http://jmscr.igmpublication.org/home/
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v11i2.03

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Lung Malignancy with Microfilariae: Causal Association or Incidental Finding

Authors
Nivedita Bastia[1], Rekha Manjhi[2], Aurobindo Behera[3]
[1]3rd year post-graduate, Department of Pulmonary Medicine, VSS Institute of Medical Science and Research, Burla, 768017, India
[2]HOD & Associate Prof, Department of Pulmonary Medicine, VSS Institute of Medical Science and Research, Burla, 768017, India
[3]Assistant Prof, Department of Pulmonary Medicine, VSS Institute of Medical Science and Research, Burla, 768017, India

Abstract
Filariasis has a wide spectrum of presentation and usually involves the lung in the form of tropical pulmonary eosinophilia with pulmonary infiltrates and peripheral eosinophilia. Malignancy in association with microfilaria in cytological evaluation of pleural effusion is extremely rare. In this context, we hereby report a case of 80 year old male who presented with left sided chest pain, hemoptysis, with occasional cough & fever. Pleural fluid cytology revealed microfilaria and biopsy from lung mass revealed squamous cell carcinoma. Role of filariasis in tumorigenesis is controversial.
Keywords: *Pleural effusion, microfilariae, lung malignancy.*

Introduction

Lymphatic filariasis is endemic in India and Southeast Asia. While more than 120 million people are infected with lymphatic filariasis globally, fewer than 1% manifest pulmonary symptoms of TPE (Tropical pulmonary eosinophilia)[1]. Following mosquito bite injection of the infective third stage larvae, the nematodes develop into the adult male and female worms (macrofilaria) which take up residence in the lymphatics and lymph nodes. From here, microfilariae are released into the peripheral circulation to be picked up by mosquito vectors completing the life cycle. In lymphatic filariasis, microfilariae levels in the blood can peak at specific times of day (periodicity), which may be important diagnostically. However, in TPE, microfilariae are commonly absent from the peripheral blood although they have been detected in lung and lymph node biopsies. Clinical manifestations of filariasis range from asymptomatic microfilariasis to acute manifestations such as fever, epididymo-orchitis, lymphangitis, lymphadenitis, or chronic such as hydrocele, lymphedema, elephantiasis, topical pulmonary eosinophilia[2,3]. Microfilaria are not just confined to the lymphatic system but are also associated with other organs, subcutaneous tissues and serous cavities like pleura and pericardium[4.] Microfilaria has been observed as coincidental findings with other inflammatory conditions, primary malignant tumors and in

metastatic deposits[5]. Detection of microfilaria is infrequently reported during the cytological evaluation of various lesions of body cavity fluids. The presence of microfilaria in pleural fluid cytology is very rare even in endemic countries.

Case Report

My patient is an 80-year-old male who presented with complaints of left side chest pain for 6 months, hemoptysis for 3 months with occasional cough, intermittent fever, weight loss & anorexia. The patient has no comorbidity being ex-smoker & non-alcoholic.

The patient was conscious and oriented with vitals stable. Patient had bilateral leg swelling without any pallor, icterus, clubbing & lymphadenopathy. Respiratory System examination shows features of left lower lobe lung mass.

Haematological investigations parameters are normal except ↑ TLC count (24000/mm^3) with eosinophilia (670/ml). Biochemical investigations for liver and renal function test are normal with normal blood sugar. Viral markers for HIV, HBV & HCV are negative. Sputum examination for Mycobacterium tuberculosis is nagative both for AFB staining & CBNAAT. Biogenic culture for sputum sample is negative. Pleural fluid analysis shows low ADA value with high content of protein and LDH. Pleural fluid CBNAAT test is negative. However cytology test for pleural fluid detects few microfilariae scattered among inflammatory cells. In CXR there is rounded homogenous opacity seen in the left lower lobe. USG study for abdomen and pelvis is normal. CECT thorax report is left lower lobe mass with mediastinal lymphadenopathy & left side mild pleural effusion with the pleural thickening. Bronchoscopy finding left lower lobe bronchus is externally compressed with fresh blood present over there. CT guided transthoracic biopsy report shows moderately well-differentiated squamous cell carcinoma with immunohistochemistry finding EGFR positive & IHC Score (3+).

Figure 1: CXR PA view thorax shows homogenous opcacity present on left lower and midzone suggestive of mass lesion.

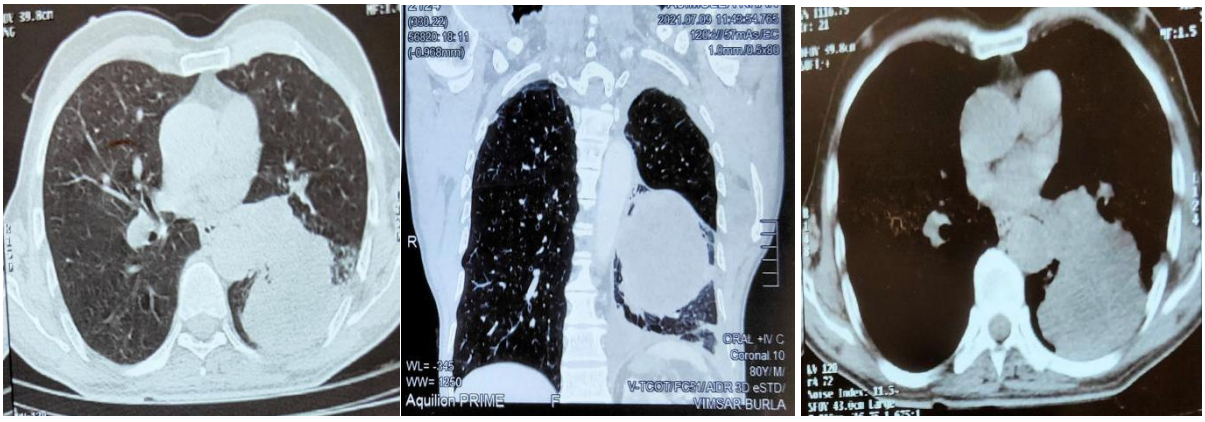

Figure 2: Shows CECT images of lung mass in sagittal, coronal and mediastinal window.

