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Leukemic conversion in case of Burkitt's lymphoma from non-endemic region

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Abstract

Burkitt's lymphoma is rare neoplasm which may be either be endemic involving mandible and maxilla or sporadic presenting with abdominal lump. The leukemic conversion of Burkitt's lymphoma without any tumour mass is considered to be unusual and that too in immunocompetent patient. The present case is therefore being reported due to its unusual presentation with absence of any abdominal or facial mass but with only bone marrow involvement in non-endemic region. The case also highlights an important feature of leukemic conversion of Burkitt's lymphoma in immunocompetent patient which is rarely reported in literature.

Introduction

Burkitt's lymphoma is rare neoplasm which may be either be endemic involving mandible and maxilla and associated with Epstein Barr virus or sporadic which is associated with EBV in only 10-20% of cases [1,2]. The leukemic conversion of Burkitt's lymphoma without any tumour mass is considered to be unusual and that too in immunocompetent patient [3,4]. The present case is therefore being reported due to its unusual presentation with absence of any abdominal or facial mass but with only bone marrow involvement in non-endemic region. The case also highlights an important feature of leukemic conversion of Burkitt's lymphoma in immunocompetent patient which is rarely reported in literature.

Case report

Twelve-year female presented with fever and her investigations revealed pancytopenia with hemoglobin 46 gm/L, total leukocyte counts 3.67x109/L and platelet count 16.2x109/L. Her differential count showed 30% large lymphoid cells with moderate cytoplasm, coarse chromatin and showing cytoplasmic and nuclear vacuolations (Figure 1). Her bone marrow aspirate and biopsy revealed complete effacement of marrow with blasts of same morphology (Figure 2 a,b). Peripheral blood on flowcytometry showed positivity for CD45 (bright), CD19, CD10, CD43and negativity for CD3, CD5, CD20, BCL-2, CD25 and kappa/lambda. Immunohistochemistry on bone marrow biopsy showed positivity of Ki-67 in more than 95% blasts (Figure 3). She was non- reactive for human immunodeficiency virus. In view of above findings, diagnosis of Burkitt's lymphoma with leukemic conversion was considered. However, no cytogenetic and molecular analysis was done due to patient's reluctance and financial constraints. The condition of patient deteriorated rapidly, and patient succumbed to her illness within a week.

Discussion

Burkitt's lymphoma is considered to be an aggressive neoplasm with high proliferative index and may lead to death if not treated early [5]. Although EBV is associated with endemic cases but AIDS related malignancies constitute 2.4-20% of Burkitt's lymphoma [6]. The tumour is endemic in African countries with involvement of mandible and maxilla while sporadic cases present with abdominal lump [7,8]. The Burkitt's lymphoma may rarely have leukemic presentation but

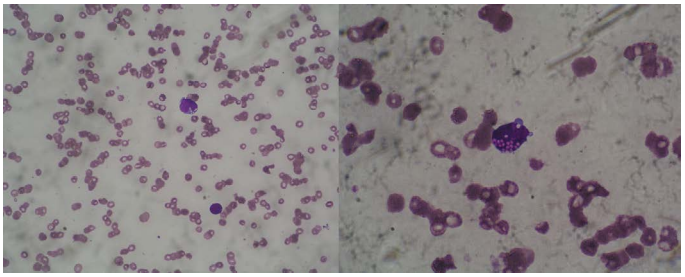

Figure 1. Moderate cytoplasm, coarse chromatin and showing cytoplasmic and nuclear vacuolations

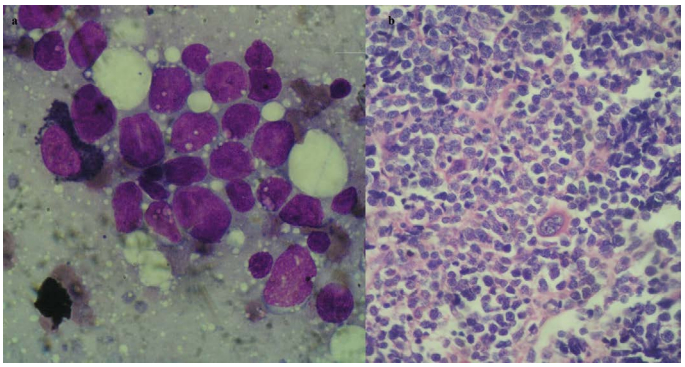

Figure 2. Bone marrow aspirate and biopsy revealed complete effacement of marrow with blasts of same morphology

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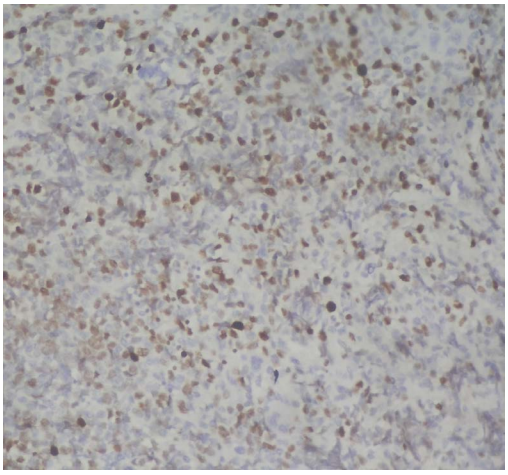

Figure 3. Immunohistochemistry on bone marrow biopsy showed positivity of Ki-67 in more than 95% blasts

these cases are usually associated with large tumour mass.[3] However this case presented with leukemic conversion in Burkitt's lymphoma with absence of any abdominal or facial mass but with only bone marrow involvement. Epeldegui et al have observed in their study that high expression of activation induced cytidine deaminase (AID) in peripheral blood mononuclear cells has been shown to precede the development of BL by up to 8 years in HIV-infected patients [9]. However, our patient was immunocompetent. The prognosis of Burkitt's cell leukemia has not been reported with current treatment modalities and it has been concluded that there is no further need for stem cell transplantation in Burkitt's cell leukemia [10]. The condition of the patient in our case deteriorated rapidly and patient succumbed to her illness within a week.

The present case thus highlights unusual presentation of Burkitt's lymphoma with absence of any abdominal or facial mass but with only bone marrow involvement in non-endemic region. The case also highlights an important feature of leukemic conversion of Burkitt's lymphoma in immunocompetent patient and with poor prognosis.

Financial support

None.

Conflicts of Interest

None.

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