



# COEXISTENCE OF NON-HODGKIN LYMPHOMA AND EXTRAMEDULLARY HAEMATOPOIESIS IN A LYMPH NODE: A UNIQUE CASE DIAGNOSED BY FINE NEEDLE ASPIRATION CYTOLOGY

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## ABSTRACT

**Aim:** Non-Hepatosplenic extramedullary haematopoiesis is an uncommon finding and Extramedullary haematopoiesis (EMH) in lymph nodes is further rarity. This effort aims at highlighting an extremely rare coexistence of the two in the same lymph node.

**Case report:** We report an old man with co-existent Non-Hodgkin lymphoma and EMH in the same lymph node diagnosed by FNAC.

**Discussion:** It is rare to find extramedullary haematopoiesis in enlarged lymph nodes subjected to FNAC. To the best of our knowledge no case of co-existent Non-Hodgkin lymphoma and EMH has been reported previously.

**Conclusion:** This case emphasizes the possibility of Extramedullary haematopoiesis (EMH) in an enlarged lymph node with or without other pathological processes. It also underscores the significance of proper correlation of information for the diagnosis of the ailment which in this case could be done with very simple investigation protocol.

**Key Words:** Coexistence, Extramedullary hematopoiesis, Lymph node, Non-hodgkin lymphoma

## INTRODUCTION

Extramedullary haematopoiesis (EMH) occurs when bone marrow is destroyed due to some disease process like myelofibrosis or the marrow is replaced by malignant cells or storage cells. Lymph node may be the site of extramedullary haematopoiesis in case of myelofibrosis, haematolymphoid malignancy etc. but coexistence of Non-Hodgkin lymphoma and extramedullary haematopoiesis in the same lymph node is a very unusual finding. Here we report a case of a 63 year old male patient having extramedullary haematopoiesis coexisting with Non-Hodgkin lymphoma in the right supraclavicular lymph node which was diagnosed by FNAC.

## CASE REPORT

A 63year old male patient presented with multiple swellings in neck; weakness, abdominal discomfort for the last

6 months. On clinical examination severe anaemia, bilateral cervical lymphadenopathy (1-2 cm size) and mild hepatosplenomegaly were found.

CT scan of neck revealed multiple enlarged lymph nodes at right lower jugular, bilateral supraclavicular, bilateral paratracheal (right>left), pretracheal, precarinal, aorto pulmonary, subcarinal and bilateral hilar regions.

Routine haematological investigation revealed Hb -6.0 g%, TLC 24000/cmm , Platelets- 60000/cmm, NRBC – 16/100 WBC. Leukoerythroblastic blood picture was seen on examination of the peripheral smear.

FNAC of the right supraclavicular lymph node was requested which was done using 23G needle. MGG stained smears revealed high cellularity comprising predominantly mixed population of atypical lymphoid cells. Along with lymphoid population some immature cells of myeloid and erythroid lineage were seen. Megakaryocytes, identified by the presence of large multilobated

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nuclei and abundant granular eosinophilic cytoplasm, were seen consistently scattered along the smears.

A diagnosis of Non-Hodgkin Lymphoma along with extramedullary haematopoiesis was made based on cytomorphology.

## DISCUSSION

Extramedullary haematopoiesis occurs in various sites including liver and spleen. Occasionally it involves other organs. It is rare to find extramedullary haematopoiesis in enlarged lymph nodes subjected to FNAC. While reviewing literature we found cases depicting coexistence of leukaemic infiltration and extramedullary haematopoiesis in the same lymph node [1] but we are yet to encounter any past record of coexistence of Non-Hodgkin Lymphoma and extramedullary haematopoiesis in the same lymph node.

Without the relevant haematological investigations, differential diagnosis on FNAC smears is that of myeloid sarcoma; inflammatory disorders; lymphoma and metastatic carcinoma with multinucleated giant cells. Morphological findings aided by clinical and haematological findings are sufficient enough to distinguish extramedullary haematopoiesis from others [2,3].

Although Non-Hepatosplenic Extramedullary Hematopoiesis (NHS-EMH) is often associated with myelofibrosis with myeloid metaplasia (MMM) or thalassemia, it can also accompany other disorders, including hereditary spherocytosis, sickle cell anaemia, congenital dyserythropoietic anaemia, immune thrombocytopenic purpura, chronic myeloid leukaemia, polycythaemia vera, myelodysplastic syndrome, Paget disease, osteopetrosis, and Gaucher disease and treatment with myeloid growth factors. Occasionally, an associated disease is not identified [4].

