

Filarial Pericarditis Mimicking Metastatic Pericardial Effusion in a Young Male in Tropics: A Case Report

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ABSTRACT

Filariasis is a major public health problem in a tropical country like India. Famous Indian Physician Susruta in his book "Susruta Samhita" first described the disease in 6th Century. National Filarial Control (NFCP) was launched in 1955 but continuous increase in number of cases of filariasis shows failure of control programs. In India number of Filaria cases range from 31 millions of microfilaraemics to 23 million cases of symptomatic Filariasis & 473 million people at potential risk of developing filariasis. We here present a case of massive pericardial effusion which mimicked metastatic adenocarcinoma from a distant primary which otherwise proved to be caused by filariasis. Here we present a case of 28 yr male, resident of Patna district which is a Gangetic belt and an endemic zone for lymphatic filariasis. The patient presented to a Private Cardiology Hospital with complaints of cough since 45 days and shortness of breath since 20 days. This case is a pericardial effusion with low voltage complex on ECG. Hemorrhagic effusions are mostly suggestive of malignant effusions and are quite rare in filariasis. In this case on examination of the pericardial fluid microfilariae was observed in hemorrhagic background under the microscope but the peripheral blood was clear of any microfilariae, and there were no other findings of filariasis in the patient. The chemical findings did not suggest filariasis. Other causes of hemorrhagic

pericardial effusion were ruled out. This case points to the fact that whenever any fluid is examined, it should be borne in mind that parasite infestation could be an occurrence, however rare it may be. Hence, in any patient with the above features and where a clear etiology to the pericardial effusion cannot be established, one must search thoroughly the microscopy of the fluid to check for microfilariae, especially if the patient is in the endemic zone.

Keywords: Filariasis, Pericardial Effusion, Parasite Infestation, Metastatic Adenocarcinoma, Microfilaria.

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INTRODUCTION

Filariasis is a major public health problem in a tropical country like India. Famous Indian Physician Susruta in his book "Susruta Samhita" first described the disease in 6th Century. ¹ National Filarial Control (NFCP) was launched in 1955 but continuous increase in number of cases of filariasis shows failure of control programs.²

In India number of Filaria cases range from 31 millions of microfilaraemics to 23 million cases of symptomatic Filariasis & 473 million people at potential risk of developing filariasis. Lymphatic filariasis being the most common type.³ Filariasis is classified into three groups based on predominant organ involved. The groups are Lymphatic group, Cutaneous group & body cavity group.⁴ Most common types are lymphatic and cutaneous group of filariasis which present as Acute adenolymphangitis (ADL), Filarial

fever, Tropical Eosinophilia & Subclinical Syndrome. Uncommon manifestations of Filariasis are filariasis of breast, subcutaneous nodules, Lymphadenovari in axilla & other areas.⁴ Massive pericardial effusion due to filariasis is extremely rare. We here present a case of massive pericardial effusion which mimicked metastatic adenocarcinoma from a distant primary which otherwise proved to be caused by filariasis.

CASE REPORT

We present a case of 28 yr male, resident of Patna district which is a Gangetic belt and an endemic zone for lymphatic filariasis. The patient presented to a Private Cardiology Hospital with complaints of cough since 45 days and shortness of breath since 20 days. Routine investigations were done along with ECG,

ECHO and Pre-cath profile. The respiratory rate was found to be increased. ECG report showed low voltage complex. ECHO of heart showed normal sized cardiac chambers. The valves of the heart were normal. Biventricular septal functions were adequate. Massive Pericardial Effusion was found all around the heart. Pericardial fluid behind posterior wall was 2.32 cm. Pericardial fluid along the left ventricle side was 2.62 cm. Along the right ventricle true wall it was 1.68 cm. Right ventricle diastole collapse was present which suggested of cardiac tamponade. Inferior vena-cava was found to be dilated. Swinging movement of heart was present due to accumulation of excess fluid around the heart. On the basis of ECHO report urgent Pericardiocentesis was planned under local anesthesia. Patient consent was taken & about 850 ml of hemorrhagic pericardial fluid was aspirated under aseptic condition. About 60 ml of aspirated fluid was sent for cytological examination to the pathology laboratory. The

hemorrhagic fluid was tested for Total Protein, Glucose, ADA & pH on ERBA-EM 200 which is a fully automated Clinical Chemistry Analyzer. Total Protein was 6.5 gm/dl (Globulin- 3.8 gm/dl), Glucose was 30 mg/dl, ADA was 18 U/L & the pH was alkaline. Serum Urea (29 mg/dl), Serum Creatinine (0.94 mg/dl), Serum Sodium (137 mEq/l), Serum Potassium (4.3 mEq/l), SGPT (34 U/L) were found within normal range. Haemogram of the patient showed Hb (13.8 gm/dl), RBC count (4.97 millions/ml), PCV (39.7 % - low), MCV (79.7 fl), MCH (27.7 pg), MCHC (34.7 gm/dl), Platelets (5.2 lakhs/micro L- High), Total WBC count (15200 cells/micro L; Neutrophils-79, Lymphocytes-14, Monocytes-2, Eosinophils-5, Basophils-0). Patient was non-reactive for HIV, HBS & HCV. Total Cell Count of pericardial fluid was done using Mindray BC-5150 five Part Hematology Analyzer & the cell count was found to be 4300 cells/ micro L with 60% being lymphocytes and 40% being neutrophils.

