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Case Report

De Novo Pure Erythroleukemia (AML M6b): A Rare Variant of AML

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Abstract: Erythroleukemia is a rare form of acute myeloid leukemia (AML) characterized by clonal proliferation of erythroblasts and comprising approximately 3-5% of all acute myeloid leukemias. We report a unique case of pure erythroleukemia in a 19 year old young boy presented to our hospital which is a rare variant of AML.
Keywords: De Novo Pure Erythroleukemia (AML M6b), myeloid leukemias

INTRODUCTION

Erythroleukemia is a rare form of acute myeloid leukemia (AML) characterized by clonal proliferation of erythroblasts. Ever since its description almost a century ago it remains an elusive diagnosis, comprising approximately 3-5% of all acute myeloid leukemias [1].

CASE REPORT

We report a unique case of pure erythroleukemia in a 19 year old young boy who presented to us with complaints of loss of appetite, increasing fatigue and high grade fever since few months. No palpable neck nodes and hepatosplenomegaly.

Biochemical parameters were insignificant except for an elevated serum LDH and AST.

Hematological investigations showed a severe anaemia, leucocytosis and thrombocytopenia. Peripheral smear showed marked anisopoikilocytosis in form of normocytes, macrocytes, microcytes, microspherocytes, schistocytes, elliptocytes and polychromatophilic RBCs. Numerous nucleated red blood cells (40/100 wbc's) with many binucleated forms were also seen. WBC shows leucocytosis with relative monocytosis and immature myeloid precursors. Platelets were markedly reduced. Features suggested a leukoerythroblastic reaction or a myeloproliferative disorder.

Bone Marrow Aspirate analysis yielded hypercellular aspirates with increase in erythroid precursors comprising 82% erythroblasts and few megaloblasts. Dyserythropoetic changes were seen in less than 10% cells including nuclear cytoplasmic dyssynchrony, Howell Jolly bodies and irregular nuclear contours. Myeloid series showed both mature and immature precursors with myeloblasts 03%. Occasional megakaryocyte and few plasma cells seen. Bone marrow aspirate smears were suggestive of pure acute erythroleukemia.

Bone marrow biopsy revealed a hypercellular marrow with markedly increased erythroid precursors with small aggregates of erythroblasts showing vescicular nuclei with nucleoli and moderate cytoplasm. Myeloid series were decreased and show occasional mature forms. Megarkaryocytes were adequate. features were compatible with Acute Leukemia morphologically AML M6b. Flow cytometry revealed increase of Glycophorin A.

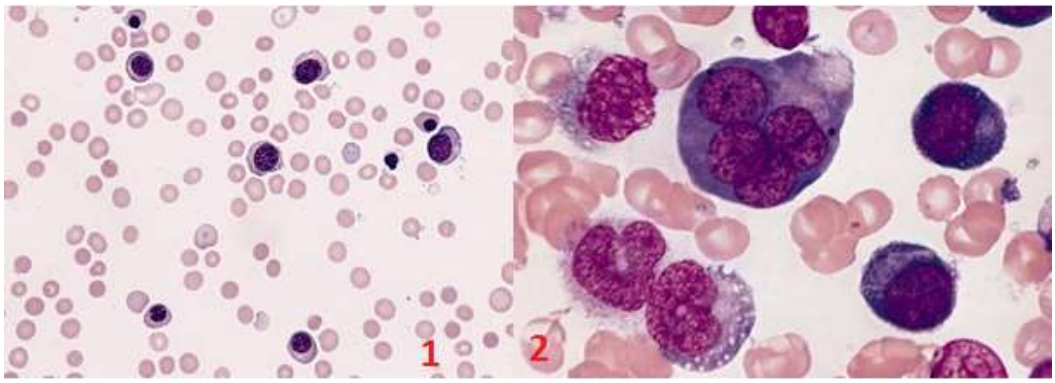

Fig-1&2: Photomicrographs of peripheral smear revealed pancytopenia with nucleated RBCs, immature granulocytes and occasional circulating erythroblasts. (H&E, 40X & 100X respectively)

