

Extramedullary Hematopoiesis (EMH) In A Cervical Lymph Node of A 24-Year-Old Female, A Rare Case

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Abstract: Small foci of extramedullary hematopoiesis can be a normal finding in the lymph nodes of infants and children. However, the presence of large foci of extramedullary hematopoiesis (EMH) in children or the presence of any degree of EMH in lymph nodes in adults is an abnormal finding.

Hereditary disorders of red blood cells and chronic myeloproliferative disorders are the usual causes in children and adults respectively.

Proliferation of bone marrow elements in a lymph node, in a patient with no known hematologic disorder, should trigger immediate bone marrow evaluation, as this could be the first clue in diagnosing underlying bone marrow disorder.

Keywords : Extramedullary hematopoiesis, lymph node, fine needle aspiration cytology (FNAC)

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I. Introduction

Extramedullary hematopoiesis (EMH) refers to the presence of immature hematopoietic cells in extramedullary (non-bone marrow) sites. EMH can be observed in any site of the body, including lymph nodes. It usually reflects a pathologic state and is rare in adults under physiologic circumstances. In children, EMH is considered physiologic up to 5 weeks of age for term infants.

We present an unusual case of a 24-year-old female who was found to have extramedullary hematopoiesis (EMH) in a cervical lymph node.

CASE PRESENTATION

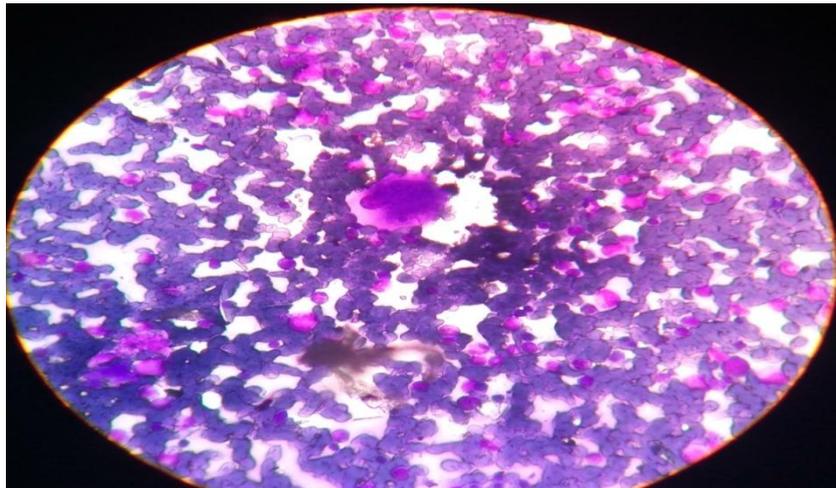
A 24 year old female presented with a cervical swelling on right side. The swelling developed one year ago. There was no history of fever or weight loss. Also no past history of any tuberculosis.

On examination a 3 x 2 cm of lymph node swelling found over right supra clavicular area. It was tender on touch, firm to hard in consistency and fixed to underlying structure (pic . 1).