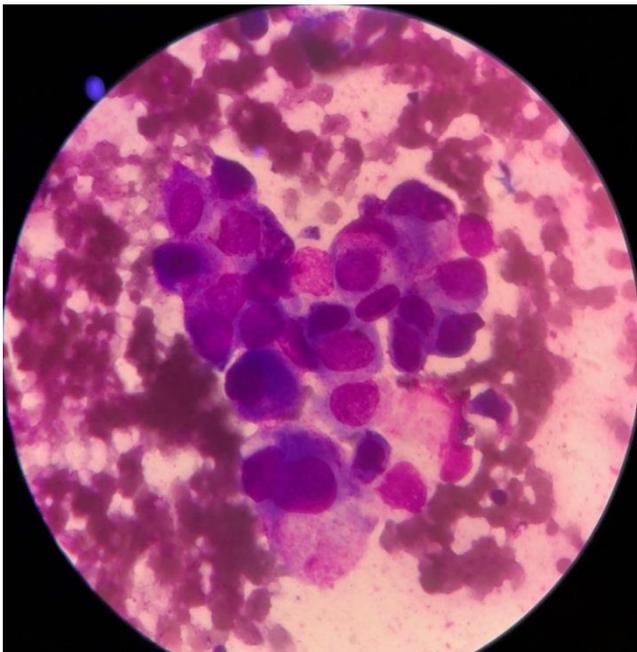


Fig 1: Oil immersion view of Reactive Mesothelial cells

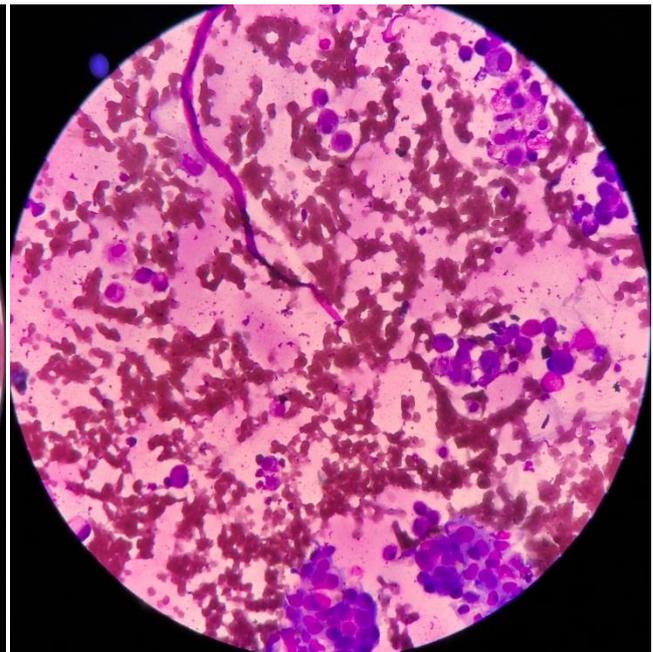


Fig 2: 40x view of Mesothelial cells with Microfilarial worm

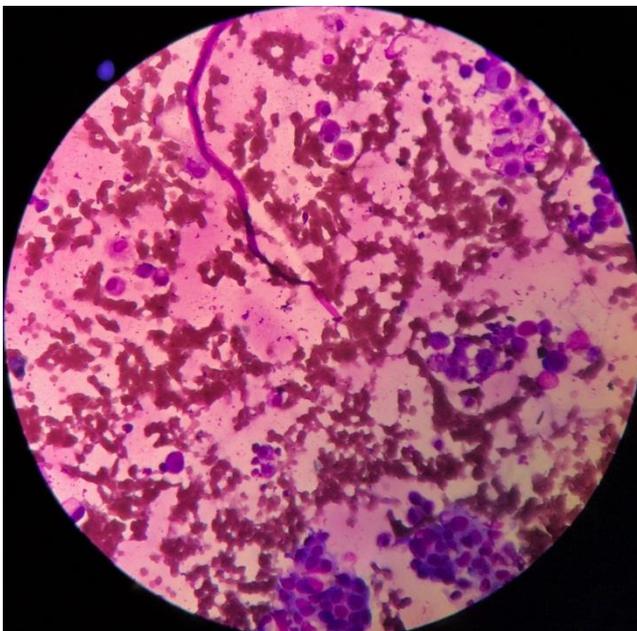


Fig 3: 40x view. Mesothelial cells with Microfilarial worm

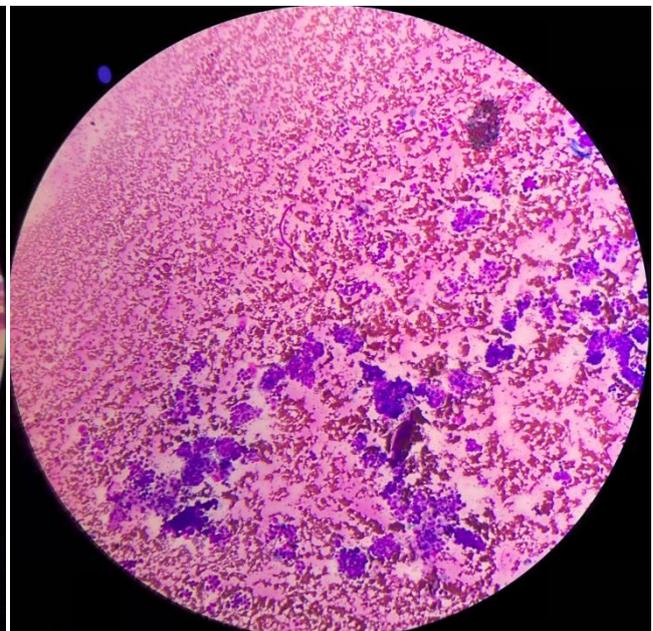


Fig 4: 10x view. Mesothelial cells with Microfilarial worm

Routine thick and thin blood smears were made from the hemorrhagic fluid and the slides were stained by Leishman stain. On careful examination under Scanner (4x), low power (10x), high power (40x) & oil immersion (100x) it was found that 3D clusters of malignant looking reactive mesothelial cells were seen which were mimicking adenocarcinoma cells. More careful examination under oil immersion revealed numerous microfilaria. A wet smear was made from 1 drop of blood along with a drop of normal saline and cover slip was placed over the drop. Under microscopic observation many live filarial worms which were motile were noted. Gram stains and AFB stains were also done which did not reveal any micro-organisms. Peripheral blood was negative for microfilariae. Treatment plan for the patient was planned for 21 days and he was kept under observation for a week. Diethylcarbamazine was administered 100 mg TID for 21 days. Patient condition significantly improved with the drug and the chief complaints of cough and shortness of breath were soon resolved. The patient is currently doing fine after 1 month and is on our follow up with no complications.

DISCUSSION

In a study done by Chaudhary et al. it was found that in tropical and sub-tropical countries lymphatic filariasis is a common health problem. It is transmitted by Culex mosquito and caused by two nematodes which are closely related, *Brugia Malayi* and *W. Bancrofti* which cause 10% and 90% of the cases, respectively.