Clinically, NHS-EMH may present as an incidental finding or with a symptomatic disease or condition, including pleural effusion, ascites, neurologic deficit, cardiac tamponade, chronic renal failure, acute respiratory failure, orbital proptosis, and subglottic stenosis [4].

In a retrospective review of cases of non-hepatosplenic extramedullary haematopoiesis by Koch C.Y. et al, 27 cases were found of which most (26%) were around vertebra as well as in lymph nodes (inguinal, para-aortic, para-tracheal and cervical), retroperitoneum, lung, pleura, genitourinary tract, skin etc. 18 cases were diagnosed as myelofibrosis with myeloid metaplasia (MMM) of which 12 were diagnosed as agnogenic myeloid metaplasia and 6 were diagnosed as post-polycythemic myeloid metaplasia. Of the 9 cases in the non-MMM group, 3 patients had congenital anaemia; 2 cases had chronic

lymphocytic leukemia; 3 cases having chronic myeloid leukemia, pachydermoperiostosis and cerebrovascular malformation respectively. One case had no detectable underlying disorder. Cases involving lymph nodes were associated with agnogenic myeloid metaplasia and post-polycythaemic myeloid metaplasia [4].

Mass-forming foci of NHS-EMH, sometimes mimicking tumor were also reported [2,3,5].

Our case depicts a very rare instance having features of non-hodgkin lymphoma and extramedullary haematopoiesis in the same lymph node diagnosed by FNAC with guidance from the relevant clinical, haematological and radiological findings.

## CONCLUSION

Non-Hepatosplenic extramedullary haematopoiesis is an uncommon finding and EMH in lymph nodes is further rarity. This case emphasizes the possibility of EMH in an enlarged lymph node with or without other pathological processes. It also underscores the significance of proper correlation of information for the diagnosis of the ailment which in this case could be done with very simple investigation protocol.

## ABBREVIATIONS

EMH = Extramedullary haematopoiesis  
FNAC = Fine Needle Aspiration Cytology  
NHL = Non-Hodgkin lymphoma  
NHS-EMH = Non-hepatosplenic extramedullary haematopoiesis  
Hb=Haemoglobin  
TLC = Total Leukocyte count  
NRBC = Nucleated red blood cells

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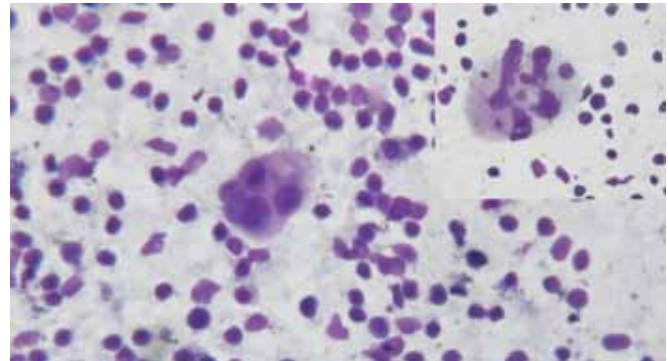
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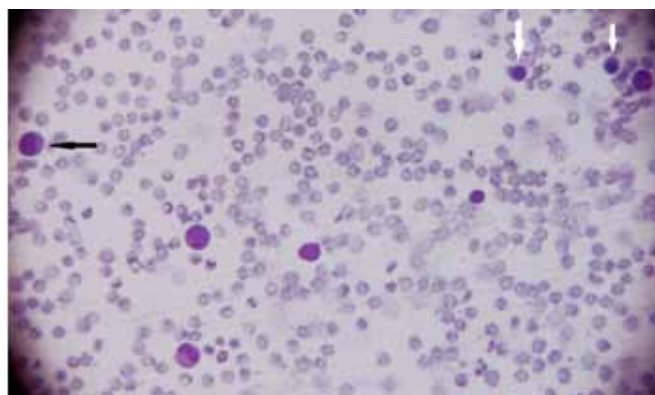
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**Figure 1:** CT Scan of Neck showing bilateral multiple enlarged lymph nodes



**Figure 3:** FNAC smears of the right supraclavicular lymph node (MGG STAIN); showing atypical lymphoid cells in a background of immature cells of myeloid and erythroid lineage; along with scattered megakaryocytes (shown in inset)



**Figure 2:** Peripheral Blood Film (Leishman Stain 1000X) showing leukoerythroblastic picture (white arrows: nucleated red cells; black arrow: metamyelocyte)