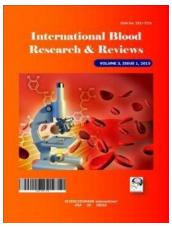

International Blood Research & Reviews

9(1): 1-5, 2019; Article no.IBRR.45392
ISSN: 2321–7219

Overt Clinical Hypereosinophilia in T- cell Non Hodgkin Lymphoma: A Case Report

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Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/IBRR/2019/45392
Editor(s):
(1) Dr. Mehmet Sonmez, Professor, Department of Haematology, School of Medicine, Karadeniz Technical University, Turkey.
(2) Dr. Armel Herve Nwabo Kamdje, Professor, Department of Biomedical Sciences, University of Ngaoundere, Cameroon.
Reviewers:
(1) Kritika Subramanian, St. George's University School of Medicine, Grenada.
(2) Arthur N. Chuemere, University of Port Harcourt, Nigeria.
Complete Peer review History: http://www.sciencedomain.org/review-history/27814

Case Report

Received 21 September 2018
Accepted 01 December 2018
Published 17 December 2018

ABSTRACT

The study describes a case of hyper-eosinophilia who was presented with overt manifestation of high eosinophil and detected to have underlying non Hodgkin lymphoma. The male patient was presented with profound weakness and multiple non itchy nodular skin lesion for 2 weeks. Biopsy from skin nodule showed deposits of abnormal lymphocytes. Lymph node biopsy showed effacement with mono nuclear abnormal cells which showed positivity for CD4 and 5, negative for cytokeratin and CD20. He was diagnosed to have T-NHL. [Fig. 3a, Fig. 3b] Bone marrow showed involvement by NHL cells. His diplopia and headache responded to intra-thecal methotrexate and possibly CNS involvement of disease was considered. Family opted out of allopathic treatment plan due to clinical progression. He later died of disease progression. This case illustrates the rare and interesting association of overt clinical hyper-eosinophilia and T NHL. The study suggests that cases with hyper eosinophilia should be evaluated thoroughly for T cell disease.

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Keywords: T non Hodgkin lymphoma; eosinophilia; lung nodules; skin nodules.

1. INTRODUCTION

Hyper-eosinophilia is defined as absolute eosinophil count > 1500/cmm. Although numerous etiologies have been enlisted, a broad classification of reactive and malignant proliferation can be considered [1]. While primary eosinophil lineage myeloid malignancy is a separate entity now, reactive eosinophilia is also been noted with lymphomas. Eosinophilia secondary to increased cytokines from malignant or benign helper T cells are being considered as the cause in the majority of conditions [2]. T NHL, a malignant clonal T cell disease is reported to have association with eosinophilia. However eosinophilic proliferation to an extent of significant organ infiltration and damage is rarely seen.

We describe a case of hyper-eosinophilia who presented with overt manifestation of high eosinophil and detected to have underlying non Hodgkin lymphoma.

2. CASE REPORT

A 48 year old male presented with profound weakness and multiple non itchy nodular skin lesion for 2 weeks. He had fever, low grade along with significant weight loss [8 kg over last 1 months]. There were no complaints of dyspnea, cough, seizure or gastro intestinal disturbances. Past history was significant with cardiac conduction defect noted 6 months back and pacing was done. Medical records of that admission were not available. Clinical examination showed pallor, generalised lymphadenopathy and mild hepatomegaly. No icterus or petechaie noted. There were multiple nodular skin lesions with erythematous base present at trunk and extremities [Fig. 1]. Liver was palpable 2 cms below costal margin while spleen was not palpable. Initial laboratory evaluation showed mild anemia [Hb-9.2 gm%] with normal total leucocyte and platelet count but marked eosinophilia [AEC 3400/cmm]. Serum LDH was high [545 unit/dl], Createnine [0.6 mg/dl] and LFT were normal. Blood cultures were sterile. CT chest showed bilateral diffuse nodular opacities in middle and lower zone [Fig. 2]. Remaining lung parenchyma was normal. Biopsy from skin nodule showed deposits of abnormal lymphocytes. Lymph node biopsy showed effacement with mono nuclear abnormal cells which showed positivity for CD4 and 5, negative for cytokeratin and CD20. He was diagnosed to have T-NHL. [Fig. 3a, Fig. 3b] Bone marrow showed involvement by NHL cells. He was started on CHOP [Vincristine, Prednisolone, Doxorubicin and Cyclophosphamide] based chemotherapy. His lymphadenopathy and skin nodules showed marked regression post first cycle of chemotherapy. Blood count after first cycle showed normalisation of eosinophil counts. He remained asymptomatic till the second cycle of chemotherapy. He presented with re-appearance of new corps of skin nodules and diplopia. MRI brain was normal and cerebro-spinal fluid analysis showed increased protein with normal sugar, increased cell counts although malignant cells were absent. His diplopia and headache responded to intra-thecal methotrexate and possibly CNS involvement of disease was considered. His chemotherapy was upgraded with addition of etoposide [CHOEP]. Family opted out of allopathic treatment plan due to clinical progression. He later died of disease progression.