⁽⁵⁾ The larval forms, microfilariae, circulate in peripheral blood while the adult worm resides mostly in the lymphatic vessels.⁵ The microfilariae are found within solid organs, subcutaneous tissues, serous (pericardial and pleural) cavity along with lymphatic system. Microfilariae in pericardial effusion is a very uncommon manifestation of filariasis. In filariasis chylous serous effusions may occur.⁶ This case is a pericardial effusion with low voltage complex on ECG. Hemorrhagic effusions are mostly suggestive of malignant effusions and are quite rare in filariasis. The portal (point) of entry of microfilariae to the pericardial space in this case is still not known. In a study done by Munish et al. it was found that microfilariae probably enter tissue fluid due to vascular stasis (lymphatic or vascular obstruction) by tumors or scars, extravasation or damage to vessel walls by trauma or inflammation.⁷ In this case on examination of the pericardial fluid microfilariae was observed in hemorrhagic background under the microscope but the peripheral blood was clear of any microfilariae, and there were no other findings of filariasis in the patient. The chemical findings did not suggest filariasis. Other causes of hemorrhagic pericardial effusion were ruled out.

CONCLUSION

This case points to the fact that whenever any fluid is examined, it should be borne in mind that parasite infestation could be an occurrence, however rare it may be. So a thorough examination

under microscope is warranted. If neoplasm like cells are found in body fluid, search must continue to rule out microfilariae, as was suspected, but final diagnosis was pericardial effusion due to microfilariae. Hence, in any patient with the above features and where a clear etiology to the pericardial effusion cannot be established, one must search thoroughly the microscopy of the fluid to check for microfilariae, especially if the patient is in the endemic zone.

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