

Case Report

Multiple myeloma in 33 years old male patient - A case report

Mihir Sharma^{1*}, Shreya Shah¹, Nisarg Champaneria¹, Sapan Goswami²

¹PG Resident, ²Professor

Department of Pathology, SBKS MI & RC, Sumandeep Vidyapeeth, Vadodara, Gujarat, India

*Corresponding author email: smihir34@gmail.com

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Abstract

Multiple myeloma is a condition of malignant plasma cell proliferation derived from a single B-cell lineage. These cells produce monoclonal immunoglobulins, most commonly either immunoglobulin G (IgG) or immunoglobulin A (IgA). The peak incidence of MM is in the seventh decade, whereas, it is a rare entity in young patients. Here we are presenting a case report of 33 years old male patient with diagnosis of Multiple myeloma WHERE are able to find and document the classical features of Multiple myeloma. Increased level of β_2 microglobulin, serum creatinine, IL-6, IL-2 and plasmablastic type myeloma cells suggest poor prognosis of mm patients.

Key words

Multiple myeloma, Plasma cell, Immunoglobulin G, β_2 microglobulin.

Introduction

Plasma cell tumors are B-cell lymphoid neoplasms classified as multiple myeloma, solitary bone plasmacytoma and extramedullary plasmacytoma [1, 2]. Multiple myeloma presents in the disseminated form, affecting several bones. Mostly, it is characterized by the multicentric proliferation of plasma cells in the bone marrow. It develops mainly in men aged 50 to 80 years, with a mean of 60 years [3]. Here,

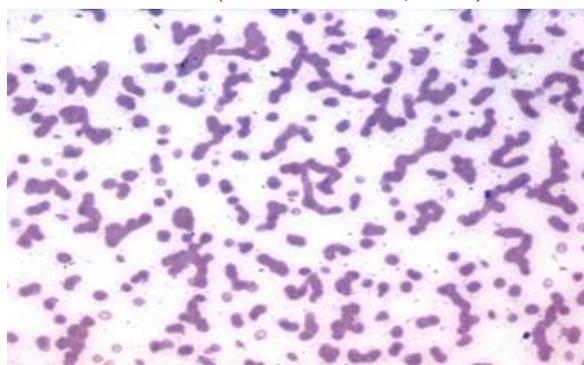
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Case report

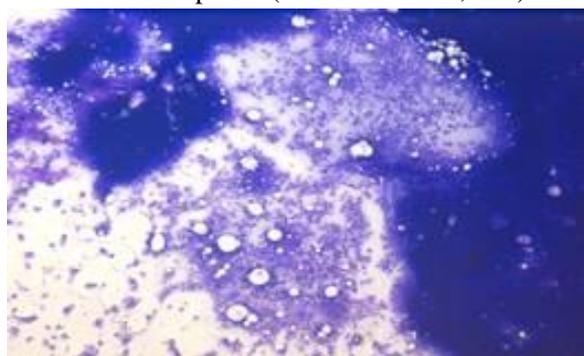
A 33 year old male patient came to OPD with chief complain of pain in the lower extremities since 2 months. He had also complaint of dull backache since last 4 months. The

haematological investigations revealed anemia (Hb - 5.7 gm/dl) and total WBC count was 18,000/cmm. On peripheral smear examination rouleaux formation of RBCs were revealed (**Photo - 1**). On Urine routine and microscopic examination Bence jones proteinuria was revealed. X-ray of the pelvic bone showed multiple lytic lesions. Serum biochemical examination revealed deranged RFT with serum creatinine 2.2 mg%, urea 91 mg% and uric acid 7.40 mg/dl. On serum protein electrophoresis presence of Beta -2 peak was noted with total protein 3.6/dl. On serum immunofixation electrophoresis Ig G kappa monoclonal protein peak was revealed. Bone marrow examination aspiration was advised by the clinicians and Bone marrow aspiration was performed. There was hyper cellular marrow with plasmacytosis (**Photo - 2, 3, 4**). The total percentage of the plasma cells were >30%. These findings together with protein electrophoresis and radiographic images confirmed the diagnosis of Multiple myeloma.

