International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

The Utility of Bone Marrow Biopsy in Underlying Case of Hodgkin Lymphoma - A Case Report in Young Male

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Abstract: ***The frequency of bone marrow infiltration by Hodgkin lymphoma is low and varies from 3 to 18%. Clinically it represents stage IV disease. HL is categorisd into histological types, along with association of Epstein-Barr virus and its immunophenotype, BM infiltration in HL differs between populations. A 16 years old male presented with right cervical lymphadenopathy level V since 1 year 6 months. Fine needle aspiration and histopathology shows features of nodular sclerosis-hodgkin lymphoma. Most of the cases of Hodgkin lymphoma are diagnosed mainly by histomorphology. Further, for staging marrow bone marrow aspiration and biopsy was done. They also showed infiltration by lymphoma cells. To confirm Hodgkin lymphoma, immunohistochemical stains were done. Bone marrow infiltration by Hodgkin lymphoma is rare only 13% cases showed bone marrow infiltration in literature. This case report highlights the clinicopathological features and the histomorphology of bone marrow infiltration by Hodgkin Lymphoma-Nodular Sclerosis. Case report: A 16 years old male presented with painless right cervical lymphadenopathy (Level V), loss of weight and appetite for 1 year and 6 months. Fine needle aspiration showed features of classical hodgkin lymphoma and histopathology showed features of classical Hodgkin's lymphoma-nodular sclerosis. Further, staging marrow was done. Bone marrow aspiration and biopsy showed infiltration by Reed-Sternberg cells. To confirm Hodgkin lymphoma, immunohistochemical stains CD 45 and CD 15 were done. Conclusions: This case report highlights the clinicopathological features and the histomorphology of bone marrow infiltration by classical Hodgkin's Lymphoma-Nodular Sclerosis. As the role of bone marrow aspirate is minimal in the staging of Hodgkin lymphoma, bone marrow biopsy should always be done.***

Keywords: Hodgkin's lymphoma, nodular sclerosis, bone marrow biopsy

1. Introduction

Bone marrow infiltration by Hodgkin's lymphoma is rare with only 3 to 18% cases showed bone marrow infiltration in literature.1Clinically, it represents stage IV disease. HL is categorized into histological types, along with the association of Epstein-Barr virus and its immunophenotype. BM infiltration in HL differs between populations.2, 3There are different opinions regarding whether to do bone marrow biopsy or not in case of Hodgkin's lymphoma.4, 5, 6 The present case detected the involvement of bone marrow in case of Hodgkin lymphoma via bone marrow biopsy. It showed the significance of bone marrow biopsy in staging marrow in case of hodgkin's lymphoma.

2. Case Report

A male patient aged 16 years presented with right cervical lymphadenopathy level V since 1 year 6 months. The lymph node was painless and gradually increased in size. Patient had history of fever which was high grade and associated with chills and rigors. No history of weight loss or loss of appetite. No family history of tuberculosis or tuberculosis contact. No pallor, icterus, cyanosis, jaundice. On local examination no other lymph node palpable. Staging marrow was done and the hemoglobin was 8.3 gm%, TLC was $3.7x10^9$/l, Platelets were $448x10^9$/l. On peripheral blood film-RBC showed mild anisopoikilocytosis showing microcytes, elliptical cells, normocytes, few tear drop cells and mild hypochromia. Platelets were adequate on smear.

3. Investigations

On ultrasonography, there was no hepatosplenomegaly. Fine needle aspiration from right cervical lymph node was done and was diagnosed as Hodgkin lymphoma (figure-A). The histopathological showed incomplete nodules separated by fibrous septae. The nodules showed Reed Sternberg cells, mononuclear Hodgkin cells in the background of polymorphic population of lymphoid and few plasma cells (figure-B). The diagnosis was given asHodgkin lymphoma nodular sclerosis. On IHC Hodgkin cells were CD 45 positive and CD 15 was noncontributory. Bone marrow aspirate was particulate with normocellular marrow. Erythroid series was normoblastic. Megakaryocytic series was adequate.