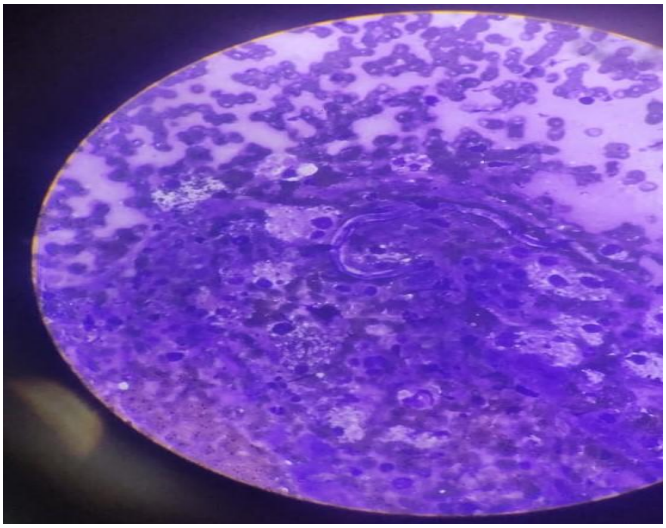

Figure 3: Shows cytology slide of pleural fluid containing few microfilariae scattered within inflammatory cells in background.

Patient was treated with Tab Di-ethyl Carbamazine 6 mg/kg with three divided doses for 21 days and Tab Albendazole. Then patient was put on appropriate chemotherapy regimen.

Discussion

Here in this case final diagnosis of the patient is established as squamous cell carcinoma of lung but it is associated with presence of pleural fluid microfilariae. But the microfilare was not detected in blood.

Microfilaria have been identified in samples submitted for cytological examination, such as aspirated material from lymph node, breast lump, cutaneous swellings and also from bone marrow, bronchial aspirate, nipple discharge, ascitic, pleural, pericardial fluid, ovarian cyst fluid and cervicovaginal smears[6,7]. Although microfilaria's in unusual sites are considered incidental findings, association of microfilaria with debilitating conditions suggests that it may be an opportunistic infection or it may be coincidental with various neoplasm[8,9]. However, pleural effusion is an uncommon manifestation. Effusion if present is usually chylous, due to secretion of chyle from the occluded thoracic duct. Exudative or haemorrhagic effusions are very rare[10].

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 this sites[11]. This explains detection of microfilaria in pleural fluid but it does not alter the clinical and pathological presentation of malignancy. Role of microfilaria in causing malignancy remains unexplained but there are increasing reports of malignancy associated filarial detections[8,9,10].

Conclusion

Though filariasis is common in our country, detection of microfilariae in pleural fluid is a very uncommon finding. Its association with Squamous cell carcinoma of the lung is a coincidence, making this case rare.

References

1. Vijayan VK. Tropical pulmonary eosinophilia: pathogenesis, diagnosis and management. Curr Opin Pulm Med. 2007;13(5):428–433.
2. Garg R, Sodhi R, Jabeed P, Rastogi A. Nonresolving pleural effusion in an elderly woman: A case report. Ann Thorac Med 2010;5:247-8.
3. Arora VK, Gowrinath K. Pleural effusion due to lymphatic filariasis. Indian J Chest Dis Allied Sci 1994;36:159-61.
4. K Prasanthi, K Nagamani, N K Saxena. Unresolving pericarditis: Suspect filariasis in the tropics. Indian Journal of Medical Microbiology. 2010;28:73-5.
5. Sachin S Kolte, Rahul N Satarkar, Pratibha M Mane. Microfilaria concomitant with metastatic deposits of adenocarcinoma in lymph node fine needle aspiration cytology: A chance finding. J Cytol. 2010;27(2):78–80.

6. Walter A, Krishnaswami H, Cariappa A. Microfilaria of Wuchereria bancrofti in cytologic smears. Acta Cytol. 1983;27:432-6.
7. Khan AA, Vasenwala SM, Ahmad S. Coexistent metastatic adenocarcinoma and microfilaria in ascitic fluid. Acta Cytol. 1993;37:643-4.
8. Gupta K, Sehgal A, Puri MM, Sidhwa HK. Microfilariae in association with other diseases. A report of six cases. Acta Cytol. 2002;46:776-8.
9. Premi HS, Samaga BN, Subramanyam K, Shetty JK, Teerthanath S, Baikunje V et al. Microfilaria in pericardial effusion coexisting with spindle cell thymoma-a rare case report. Nitte University J Health Sci. 2011;1:40-2.
10. Chakrabarti N, Konar K, Mala, Bandyopadhyay A, Bose K. Incidental Detection of Microfilaria in Cytology: Report of Three Cases. Ann Clin Pathol. 2014;2(4):1033.
11. Gupta S, Sodhani P, Jain S, Kumar N. Microfilariae in association with neoplastic lesions: report of five cases. Cytopathol. 2001;12:120-6.