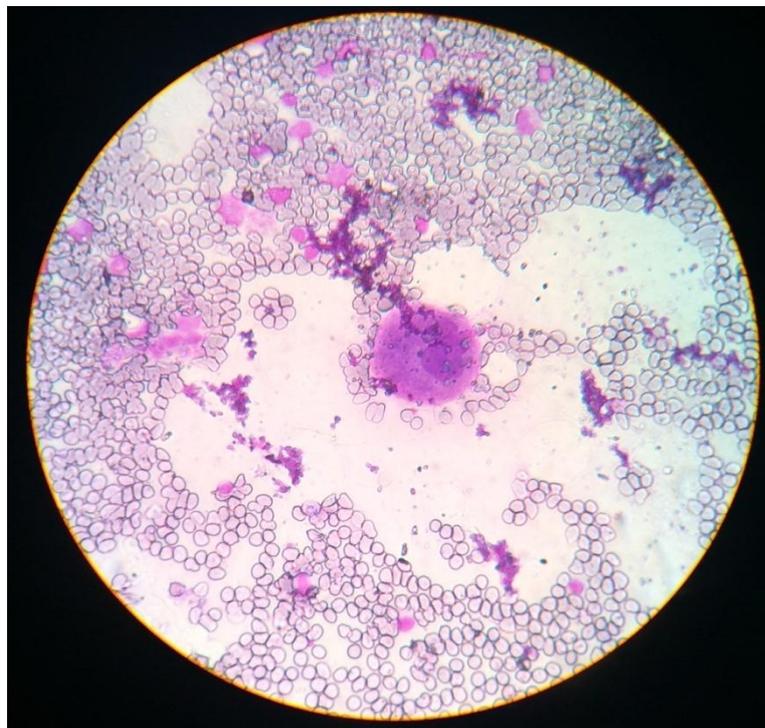


pic. 1

Fine needle aspiration was done. The smear showed lymphoid cells along with few megakaryocytes(pic 2 a,b). The presence of megakaryocytes is consistent with extra medullary hematopoiesis.

