

Tropical Pulmonary Eosinophilia

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Abstract

Tropical Eosinophilia was first described in 1940 and labelled as “pseudotuberculosis with eosinophilia” [2], the term tropical pulmonary eosinophilia (TPE) was first coined by Weingarten in 1943 [3] to a syndrome of wheezing, fever, eosinophilia and bilateral mottling of the lungs. This was followed by a series of reports describing similar conditions from the tropical regions such as the Indian subcontinent [4-6]. Here we present a case of a 12 year old boy who presented with complaints of ear ache and swelling on side of neck bilaterally and on examination multiple neck nodes were palpable. On peripheral smear examination and followed by bone marrow study, Tropical eosinophilia was diagnosed.

Keywords: Tropical Pulmonary Eosinophilia, extra pulmonary manifestations, Diethylcarbamazine.

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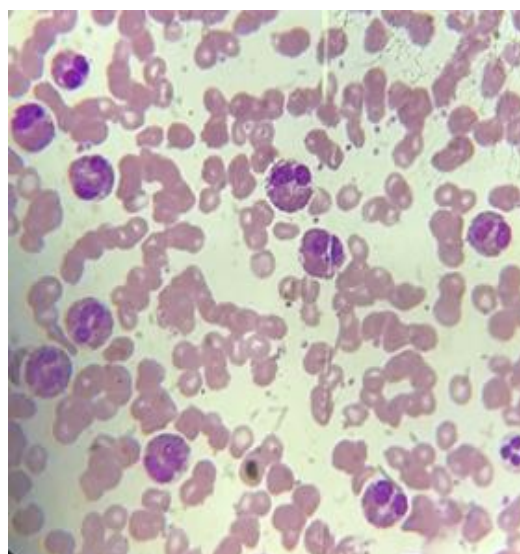
INTRODUCTION

TPE occurs as an unusual hypersensitivity response to the filarial antigens of *W. bancrofti* and *B. malayi* and occurs mostly in young males and in an age group of 15-40 years. Although it may affect multiple body systems, the respiratory system is chiefly involved with symptoms such as chiefly cough, breathlessness, wheezing and chest pain. Extrapulmonary manifestations such as lymphadenopathy and hepatosplenomegaly are also seen [7].

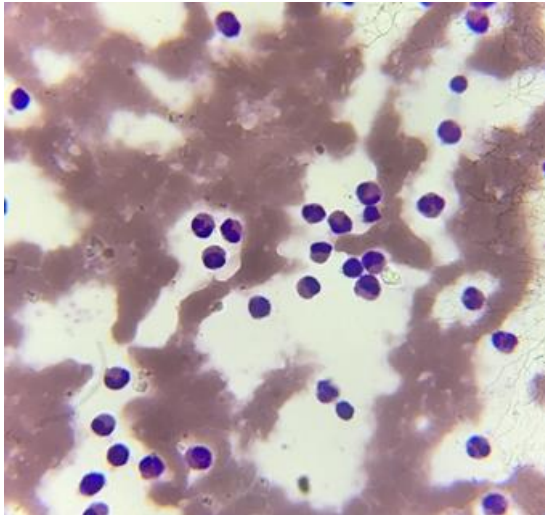
CASE REPORT

A 12 year old boy presented with complaints of left sided ear ache with pus discharge from left ear and swelling on the side of the neck bilaterally. He had mild cough and no other respiratory symptoms such as fever, breathlessness, wheezing, and chest pain. On examination neck nodes were palpable and auscultatory findings were unremarkable. Initial blood reports show an elevated total WBC count (61,800 cells/mm³) and eosinophils were 67%. ESR was also elevated (50mm/hr). X ray was unremarkable. USG neck revealed enlarged bilateral level I, III, IV nodes, largest measuring 2.7x0.4 cm. USG abdomen revealed subcentimetric mesenteric nodes. FNAC Right cervical lymph node reported reactive population of lymphocytes and scattered eosinophil's. Peripheral smear was done to rule out hematological malignancy. Smear reported Normocytic normochromic blood

