemistry -
Blood sugar (Fasting) 164 mg/dl, Post Prandial297 mg/dl, BUN 28 mg/dl and creatinine1.2 mg/dl. LFT - Bilirubin (total) 0.40mg/dl, direct bilirubin 0.10mg/dl, all viral markersare non - reactive. ALP 78 microlitre, Urea56mg/dl, SGOT59U/L, SGOT27microlitre. The sputum was AFB negative. PBS showed no microfilaria. Right - sided pleural effusion was discovered on X - ray.

Pleurocentesis was performed for the purpose of diagnosis.

The fluid was crimson in colour and turbid in appearance.

The cell count in the pleural fluid was 380 cells/cmm with 95 % lymphocytes and 5% neutrophils. ADA36.40U/L.

Pleural fluid microscopy - Microfilaria were found in the pleural fluid from centrifuged deposits and an active microfilaria was identified on a wet smear. The tail of microfilaria was found to be nuclei - free, and the length and width of the cephalic space were both equal. These two characteristics contribute to identification of*Wucheria Bancrofti*. On Leishman stain smear shows singly dispersed as well as clusters of large pleomorphic atypical cells showing hyperchromatic enlarged nuclei, increase N: C ratio and prominent nucleoli. Many Microfilaria were seen in the smears. Background shows inflammatory cells comprising of lymphocytes, polymorphs and macrophages.

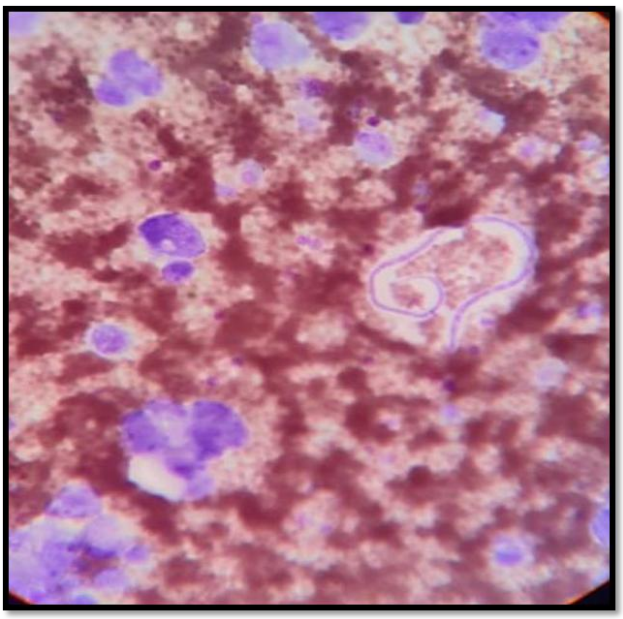

Figure 2: Centrifuged sample showing microfilaria at different magnification

3. Discussion

Filaria is still a major health issue in many endemic areas of Indiaand it is primarily found near the sea shore and along the banks of major rivers. [7] The occurrence of a transudative pleural effusion is quite unusual. [5] Lymphangitis, which occurs when lymphatic pathways are partially blocked, can cause exudative effusion. It could be chylous in nature due to a clogged thoracic duct causing chyle leaking. Microfilaria induced non - chylous effusions are uncommon. [1] Microfilaria containing aspirates from lymph nodes, subcutaneous nodules, breast, and hydrocele fluid are uncommonly documented. [8]Tuberculosis is the leading cause of pleural effusions in India. [1] Filaria has been discovered in connection with cancer in a small number of cases. [9]The majority of the authors have said that microfilaria circulate in the vasculature and lymphatic system, and that when a neoplastic lesion obstructs the vasculature or lymphatic system, they appear in the tissue fluid or shed off into the surface material. Increased blood vasculature in malignancy leads to an increase in microfilaria deposition at these sites. [1]There have also been numerous reports of idiopathic pleural effusion.

Tropical pulmonary eosinophilia (TPE) is an occult filariasis with pulmonary infiltrates on chest radiographs and peripheral eosinophilia. Paroxysmal dry cough, wheezing, dyspnea, anorexia, malaise, and weight loss are all symptoms. TPE, on the other hand, is found in less than 0.5% of cases. It is caused by a hypersensitivity reaction to microfilaria of lymphatic - dwelling parasites, and is usually associated with infection with *Wucheria bancrofti* or *B. malayi*. [1]

There was no tropical pulmonary eosinophilia or peripheral eosinophilia in our instance, the fluid was non chylousand *WucheriaBancrofti*microfilaria were identified with no microfilaria in the peripheral blood.

W. bancrofti pleural effusion is very rare. Cancer of lung, breast, lymphoma, and effusion from an occult primary are the most common causes of haemorrhagic pleural effusion. The pleural effusion in our case was massive and hemorrhagicindicating malignancy and the presence ofmicrofilariawas a coincidence. Microfilaria in pleural fluid is a rare occurrence that necessitates a high index of suspicion and meticulous screening of aspiration smears, particularly in endemic location.

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Conflicts of interest - There are no conflicts of interest.

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