Acute Promyelocytic Leukaemia (APML) in an Adult Patient Presenting with Multiple Lytic Bony Lesions – The First of its Kind – A Case Report with Review of Literature

Rajeev Lakkavalli Krishnappa, Govinda Babu Kanakasetty, Suresh Babu Mallekavu Chikkadasappa, Suparna Ajit Rao*

INTRODUCTION

Acute promyelocytic leukaemia constitutes 10-15% of all adult acute myeloid leukemia with complete remission rates of 80-90% with ATRA based therapies. [1] Extragranulocytic disease in association with without medullary disease is usually seen at relapse with an incidence of 3-5%. The most common sites noted are the central nervous system followed by skin, bones and lymph nodes. [2] We here report a rare case of acute promyelocytic leukaemia in a young male who presented with multiple lytic bony lesions as the presenting extramedullary site.

CASE HISTORY

A 36 year old male patient with no comorbidities presented with localized lower backache for a duration of 1 month in January 2016 to a local hospital. There were no associated neurological deficits. He had no complaints of fever, easy fatigability, bleeding or headache. His haemogram done initially revealed a Hb- 14.5 g/dl, WBC – 13,100/cumm and platelet count of 2.29 lakhs with a normal differential count and his peripheral smear showed no abnormal cells. He had no fever, dyspnoea, or development of pleural/pericardial effusions. He attained complete hematological remission 35 days after initiation of treatment. His bone marrow aspiration/biopsy done post induction revealed complete morphological remission. PML-RARα was negative, and the bone imaging done by PET-CT reveals interval resolution of presacral soft tissue stranding with stable osteolysis in the sacrum and iliac bones (Figure 2).

DISCUSSION

Bony lesions in haematological malignancies are rare, but well known. They are most commonly seen in multiple myeloma, also in acute lymphoblastic leukemia, non-Hodgkin’s lymphoma, Waldenstrom’s disease, hairy - cell leukemia, myelodysplastic disorders, chronic lymphocytic leukemia, adult T cell lymphoma/leukaemia, chronic phase and blast crisis of chronic myeloid leukemia. [6] Bony...

**Figure 1:** Pretreatment FDG-PET/CT imaging suggestive of vertebral lesion.

**Figure 2:** FDG-PET/CT imaging done post induction- with reduction in uptake in the vertebra.
sions, although unusual in acute myeloid leukaemia (AML), have been documented in case reports. The pathogenesis of bone destruction in leukaemia remains poorly defined. Abnormal production of parathyroid hormone by malignant cells has been demonstrated. The radiological findings described in leukemias include metaphyseal lucent bands, bone erosions, periosteal reactions, lytic bone lesions, reduced bone density, permeative destruction and vertebral collapse. Due to widespread red bone marrow in childhood, more than 50% of children with leukaemia reveal skeletal abnormalities; however, this is seen in less than 10% adults. Bone pain in acute leukaemia is due to proliferation of bone marrow, pressure effect, compression fractures and osteoporosis.

The involvement of bone has been reported in few case reports in AML, whose patients presented with multiple lytic bony lesions and medullary disease. have reported promyelocytic sarcoma of the ulna. The above reports are in the paediatric age group. There are few reports in literature for adult patients who had APL and who presented with single bone lesions.

Ours is probably the first case in an adult of promyelocytic leukaemia with multiple bony lytic lesions at presentation. The outcomes of those with bony lesions with concomitant medullary involvement has been noted not to affect survival outcomes in these patients of AML; however these are seen to be associated with higher initial WBC count, CNS infiltration, and chance of later relapse, which are associated with poor prognosis. Our patient’s disease behaved clinically like a low/intermediate risk APL with a rather non stormy course during treatment. There were no complications associated with a rising total count such as acute respiratory distress syndrome or coagulopathy as seen in high risk group APL, which are seen to be fatal in our set up. Whether the presence of concomitant presence of extramedullary disease will be prognostic for overall survival in APL will have to be followed up and studied. This being a very infrequent presentation in APL, drawing any conclusions regarding behaviour of disease, treatment response and outcomes would remain difficult.

CONCLUSION

The main learning points in this case would be that multiple lytic lesions in a young patient should always prompt a thorough evaluation to rule out the presence of a haematological malignancy. Prompt evaluation and diagnosis will be lifesaving before development of complications, which occurs due to lack of consideration of haematological malignancies in the differential diagnosis in young patients presenting with multiple bony lytic lesions.

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CONFLICT OF INTEREST

None

ABBREVIATIONS USED

APML: Acute promyelocytic leukaemia; AML: Acute myeloid leukaemia; ATRA: All-trans retinoic acid; PML: Promyelocytic leukaemia; RARα: Retinoic acid receptor-α.

REFERENCES