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from both posterior superior iliac spine showed normocellular to mildly hypocellular marrow spaces which showed infiltration by lacunar, mononuclear and Reed sternberg cells in a inflammatory background composed of eosinophils, histiocytes and occasional epithelioid cells (figure C, D). Areas of fibrosis also noted. Myeloid and Erythroid series were adequately represented whereas megakaryocytic series showed hyperplasia.

4. Discussion

As the role of bone marrow aspirate is minimal in the staging of Hodgkin lymphoma, bone marrow biopsy should be the method of choice. The presence of Reed sternberg cells suggest the possibility of early detection and diagnosis of Hodgkin Lymphoma especially in patients presenting with pyrexia of unknown origin and cytopenias.

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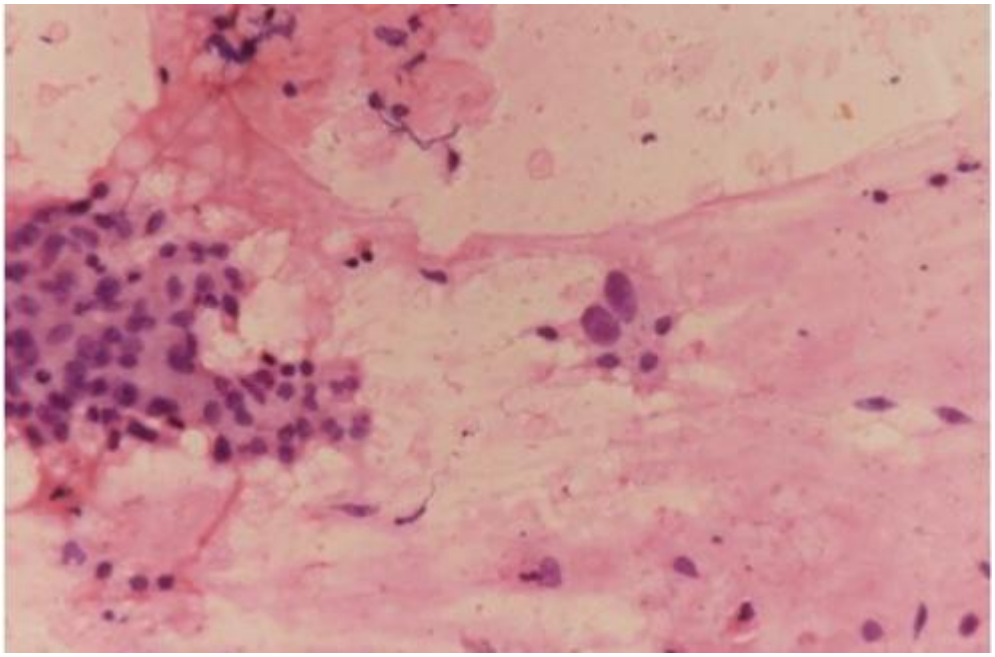
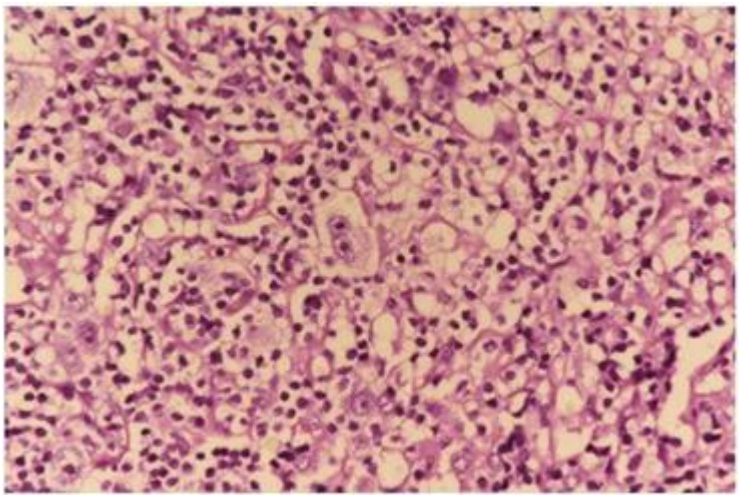
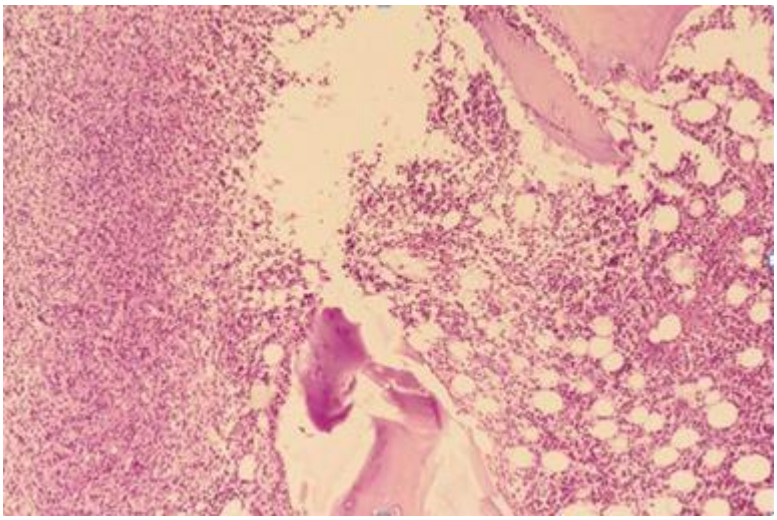
Figures