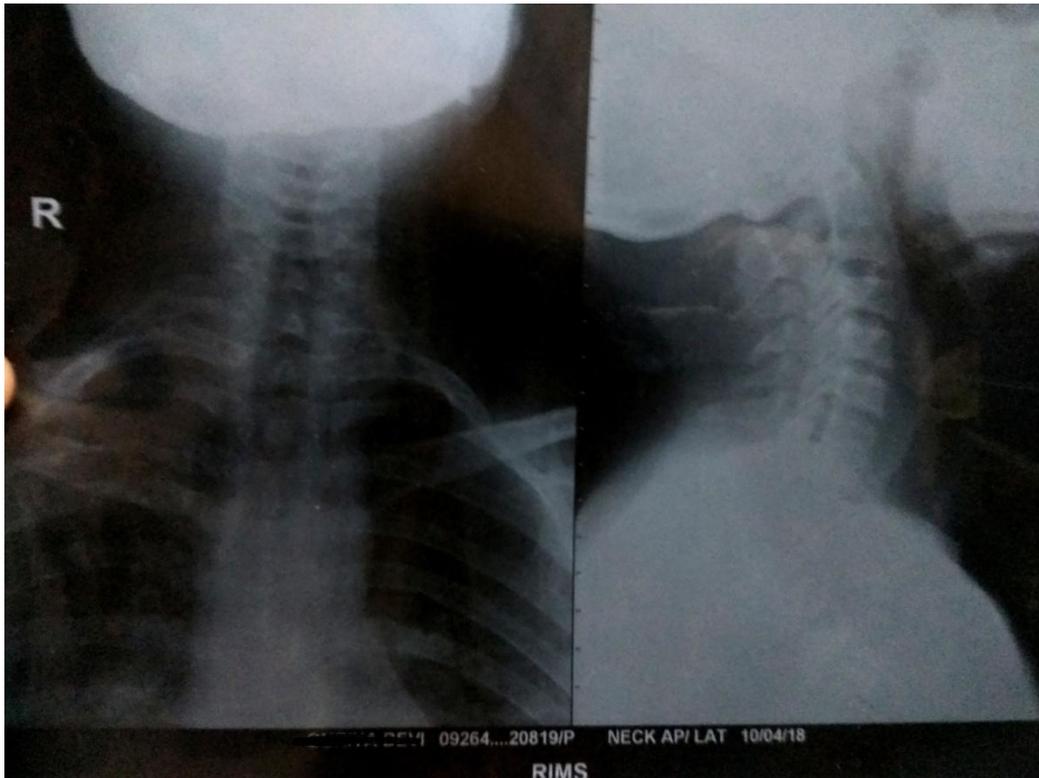


Pic 2a



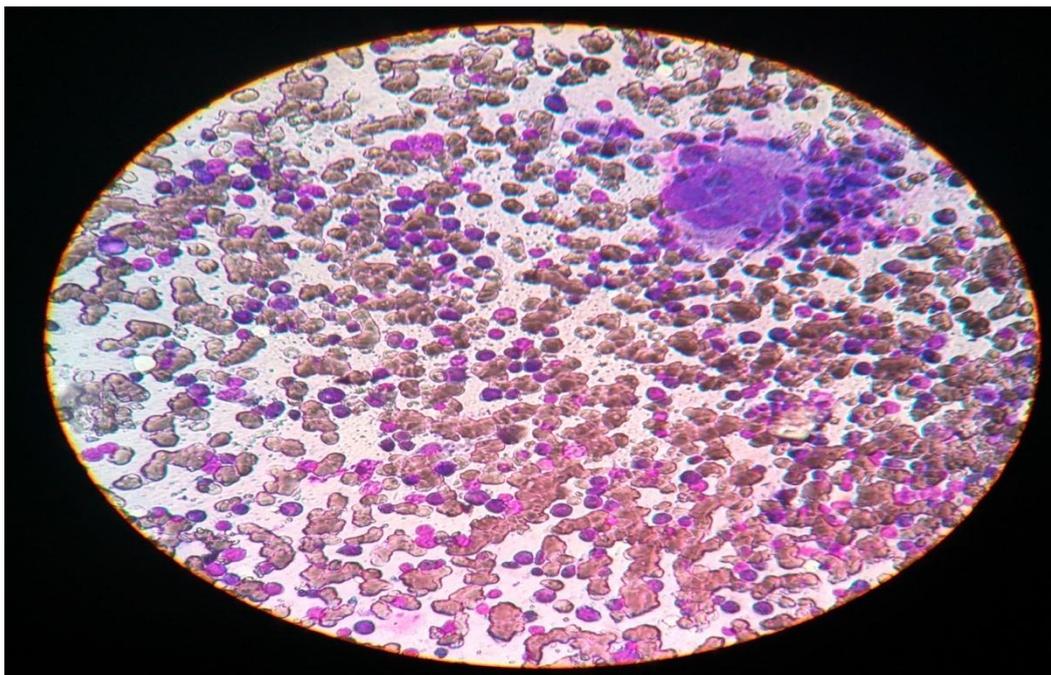
Pic 2b

X ray neck was done to exclude any bony lesion(pic 3)



(Pic 3)

Bone marrow examination was done next and the bone marrow picture was found to be within normal limit (pic4). The patient is now under regular follow up.



(Pic 4)

II. Discussion

Extramedullary hematopoiesis is a result of conditions that disrupt the bone marrow microenvironment, facilitating the egress of precursor cell, with an increase in circulating mature and immature marrow elements. After birth, there is normally very little proliferation of hematopoietic elements outside the marrow. Extramedullary hematopoiesis occurs in a number of conditions, including benign hematologic disorders (e.g.,

thalassemia, hereditary spherocytosis, sickle cell anemia, and congenital dyserythroblastic anemia), hematopoietic neoplasms, stromal disorders of the marrow (e.g., osteopetrosis), nonhematopoietic tumors, infectious, and storage diseases, as well as disorders of the circulation.

In a case of hematopoietic neoplasm that involves extramedullary site, better term to use is neoplastic myeloid proliferation (NMP), to differentiate it from EMH that occurs as a consequence of benign disorders. Neoplastic myeloid proliferation can be seen in association with myeloproliferative neoplasms, myelodysplastic syndromes, myelodysplastic/myeloproliferative neoplasms, and other myeloid derived malignancies.

Proliferation of bone marrow elements in a lymph node is not considered normal in an adult and should prompt an immediate search for an underlying bone marrow disorder. In children, the presence of EMH in lymph nodes could indicate undiagnosed benign hematologic disorder, and lymphadenopathy with EMH may be an initial manifestation. Delay in diagnosis and treatment could potentially shorten patient's survival.

III. Conclusion

In conclusion, our case illustrates the importance of recognizing EMH in a lymph node during routine fnac examination, especially in adults, since it can be an early sign of an underlying hematological malignancy. Proliferation of bone marrow elements in a lymph node, in a patient with no known hematologic disorder, should trigger immediate bone marrow evaluation, as this could be the first clue in diagnosing underlying bone marrow disorder. However no immediate bone marrow disorder may not be found, like in our case, and should be regularly followed up.

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