3. DISCUSSION

Cutaneous T NHL constitutes 2% of all haematological malignancies in adults. It has the variable clinical presentation. Association of eosinophilia has been reported in the literature with cutaneous T NHL as well as other forms [3,4]. Eosinophilia has been noted as isolated blood finding or in skin nodules. Index case presented with overt clinical hypereosinophilc features as cardiac conduction defect, skin nodules and chest infiltrates.

Eosinophilia manifestation includes cardiac conduction defects and myocarditis, pneumonitis, pleural effusion, allergic bronchospasm, cutaneous nodules, myositis, colitis and other variable spectrum [5]. Eosinophilia has an association in Hodgkin disease. About 15% of Hodgkin lymphoma has shown eosinophilia and some series reported survival advantage in this subgroup. However this advantage was non consistent with other reports [6]. Eosinophilia in non-hodgkin lymphoma group it is largely confined to T NHL. Eosinophil colony stimulation factor are being released by T cells. It present as a reactive non clonal phenomena with extrinsic hyper stimulation of eosinophil production. Clonal proliferation of eosinophil are noted in Myeloproliferative disorders like polycythemia Vera and Philadelphia positive CML. WHO define

clonality of eosinophil based on PDGFR alpha and beta abnormalities [7].

Anecdotal case report of eosinophilia with B NHL has been noted as well, probably due to co stimulation of T cell [8]. T NHL is an aggressive form of lymphoma and often shows sub-optimal response. Index case also showed transient clinical improvement on initial chemotherapy and showed progression within three cycles of therapy. Whether eosinophilia at presentation has any bearing with treatment plan or outcome, is unknown as this entity is rare. Predictability of malignant condition with isolated hypereosinophilia has been investigated and found to be strong for Hodgkin lymphoma and myleproliferative disorders [9].

