

**HYPERCALCEMIA AND OSTEOLYTIC LESION AS PRESENTING FEATURE IN AN  
ADULT PH POSITIVE ACUTE LYMPHOBLASTIC LEUKEMIA PATIENT MIMICKING  
MULTIPLE MYELOMA****<sup>1</sup>Dr. Geetha Narayanan \*, MD, DM, <sup>2</sup>Dr. Unnikrishnan P., MD, <sup>3</sup>Dr. Bhavya S. Kumar, MBBS**<sup>1</sup>Professor and Head, Department of Medical Oncology.<sup>2,3</sup>Senior Resident, Department of Medical Oncology.**\*Corresponding Author: Dr. Geetha Narayanan**

Professor and Head, Department of Medical Oncology.

Article Received on 03/01/2017

Article Revised on 24/01/2016

Article Accepted on 15/02/2017

**ABSTRACT**

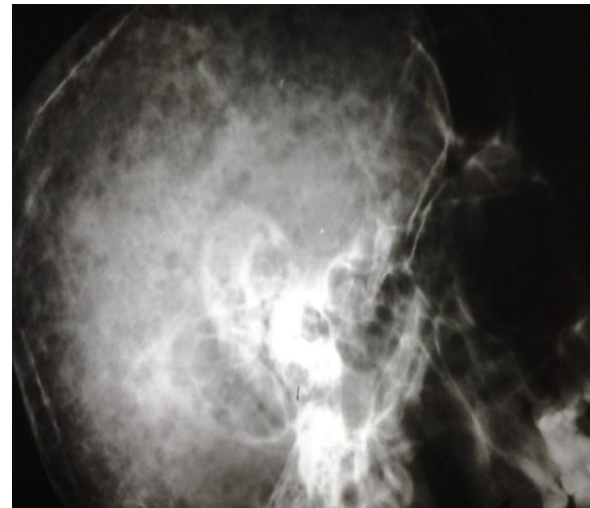
Hypercalcemia and multiple osteolytic lesions as presenting manifestations of acute lymphoblastic leukemia (ALL) in adults is very rare. We report the case of a 43 year old man with Ph positive B ALL who presented with hypercalcemia and multiple lytic lesion of the skull mimicking multiple myeloma. He was treated with HYPERCVAD chemotherapy. His hypercalcemia subsided and he achieved remission after induction.

**KEYWORDS:** B ALL, osteolytic lesion, hypercalcemia.**INTRODUCTION**

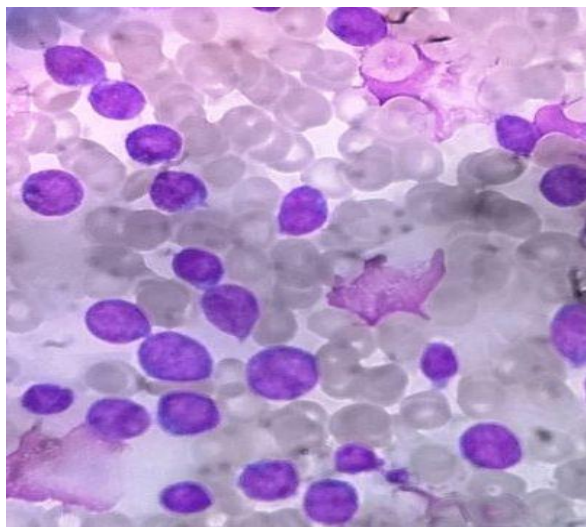
Skeletal manifestations associated with acute lymphoblastic leukemia (ALL) in children are common findings. The most common symptoms are bone pain, limp, arthritis and increased risk for fractures. However the same is rare as a presenting feature in adult ALL. We report this case of a middle aged man with pre B ALL presenting with hypercalcemia and skeletal lesions mimicking multiple myeloma.

**CASE REPORT**

A 43 yr old man presented with backache, loss of weight, headache and vomiting since 3 months. On examination he had pallor, but no lymphnodes or organomegaly. His haemoglobin was 8.5gm%, total white cell count was 6900/mm<sup>3</sup>, and platelet count was 106000/mm.<sup>3</sup> His renal and liver functions were normal, however, his serum calcium was 18.2mg/dl. A radiograph of the skull showed multiple lytic lesions mimicking a case of multiple myeloma (Figure 1).

**Figure 1: X ray skull lateral view showing multiple punched out lytic lesions mimicking multiple myeloma**

A bone marrow examination showed 78% blasts showing scanty cytoplasm, round to indented nuclei with immature chromatin which were peroxidase negative. (Figure 2) Flow cytometry showed the cells to be positive for CD10, CD19, CD13, CD33, CD34, CD35 and HLADR. A diagnosis of B lymphoblastic leukemia was made. Qualitative reverse transcriptase polymerase chain reaction test for bcrabl transcript was positive.



