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Case Report

A rare case of young multiple myeloma

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ABSTRACT

Multiple myeloma arises from a clonal population of plasma cells. It accounts for approximately 10% of all hematologic malignancies. It is a disease of the elderly and extremely rare in those under 50 years of age. Multiple myeloma is a malignancy of immune cells. The immune cells involved in tumorigenesis are especially plasma cells. The presentation may vary drastically in patients with this disease. The disease presentation ranges from an asymptomatic variant called Monoclonal gammopathy of unknown significance to a severe form of full-fledged multiple myeloma with systemic manifestations. The disease usually affects people aged more than 50. Here, we report a 40-year-old male who presented with anemia, and on further workup, he was diagnosed with multiple myeloma.

Keywords: Multiple myeloma, Young, Plasma cells

INTRODUCTION

Multiple myeloma arises from a clonal population of plasma cells.[1] It accounts for approximately 10% of all hematologic malignancies. The prevalence in India is about 1%.[2] It is a disease of the elderly and extremely rare in those under 50 years of age. Multiple myeloma is a malignancy of immune cells. The immune cells involved in tumorigenesis are especially plasma cells. They might be either monoclonal or polyclonal, and sometimes both co-exist. Multiple myeloma as a disease entity has been identified long back. But the treatment options are much more limited. The presentation may vary drastically in patients with this disease. The disease presentation ranges from an asymptomatic variant called Monoclonal gammopathy of unknown significance (MGUS) to a severe form of full-fledged multiple myeloma with systemic manifestations. There is another variant with milder manifestations called smoldering myeloma. Sometimes, multiple myeloma can present with a different manifestation as a single solitary mass called plasmacytoma. All the manifestations mentioned above can be seen in patients. But the disease usually affects people aged more than 50. Here, we report a 40-year-old male who presented with anemia, and on further workup, he was diagnosed with multiple myeloma.

CASE REPORT

A 42-year-old male farmer by profession with no comorbidities was admitted with complaints of high-grade fever for five days. He also had a history of easy fatigability and lower back ache.

On examination, the patient was conscious, oriented, and febrile, with a temperature of 100°F. He was pale. Vitals-heart rate of 78/min, respiratory rate of 22/min, and blood pressure were 110/70 mmhg on the right upper limb. Saturation 100% at room air.

Systemic examinations were normal. Routine blood investigations showed Hb-4.0 g/dL. Total leucocyte count-7840 cells/mm^3, platelet- 66,000/mm^3, ESR- 120 mm/h, CRP- 5.0 mg/dl, urea-87 mg/dl, creatinine- 7.0 mg/dl, albumin- 3.4 g/dl, uric acid-15.1, calcium- 11.6 mg/dl, phosphorous- 5.3 mg/dl. Urine routine showed proteinuria, urine Bence jones protein- negative. A peripheral smear showed normocytic normochromic anemia and thrombocytopenia.

Bone marrow biopsy showed plasmacytosis with abundant plasma cells (66%) ranging from binucleated to immature.

Serum electrophoresis revealed albumin-2.81 g/dl (normal- 4.02-4.76) and beta 2 microglobulin-4.6 g/dl. M-Band 51.6% detected. PRBC transfusion was given. We started the patient on Induction therapy with thalidomide and dexamethasone.