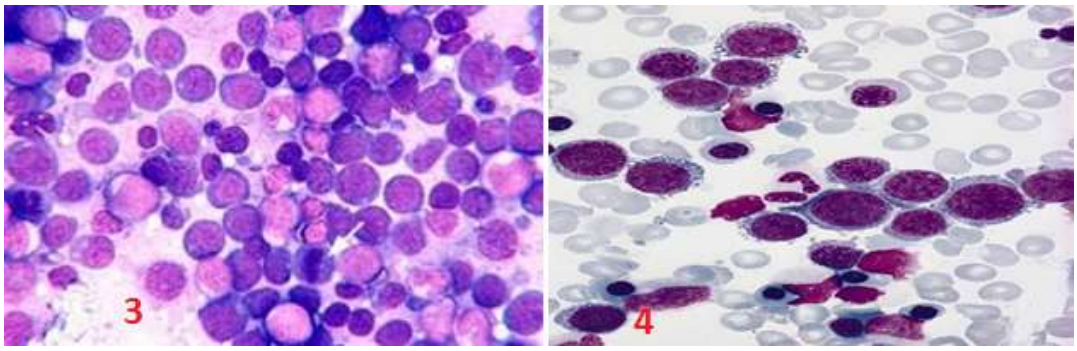

Fig-3&4: Photomicrographs of bone marrow aspirate revealed a markedly hypercellular marrow replaced by erythroid precursors representing 80-90 % of bone marrow cells.

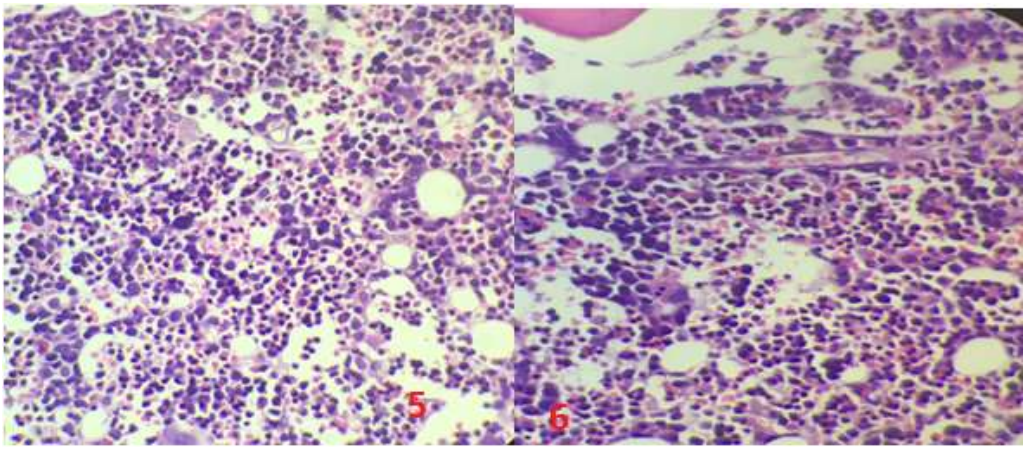

Fig-5&6: Photomicrographs of bone marrow biopsy revealed a hypercellular marrow with markedly increased erythroid precursors with small aggregates of erythroblasts and depressed myeloid series.

CONCLUSION

Erythroleukemia is a rare heterogenous hematopoietic neoplasm carrying a poor prognosis to standard chemotherapy. The WHO 2008 classification subdivides acute erythroleukemia into M6A erythroleukemia (erythroid/myeloid) and M6B pure erythroleukemia. Morphological diagnosis is often difficult due to its close resemblance to various other neoplastic and non-neoplastic hematological conditions. In our case there were no typical clinical features of AML-M6 like organomegaly and the diagnosis was purely based on bone marrow morphology.

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