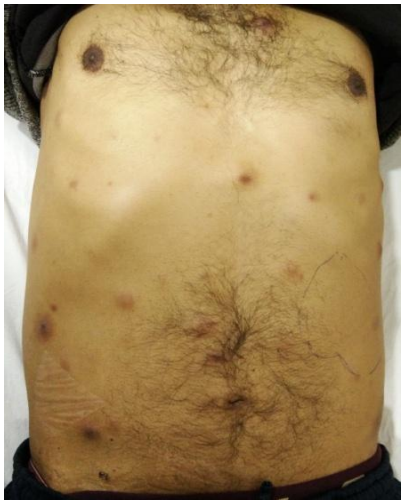

Fig. 1. Clinical photograph showing nodular skin lesions

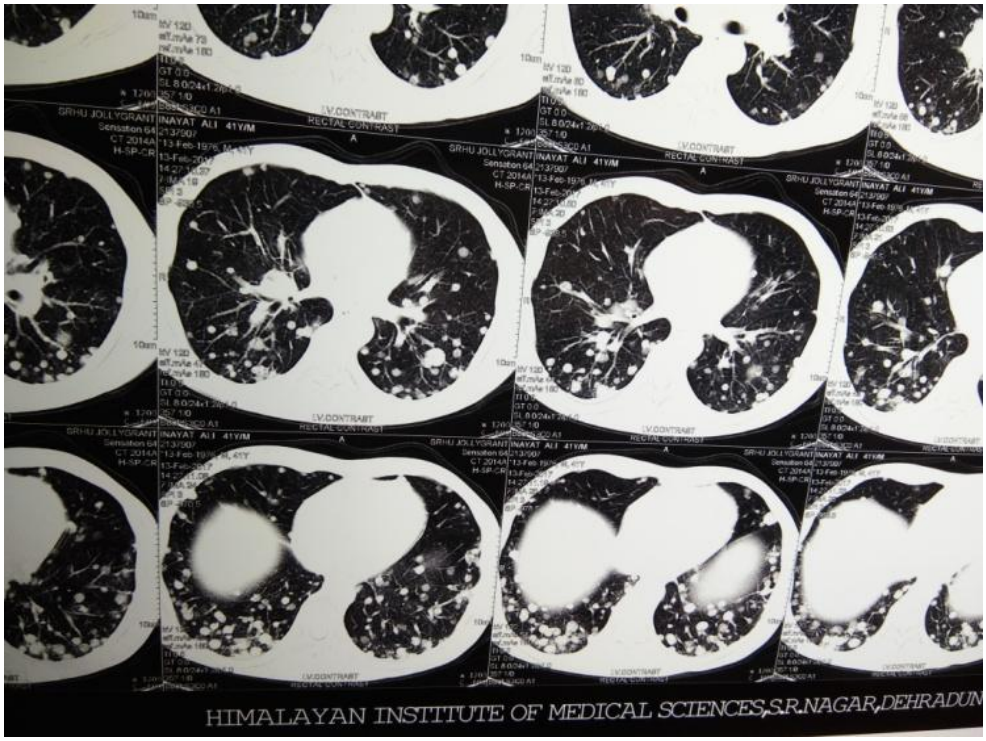

Fig. 2. CT scan showing nodular lesions in chest

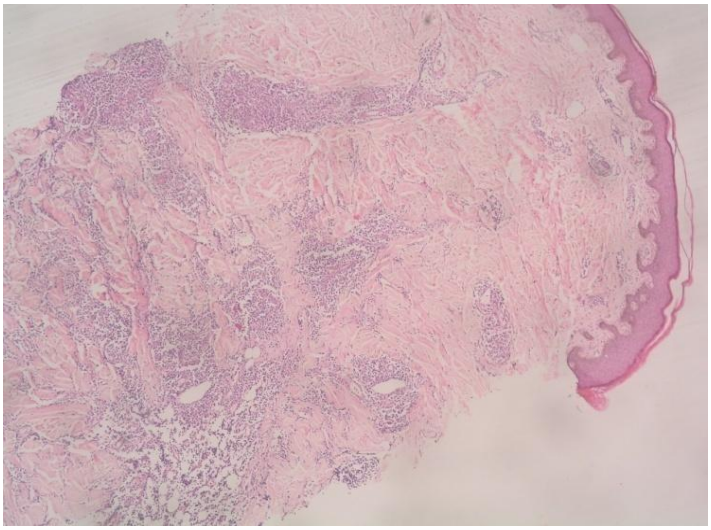

Fig. 3a. Skin biopsy [40X] showing infiltration by monomorphic population of cells

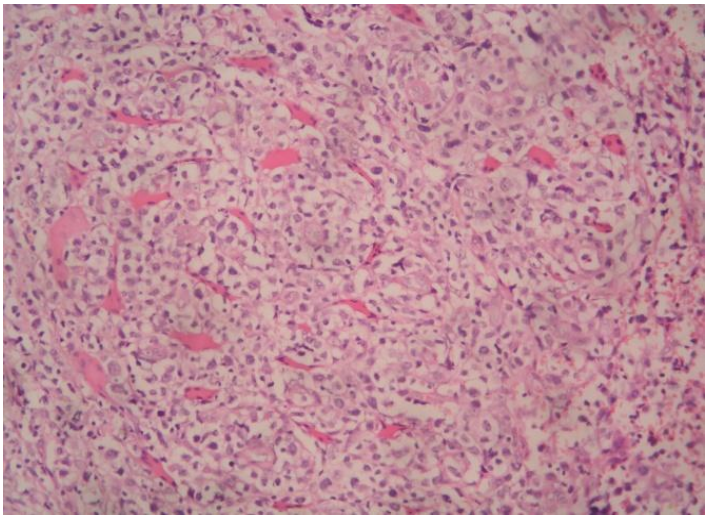

Fig. 3b. Lymph node biopsy [40X] showing gross effacement with atypical lymphoid cells

4. CONCLUSION

Cases with hyper eosinophilia should be evaluated thoroughly for T cell disease. The literature review revealed cases where NHL has been found as subclinical entity or cutaneous manifestation with hyper eosinophilia. This case illustrates the rare and interesting association of overt clinical hyper-eosinophilia and T NHL.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sciencedomain.org/review-history/27814