



LEUKEMIC ARTHRITIS- AN UNUSUAL MANIFESTATION OF CHRONIC PHASE OF CHRONIC MYELOID LEUKEMIA

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<p>Article Info <i>Received 06/06/2015</i> <i>Revised 11/06/2015</i> <i>Accepted 20/06/2015</i></p> <p>Key words: Chronic myeloid leukemia, Chronic phase, Arthritis, Synovitis.</p>	<p>ABSTRACT Leukemic arthritis is an uncommon presentation of leukemia usually seen in the acute phase of leukemia. The treatment of the systemic disease is usually curative for the joint symptoms as well. We present an unusual case of chronic myelogenous leukemia presenting with leukemic arthritis in the chronic phase.</p>
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INTRODUCTION

Leukemic arthritis is a rare musculoskeletal manifestation affecting the large joints in acute leukemia or blast crisis of chronic leukemia [1, 2]. Analysis of the synovial fluid may aid in the diagnosis, however, histopathological biopsy of the synovial tissue is the gold standard [3]. We report a case of chronic myeloid leukemia presenting with leukemic arthritis.

CASE REPORT

A 49 year old male presented with progressively increasing pain and swelling of the right knee of 3 months duration. Local examination demonstrated features of effusion. Cytological examination of the synovial fluid aspirate showed a lymphocytic effusion with a differential count of 87% lymphocytes and 13% neutrophils. No myeloid precursors were identified. Microscopic examination of the synovial biopsy showed a hyperplastic synovium with dense infiltration by immature myeloid precursors (Figure 1). Immunohistochemical staining

showed positivity for CD117 and Myeloperoxidase (MPO) in the myeloid precursors confirming the diagnosis of leukemic infiltration (Figure 2). Routine haematological investigation revealed elevated erythrocyte sedimentation rate (50 mm/hour), reduced haemoglobin (11.8 gm/dl), elevated total leucocyte count (104,000/mm³) and normal platelet count (358000/mm³). The peripheral smear showed nucleated red blood cells and immature myeloid precursors. The leucocyte differential count was neutrophils - 40%, lymphocyte - 07%, eosinophils - 04%, basophils - 05%, bands - 20%, metamyelocytes - 05%, myelocytes - 12%, promyelocytes - 03% and blasts - 04%. Bone marrow biopsy confirmed the diagnosis of chronic myeloid leukemia in chronic phase. Bone marrow cells demonstrated Philadelphia chromosome with t(9:22). Ultrasonography of the abdomen showed hepatosplenomegaly. The patient was started on imatinib therapy and currently remains asymptomatic on follow up.



Fig 1. Photomicrograph showing infiltration of the synovium by myeloid precursors (H&E, X10) Inset (H&E, X40)

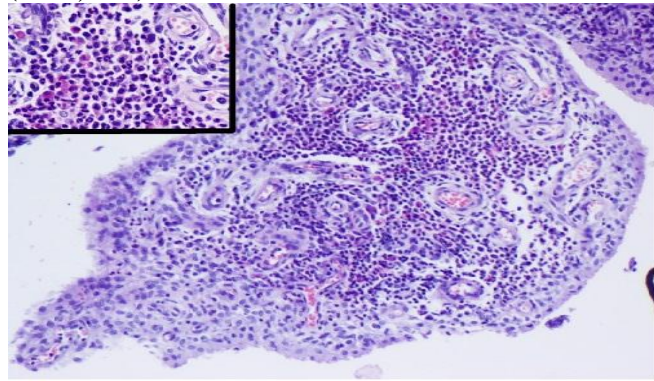
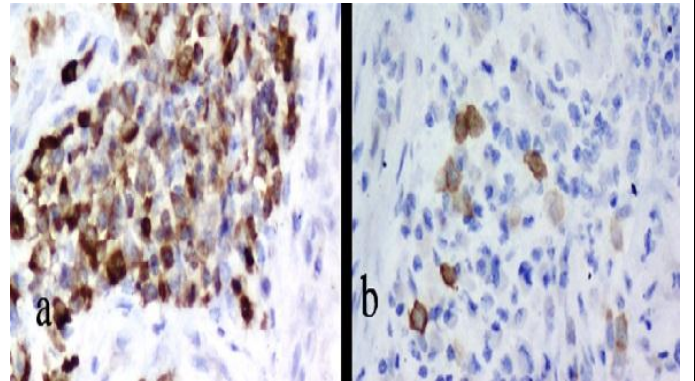


Fig 2. Positive immunostaining of myeloid precursors for a) MPO (40X) b) CD117 (40X)



DISCUSSION

The prevalence of leukemic arthritis is 4-13% and is a manifestation of acute and chronic leukemias of both lymphoid and myeloid origin. The pathogenesis of joint involvement in leukemia is hypothesized to be direct infiltration of the synovium by leukemic cells, articular haemorrhage, crystal induced inflammation or following therapy. The large joints are commonly affected in leukemic arthritis and manifest with severe pain as seen in the present case [4, 5].

Chronic myeloid leukemia (CML) is a myeloproliferative disorder characterized by the presence of BCR-ABL gene in the Philadelphia chromosome with 3 phases; namely chronic phase, accelerated phase and blast crisis [6]. Synovial infiltration is often seen in blast crisis and is rare in chronic phase. Monocytic or myelomonocytic differentiation has been reported to have higher rates of articular involvement. Demonstration of leukemic infiltration on synovial biopsy is diagnostic of leukemic arthritis. However, patchy or focal infiltration of leukemic cells and non representative sampling of synovial tissue may pose a diagnostic dilemma. Immuno phenotyping is useful in detecting these cases.[1,5,7]. The present case is unusual as the patient presented with joint

effusion in the chronic phase of CML which was the only presenting symptom. The synovial fluid cytology was negative, however, synovial tissue showed leukemic infiltration which was further confirmed by immunohistochemistry.

Radiological investigations like magnetic resonance imaging is useful in patients with leukemic synovitis to assess the extent of capsular or periarticular tissue destruction and bone marrow involvement by the disease process [8].

Chemotherapy for the treatment of leukemia is also curative for its articular manifestations. Adjunct radiotherapy may help in alleviating the pain associated with disease. [1, 9].

CONCLUSION

Leukemic synovitis or arthritis is usually seen in association with acute leukemias but may also be associated with chronic leukemias. It may be the first and only presenting feature and may be a sign of impending blast crisis in chronic leukemia, hence, a high degree of suspicion enables early diagnosis and prompt treatment of the systemic disease.

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