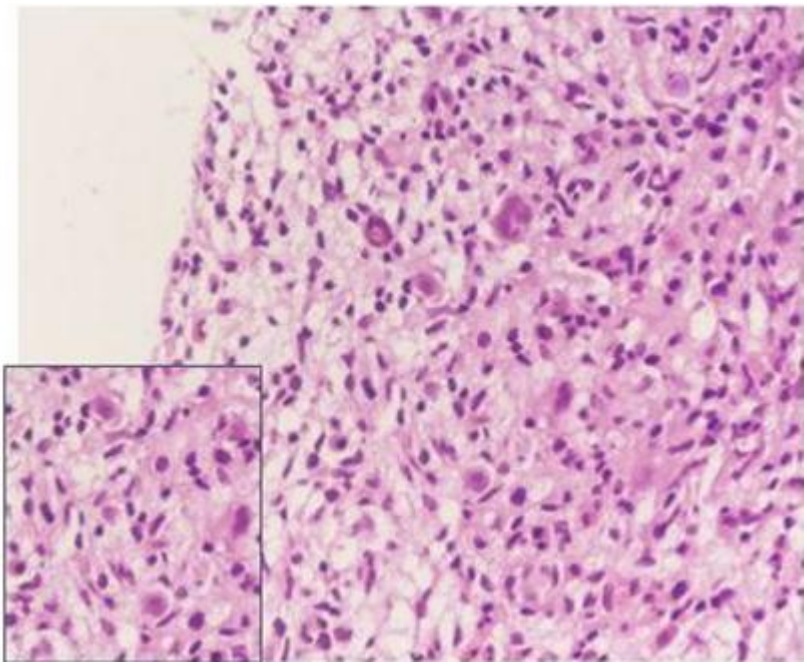
A. FNA smear from cervical lymph node shows presence of Reed Sternberg cells. H&E, (400X).



B. Lymph node biopsy show showed Reed Sternberg cells, mononuclear Hodgkin cells in the background of polymorphic population of lymphoid and few plasma cells. H&E, (400X)



C. Bone marrow biopsy shows normocellular to mildly hypocellular marrow spaces which showed infiltration by Hodgkin lymphoma. H&E, (200X)



D. Photomicrograph show infiltration by lacunar, mononuclear and Reed sternberg cells in a inflammatory background composed of eosinophils, histiocytes and occasional epithelioid cells. H&E, (400X).