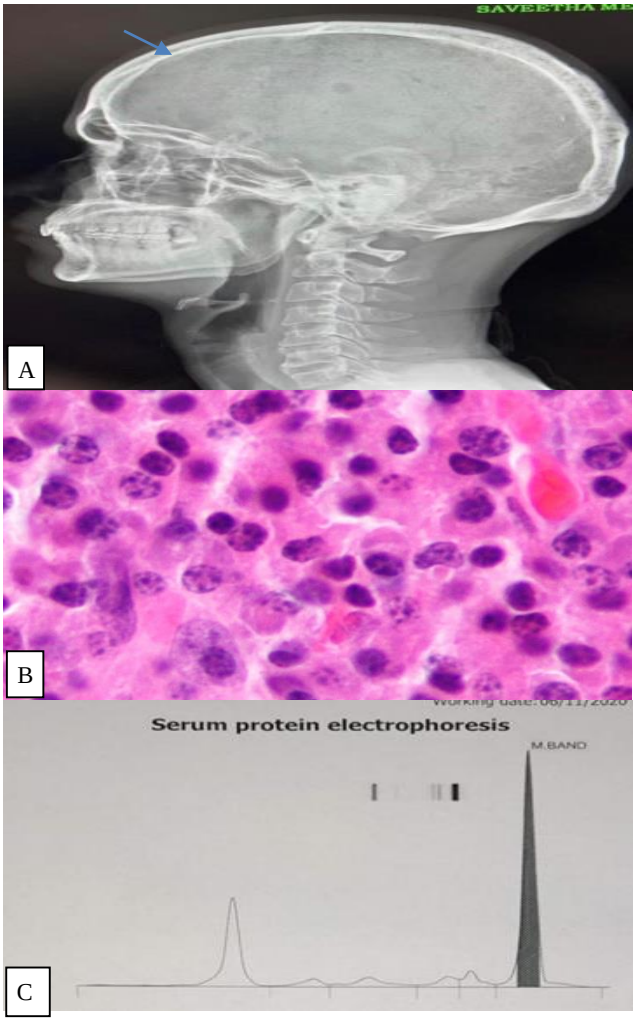

Figure 1 (A-C): X-ray skull showing multiple punched-out lesions representing osteolytic activity. Image2-characteristic plasma cell (round or oval cells with an eccentric nucleus composed of coarsely clumped chromatin, dense basophilic cytoplasm). Serum electrophoresis shows M-band highly suggestive of multiple myeloma.

DISCUSSION

Serum beta 2 microglobulin and albumin levels forms the international staging system (ISS) to predict survival, also CRAB-hypercalcemia, renal impairment, anaemia, bone lesions which is used to identify the disease progression. Multiple myeloma is characterized by hypogammaglobulinemia and proliferation of plasma cells leading to recurrent infections. Symptomatic myeloma is associated with anemia, hyper-viscosity symptoms, renal failure, coagulation problems, and hypercalcemia.[1] The disease per se is seen commonly in the elderly, and presentation below 50 years is quite rare. Multiple myeloma has various manifestations ranging from an asymptomatic variant called monoclonal gammopathy of unknown significance (MGUS). MGUS is followed by a less severe entity called smoldering myeloma. Per the diagnostic criteria, this is a case of multiple myeloma, the most severe entity of all three.

Here serum beta-2-microglobulin is the most important predictor of survival and staging.[3] Other manifestations such as non-secretory myeloma, solitary plasmacytoma, POEMS syndrome.

In young patients, the prevalence of multiple myeloma is rare, which accounts for 2% of the total myeloma patients. Some very young patients, mainly those younger than 30, might present with multiple skeletal lesions. Extramedullary spread is also a common manifestation. Plasma cell abundance is the histopathological hallmark of multiple myeloma in bone marrow biopsy. In young patients with multiple myeloma, there is a lack of plasma cells in bone marrow biopsy specimens.[4] The light chain variant predominates. Young patients with MM might benefit from early high-dose therapy followed by autologous or allogeneic stem cell rescue. Multiple myeloma manifests as anemia, bone pain, hypercalcemia, and a high erythrocyte sedimentation rate. Sometimes patients can be asymptomatic.[5] The treatment choice is the novel agents (Bortezomib) and hematopoietic stem cell transplantation (SCT) in younger patients. Novel agents, especially bortezomib, have shown good survival benefits.[6] Bortezomib got its approval for the treatment of Multiple myeloma in 2008. Previously it was only used in cases of refractory myeloma. It acts by inhibiting the pro-apoptotic factors in plasma cells that help in the persistence of myeloma cells.[7]

CONCLUSION

In this scenario, we throw light on an atypical presentation of a rare disease and an efficient way to manage it. The rare incidence of this disease should remain in the back of physicians' minds. Knowledge regarding this rare entity becomes essential to aid in apt diagnostics and optimal therapy. Diagnosing and treating this can be challenging and it is very important to find best initial treatment regimen for them.

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