picture with absolute eosinophilia (AEC= 50526 cells/mm³) and platelets were adequate. Chest Xray findings were unremarkable. Owing to the clinical symptoms, history of contact with dirty and polluted water, and a peripheral smear report of Absolute Eosinophilia, the patient was started on antifilarial chemotherapy with diethylcarbamazine (DEC). Bone marrow aspirate revealed bone marrow hyperplasia, eosinophilia with increase in eosinophil precursors, no abnormal cells were noted.

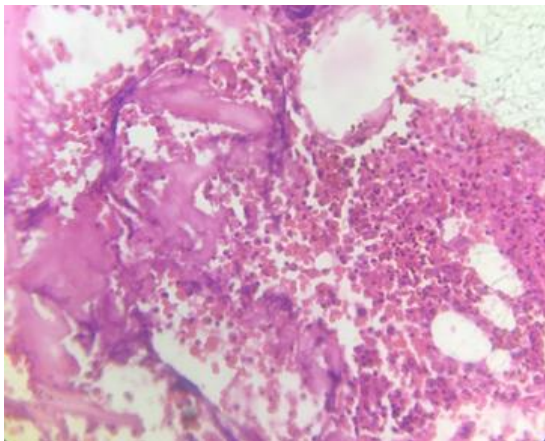


Peripheral Smear



Bone marrow Aspirate

Bone marrow biopsy shows increase in Eosinophils and its precursors (Eo stab 8%, Eo meta 21, Eo myelo 26%). No abnormal cell infiltration/ granuloma/ parasite/ necrosis seen.



Bone marrow biopsy

On follow up after 2 weeks, total WBC count (11,600 cells/mm³), ESR (1mm/hour), and differential count (N_{55%} L_{40%} E_{5%}), absolute eosinophil count (522 cells/mm³) was reported confirming diagnosis of Tropical Pulmonary Eosinophilia.

DISCUSSION

Eosinophilia can be nonclonal (reactive) such as the ones due to parasitic infections, allergic conditions (asthma, dermatitis, drug reactions), or clonal (neoplastic). In this case, since no abnormal cells were noted in blood or bone marrow studies, the diagnosis was confined to nonclonal. Since there was no evidence of any end organ damage the possibility of hypereosinophilic syndrome was also ruled out. Owing to history, clinical examination findings and dramatic response to DEC, the diagnosis of tropical eosinophilia was confirmed.

TPE is a syndrome of wheezing, fever and eosinophilia, predominantly seen in areas with filarial endemicity. It is found in less than 1% of filarial infections and occurs as a hypersensitivity reaction to microfilaria. It may involve multiple body systems, however cases with only non-pulmonary manifestations have also been reported. Systemic symptoms include fever, weight loss, fatigue and malaise. The respiratory symptoms are chiefly cough, breathlessness, wheezing and chest pain. Extra pulmonary manifestations include lymphadenopathy and hepatosplenomegaly [7].

Laboratory findings are characterized by a striking eosinophilia >3000/ μ m which may rise as high as 80,000/ μ m [7]. Erythrocyte sedimentation rate (ESR) is usually elevated in 90 per cent of the cases. High serum levels of IgE and filarial-specific IgE and IgG are found [1].

Even though a wide majority may present with respiratory symptoms, chest radiograph findings may be normal in upto 20% of cases. However it shows dramatic clinical improvement in response to specific antifilarial chemotherapy with diethylcarbamazine (DEC) [1].

CONCLUSION

In summary, tropical pulmonary eosinophilia is seen in certain endemic areas and even though respiratory symptoms are predominantly seen, individuals might also present with non-pulmonary symptoms with an increase in absolute eosinophil count. TPE also shows dramatic improvement with antifilarial treatment with DEC.

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