

FILARIASIS PRESENTING WITH PANCYTOPENIA DIAGNOSED BY MICROFILARIA IN BONE MARROW ASPIRATE – REPORT OF A RARE ENTITY FROM INDIA

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ABSTRACT

Filariasis is one of the major public health hazards among Indian population. The common features are asymptomatic microfilariaemia, acute adenolymphangitis, hydrocele and chronic lymphatic disease. There are very few reported cases of pancytopenia as a presenting feature of Filariasis. We describe a case of Filariasis who presented with features of pancytopenia and microfilariae were demonstrated in bone marrow aspirate.

Key Words: Filariasis; Pancytopenia; Bone Marrow Suppression

Introduction

Filariasis is endemic in tropical countries, especially in India.^[1] Lymphatic system and cutaneous tissue are commonly involved in Filariasis. Pancytopenia as a presenting feature of Filariasis has been rarely reported before. Microfilariae are usually recovered from peripheral blood samples. Demonstration of larva form in the bone marrow aspirate is also an uncommon finding. We describe a patient who presented with features of pancytopenia, which was finally diagnosed to be due to marrow infiltration by microfilariae. Such a presentation of Filariasis has been rarely reported before.

Case Report

A 68 year old male was admitted with history of progressive lethargy and fatigability for the past seven months. He also had a history of recurrent episodes of spontaneous gum bleeding over the past two months. There was no history of fever, bone pain, weight loss or anorexia. There was no history of diabetes, hypertension or any chronic drug intake. Examination revealed severe pallor without any evidence of jaundice, clubbing, sternal tenderness or lymphadenopathy. There were no petechial or ecchymotic spot on his skin, but retinal haemorrhages were detected by ophthalmoscopic examination. He was hemodynamically stable. Cardiac examination revealed grade II ejection systolic murmur at the left second intercostal space. Abdominal examination was normal and there was no organomegaly. Other systems were also normal. He had a haemoglobin of 4.5 gm/dl, MCV - 92.6 fl, MCH - 28 pg, MCHC - 32.1. PCV - 16%, reticulocyte count - 1.5%. Peripheral blood smear showed normochromic,

normocytic and hypochromic, microcytic red cells with anisocytosis. No abnormal cell or blast cell was present. His total leucocyte count was 3600/cumm (N24, L69, E5, M2) and platelet count 8000/cumm. ESR and lactate dehydrogenase were 101mm and 141 U/L respectively. All other investigations were normal.



Figure-1: Bone marrow aspirate with Leishman stain showing microfilaria of *W. bancrofti*

A bone marrow aspiration was performed which showed hypocellular marrow, a myeloid: erythroid ratio of 1:1 and presence of a microfilaria in the marrow. A thick peripheral smear was sent to the pathology department and motile, live microfilariae were seen within the smear. The patient was treated with tablet diethyl carbamazine citrate at a dose of 6 mg/kg daily for twelve days with single dose of Albendazole (400 mg). Four units of whole blood were transfused during his hospital stay. He was discharged with advice for regular follow up. Blood count gradually improved during his follow up visits. At the end of one month his hemogram showed a haemoglobin of 10.7

gm/dl. TLC 7600/comm. (N 62, L 30) and platelet 1.90 lakhs/cumm. Follow up bone marrow aspiration showed improvement of marrow cellularity.

Discussion

In India filarial infection is commonly caused by *W. bancrofti* and *Brugia malayi*, the former responsible for almost 98% of all cases. Human are the definitive host for the parasite whereas mosquito serves as the intermediate host. Lymphatics and cutaneous tissues are chiefly affected in this disease where the adult worms reside. Microfilariae reach the blood circulation through the lymphatics. The disease classically manifests as any one of lymphatic or occult filariasis.

The common clinical presentations of filariasis include asymptomatic microfilariaemia, acute adenolymphangitis, and chronic lymphatic disease. In spite of being clinically silent, majority of patients have evidence of sub clinical disease including microscopic hematuria, proteinuria, lymphatic channel ectasia of subcutaneous tissue and scrotum. Various rare entities were previously reported in filariasis like, filarial pleural effusion, glomerulonephritis, breast lump and ovarian and pelvic filariasis.^[2-5] Our patient did not have any lymphatic or cutaneous stigmata of filariasis and symptoms of pancytopenia were the predominant clinical features.

Pancytopenia with bone marrow infiltration by microfilariae has been rarely reported before. One case report previously showed microfilaria in the bone marrow aspirate of a young boy who presented with pancytopenia.^[6] The presentation in this boy was gum bleeding, much alike our case. However no hemoparasite could be documented in the peripheral blood smear. Umashankar T, et al. reported another case of Filariasis in a 17 year old female where pancytopenia was the presenting feature.^[7] Though they documented microfilariae in marrow aspirate similar to our patient, there was evidence of megaloblastic anemia rather than marrow hypoplasia. In their opinion the presence of microfilaria in the marrow was an incidental finding. Presence of microfilaria in the marrow aspirate has also been supported by few other reports.^[8,9] Microfilariae circulate freely in the peripheral blood and may be trapped in various organs.^[7] They can be detected in the thyroid, breast, lymph nodes, subcutaneous nodules and in cervical scrape smears.^[10-12] This can explain the lodgment of microfilariae within bone marrow.

In this patient, presence of pancytopenia with almost

normal systemic examination was very much provocative for a provisional diagnosis of aplastic anemia. Demonstration of microfilaria within the marrow aspirate was the first clue for the diagnosis of filariasis in our patient which was later on confirmed by presence of microfilariae in the peripheral blood sample and improvement of hemocytopenia after treatment with anti-filarial agent. Absence of eosinophilia in our case may be due to altered immune status evoked by filariasis. The cause of marrow suppression in filariasis is uncertain. It has been postulated that it may be due to liberation of some toxic material by the growing microfilariae within the marrow.^[6] The alteration of myeloid and erythroid ratio in our patient supports this hypothesis. This case has been reported as an instance of rare presentation of filariasis.

Conclusion

Rarely pancytopenia with marrow suppression may be the presenting feature of Filariasis. This uncommon face of such an endemic disease should be kept in mind while evaluating a patient of bone marrow failure.

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