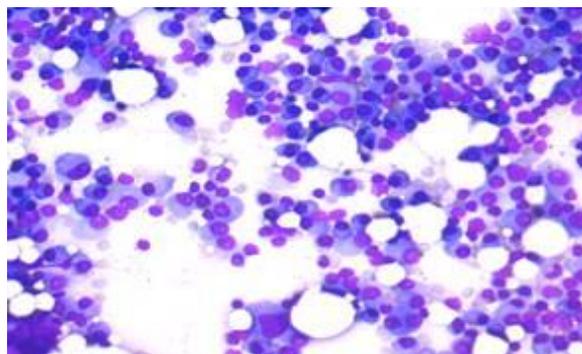
Photograph - 1: Peripheral blood smear showed rouleaux formation (Leishman stain, 40 X).



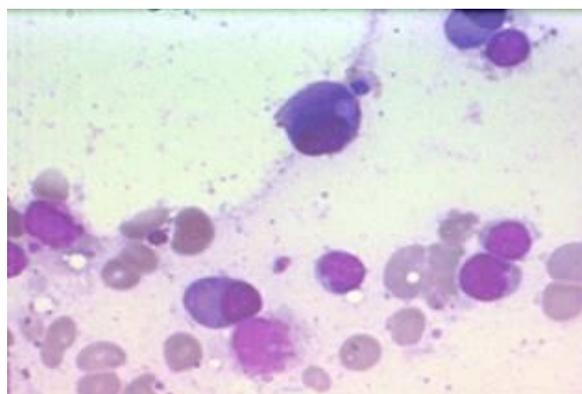
Photograph - 2: showed hypercellularity in bone marrow aspirate (Leishman stain, 4 X).



Photograph - 3: showed >30% of plasma cells in bone marrow aspirate (Leishman stain, 20 X).



Photograph - 4: showed plasma cells with eccentric nucleus and perinuclear hoff in bone marrow aspirate (Leishman stain, 40 X).



Discussion

Multiple myeloma is a condition of malignant plasma cell proliferation derived from a single B-cell lineage [4, 5]. These cells produce monoclonal immunoglobulins, most commonly either immunoglobulin G (IgG) or immunoglobulin A (IgA) [6]. As a gammopathy, multiple myeloma generally presents with recurrent infections secondary to humoral immune deficiencies, or with bone pain as a result of osteolytic lesions. Our patient also presented with pain in the lower extremities because of multiple lytic lesions in the pelvic bone. Other common presentations include systemic sequelae such as renal insufficiency due to light chain deposition, anemia, fatigue, and hypercalcemia [4-7]. At the time of diagnosis our patient also had deranged renal function tests (RFT).

The peak incidence of MM is in the seventh decade, whereas, it is a rare entity in young patients, with less than 2% cases occurring in patients under the age of 40 years and it is still rarer in patients who are younger than 30 years [8]. Here in our case report the patients age is 33 years and we were able to find all the classical features of MM.

Haematological analysis in MM patients reveals rouleaux formation because of increased globulins and this is the only reason for high ESR in these patients. Total leukocyte count is within normal limit. Serum β_2 microglobulin level is increased in MM and higher levels are also associated with poor prognosis. On bone marrow examination hypercellularity is noted which is because of increased no. of plasma cells. More than 30% of the cells myeloma cells are diagnostic which includes plasmablast, mature plasma cells and intermediate differentiated cells. The cells are large having round, eccentric nuclei with fine granular chromatin and evident nucleolus, characteristics of a solid malignant hematopoietic neoplasm.

The most frequent radiographic characteristics in MM are osteolytic lesions with a "soap bubble" appearance [1, 9], as can be observed in many cases. Immunoelectrophoresis and immunofixation studies need to be carried out to demonstrate M band of Ig G/D/A/E. Ig G being the commonest in 60% of the cases.

The median duration of survival of patients with MM ranges between 2 - 3 years. In the study from Mayo clinic, the median duration of survival of the patients was 87 months. The survival of the younger patients was considerably longer than that of patients of all ages with MM [10]. These results support the beneficial effect of a very young age on survival in patient with myeloma. Though increased level of β_2 microglobulin, serum creatinine, IL-6, IL-2 and plasmablastic type myeloma cells suggest poor prognosis.

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