



Original Article

Study of Hypercellular and Hypocellular smears in bone marrow aspiration at tertiary care centre M.Y. Hospital Indore

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Abstract

Background: Bone marrow aspiration is important investigation of haematological disorders not being clearly diagnosed on peripheral blood examination.

Objective: The present study was done to find out prevalence of etiological diagnosis in hypercellular and hypocellular bone marrow aspirates.

Material and Methods: The present study was conducted in the Department of Pathology, M.G.M. Medical College Indore, from January 2017 to February 2018. Total 38 cases were studied. The diagnosis in all the cases were made on Field stained and Leishman stained slides of bone marrow aspirates.

Results: Among the 38 cases, 26.3% shows Megaloblastic anemia, 7.9% shows Aplastic Anemia, 15.7% shows Hypoplastic Bone marrow, 2.6% shows Erythroid hyperplasia, 5.3% shows Immune Thrombocytopenic Purpura, 7.9% shows Myeloproliferative disorder, 5.3% shows Myelodysplastic syndrome, 5.3% shows Acute Lymphoblastic Leukemia, 13.2% shows Acute Myeloid Leukemia, 2.6% shows Chronic myeloid leukemia, 5.3% shows NHL spillage, 2.6% shows Metastatic deposits. Among all cases 20 were males and 18 were females.

Conclusion: Bone marrow aspiration is easy and cheap investigation in evaluation of haematological and non-haematological disorders of bone marrow. Majority of bone marrow aspirates were hypercellular, among which common finds were Megaloblastic anemia and acute leukemia.

Keywords: Bone marrow aspiration, Megaloblastic anemia, Acute leukemia.

Introduction

Examination of bone marrow aspirate is very useful and cheap diagnostic investigation in diagnosis of both haematological and non-haematological bone marrow disorder.^[1]

The underlying etiology varies from short-term marrow suppression to malignant disorders. The etiological diagnosis is important for the treatment and prognosis of the patient.^[2]

Material and Methods

This is a prospective study conducted in the department of Pathology at M.Y. Hospital, Indore from January 2017 to February 2018. Total 38 cases were studied. The relevant clinical history and physical examination findings were noted. The diagnosis in all the cases were made on Field stained and Leishman stained slides of bone marrow aspirates.

Results

The present study includes 38 bone marrow aspiration cases, among which 20 were males and 18 were females. Graph 1 shows gender wise distribution of cases.

Table 1 represents, out of 38 cases, 25 cases shows hypercellularity, 9 cases shows hypocellularity and 4 cases were normocellular.

Table 2 shows 26.3% were of Megaloblastic anemia, 7.9% of Aplastic Anemia, 15.7% of Hypoplastic Bone marrow, 2.6% of Erythroid hyperplasia, 5.3% of Immune Thrombocytopenic Purpura, 7.9% of Myeloproliferative disorder, 5.3% of Myelodysplastic syndrome, 5.3% of Acute Lymphoblastic Leukemia, 13.2% of Acute Myeloid Leukemia, 2.6% of Chronic myeloid

leukemia, 5.3% of NHL spillage and 2.6% of Metastatic deposits.

Graph 1: showing gender wise distribution

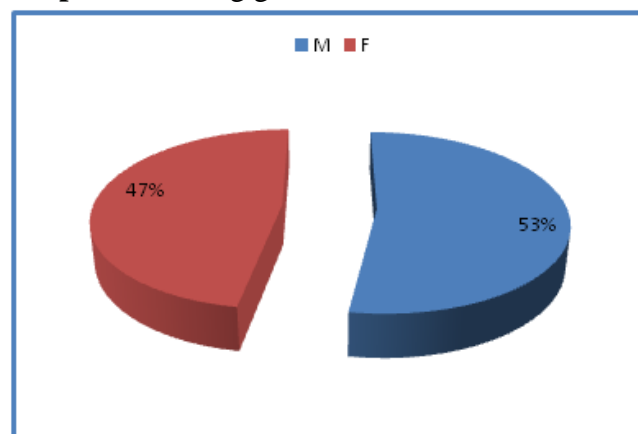


Table 1: showing Bone marrow smears cellularity

Smears Cellularity	No. of Cases	Percentage (%)
Hypercellular	25	65.8
Hypocellular	9	23.7
Normocellular	4	10.5
Total	38	100

Table 2: showing bone marrow aspiration findings

Diagnosis	No. of cases	Percentage (%)
Megaloblastic anemia	10	26.3
Aplastic Anemia	3	7.9
Hypoplastic Bone marrow	6	15.7
Erythroid hyperplasia	1	2.6
Immune Thrombocytopenic Purpura	2	5.3
Myeloproliferative disorder	3	7.9
Myelodysplastic syndrome	2	5.3
Acute Lymphoblastic Leukemia	2	5.3
Acute Myeloid Leukemia	5	13.2
Chronic myeloid leukemia	1	2.6
NHL spillage	2	5.3
Metastatic deposits	1	2.6
Total	38	100

Discussion

The common findings were Megaloblastic anemia and acute leukemia which is comparable to study by Manjit Kaur et al.^[6] Diagnosis of leukemias on bone marrow aspiration were 21.1%, this is comparable to the study by Damulak et al^[3] and Bashawri LA^[4]. Majority of Megaloblastic anemia cases were from 6th to 7th decade, owing to high prevalence of nutritional anemia in our country.^[5]

Conclusion

Bone marrow aspiration is easy and cheap investigation in evaluation of haematological and non-haematological disorders of bone marrow. Majority of bone marrow aspirates were hypercellular, among which common finds were Megaloblastic anemia and acute leukemia.

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Competing interest: None declared.

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