**Figure 2: Bone marrow smear showing lymphoblasts**

He was started on chemotherapy with HYPERCVAD and imatinib. His hypercalcemia subsided after a week and he achieved marrow remission after induction. He was started on maintenance chemotherapy with oral 6 mercaptopurine and methotrexate after 4 cycles each of A & B of HYPERCVAD. His bcrabl transcripts were undetectable. However, he relapsed after 2 years of continued remission and progressed.

#### DISCUSSION

Osteopathy is one of the common initial symptoms of acute lymphocytic leukemia in children and adolescents. There are reports of children with precursor or common B ALL presenting with hypercalcemia and osteolytic lesions.<sup>[1,2]</sup> However, hypercalcemia and osteolytic lesions are rare as presenting features of adult ALL.

An adult female patient with ALL who presented with paraparesis and multiple osteolytic lesions in skull initially giving false impression of multiple myeloma was reported.<sup>[3]</sup> A 35 yr old man presented with osteolytic mandible as an initial manifestation of ALL.<sup>[4]</sup> Severe hypercalcaemia and extensive osteolytic lesions has been described in a 24 year old man with T cell acute lymphoblastic leukaemia.<sup>[5]</sup> Maman et al reviewed the musculoskeletal manifestations in 240 children with ALL and reported an incidence of 31.4%, a predominance of B cell precursor ALL, a lower white blood cell counts and percentage of blast cells in the peripheral blood at diagnosis, and no effect on survival in these patients.<sup>[6]</sup>

The common radiographic findings reported in ALL include metaphyseal lucent band and erosion, periosteal reaction, small lucent bone lesion and permeative appearance, reduced bone density and collapsed vertebra.<sup>[7]</sup> More than 50% of children with leukemia had skeletal abnormalities due to widespread red bone marrow in childhood, however, this is less than 10% in adults.<sup>[8]</sup> In addition, bone involvement did not affect the prognosis in comparison to cases without bone

involvement.<sup>[7]</sup> These bony lesions sometimes precede other findings so familiarity with these presentations is very important for earlier diagnosis in adults also.

#### REFERENCES

- Peterson K, Higgins R, Peterson T, Messinger Y. Osteolytic Bone Lesions, Hypercalcemia, and Renal Failure: A Rare Presentation of Childhood Acute Lymphoblastic Leukemia. *American J of Cancer Case reports*, 2013; 1: 73-78.
- Kolyva S, Efthymiadou A, Gkentzi D, Karana-Ginopoulou A, Varvarigou A. Hypercalcemia and osteolytic lesions as presenting symptoms of acute lymphoblastic leukemia in childhood. The use of zoledronic acid and review of the literature. *J Pediatr Endocrinol Metab*, 2013; 10:1-6. doi: 10.1515/jpem-2013-0244.
- Verma SP, Dubashi B, Basu D, Dutta TK, Kar R. A Rare Case of Adult Acute Lymphoblastic Leukemia Presenting with Paraparesis and Multiple Osteolytic Lesions *Indian Journal of Hematology and Blood Transfusion*, 2013; 1-3. doi: 10.1007/s12288-012-0221-4, Jan 10, 2013.
- Chung SW, Kim S, Choi JR, Yoo TH, Cha IH. Osteolytic mandible presenting as an initial manifestation of an adult acute lymphoblastic leukaemia. *Int J Oral Maxillofac Surg*, 2011; 40(12): 1438-40. doi: 10.1016/j.ijom.2011.01.013.
- Antunovic P, Marisavljevic D, Kraguljac N, Jelusic V. Severe hypercalcaemia and extensive osteolytic lesions in an adult patient with T cell acute lymphoblastic leukaemia. *Medical oncology*, 1998; 15: 58-60.
- Maman E, Steinberg DM, Stark B et al. Acute lymphoblastic leukemia in children: correlation of musculoskeletal manifestations and immunophenotypes. *J Child Orthop*, 2007; 1(1): 63-8. doi: 10.1007/s11832-007-0013-9.
- Shahnazi M, Khatami A, Shamsian B, Haerizadeh B, mehrafarin M. Bony lesions in pediatric acute leukemia: pictorial essay. *Iran J Radiol*, 2012; 9(1): 50-6. doi: 10.5812/iranradiol.6765.
- Barbosa CM, Nakamura C, Terreri MT, Lee ML, Petrilli AS, Hilario MO. Musculoskeletal manifestations as the onset of acute leukemias in childhood. *J Pediatr*, 2002; 78(6): 481-4. doi: 10.1590/S0021-75572002000600007.