



Multiple Myeloma in a 65 Year Old Female from Kolkata, India - A Case Report

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Abstract

Here we are presenting a case report of 65 year old female patient with diagnosis of Multiple myeloma. The patient presented with symptoms of musculoskeletal pain, recurrent chest infections & generalized weakness. Biochemical investigations revealed normocytic anemia, hyperglobulinemia, raised ESR, very high erythropoietin level. On Bone marrow examination diagnosis of multiple myeloma was obtained.

Keywords: Multiple myeloma; β_2 microglobulin; Plasma cell dyscrasia

Introduction

Multiple myeloma is a condition of malignant plasma cell proliferation derived from a single B-cell lineage. These cells produce monoclonal immune globulins, most commonly Immunoglobulin G (IgG) or Immunoglobulin A (IgA). The tumor & its products & host response ultimately lead to a variety of symptoms like anemia, bone pain, increased incidence of fracture, hyper calcemia, renal failure & increased susceptibility to infections [1]. The peak incidence of Multiple myeloma is in the seventh decade of life.

Case Presentation

A 65 yr old female patient presented to the OPD with complains of musculoskeletal pain (mainly in both legs), recurrent respiratory infections since 3 months. She also reported history of generalized weakness, recurrent episodes of fever & weight loss for the same duration. The patient was advised routine hematological & biochemical investigations along with analgesics & antibiotics for the same. Her condition got worsened & ultimately she had to be admitted in a hospital.

On examination she showed following findings. Heart rate: 84/min, BP: 130/80 mmHg, Chest: Bilateral rhonchi. Abdomen: Soft, non-tender, CVS: Normal findings. Patient showed severe pallor, no jaundice, no cyanosis, no clubbing.

Laboratory Findings

Hb: 5.6 gm%, TLC: 4500, Neutrophil: 63%, Lymphocyte: 32%, ESR: 105, RBC Count: 1.7 million/cmm, MCV: 97.5, MCH: 33.4, MCHC: 34.4. Serum iron & total iron binding capacity was normal.

Serum Erythropoietin level was very high (590 mIU/ml).

Serum urea, creatinine level was normal. Serum lipid profile was also within normal limit.

Liver Function Test: Total Bilirubin: 0.6 mg/dl, Direct Bilirubin: 0.4 mg/dl, AST: 30 IU/L, ALT: 13IU/L, Serum protein: 9.3 gm/dl, Albumin: 2.8 gm/dl, Globulin: 6.5 gm/dl ECG, stool examination was within normal limit. Direct Coomb's test was negative.

Urine examination revealed significant proteinuria (3+). Test for Bence Jones protein was positive.

Hb HPLC was performed which was within normal limit.

USG Doppler was done for lower limb veins, which revealed pulsatile venous flow in both lower limbs, no evidence of deep vein thrombosis.

A differential diagnosis of multiple myeloma was obtained & to confirm it bone marrow biopsy was performed which revealed plasma cell dyscrasia consistent with multiple myeloma (Figure 1 and 2).

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Sample Id. No. : 53/20H24/477 Dept. : HAE-120 Collection Date,Time:24/08/20,17:03
 Patient Name : Ms. Bithika Giri Receive Date,Time :24/08/20,17:18
 Age : 64years , Sex : Female Report Date,Time :29/08/20,10:13
 Address : 24B BACHAR PARA ROAD 2 NO THAKUR PUKUR, 700063, Kolkata
 Referred by : Dr. Aniruddha Bhattacharyya

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REPORT ON HISTOLOGY

BMH-26/20

SPECIMEN:
Bonemarrow trephine biopsy.

GROSS:
Specimen consists of 2 linear bony tissue bits, all embedded.

MICRO:
Sections show bony trabeculae enclosing hypercellular marrow spaces. Erythropoiesis is predominantly normoblastic. Myeloid cells comprise mostly of mature neutrophils. There is partly diffuse and partly interstitial infiltration by plasma cells. Some of the plasma cells show intranuclear inclusions (Dutcher bodies). Megakaryocytes appear reduced in number. Reticulin 1+ - 2+.

COMMENTS:
Plasma cell dyscrasia consistent with multiple myeloma.

Advice: Please correlate with serum protein electrophoresis, immunofixation electrophoresis, serum free light chain assay, hematologic, biochemical and radiologic findings.

↓* Slide provided

Figure 1: Report of histology.

REPORT ON BONE MARROW

BM- 28/20

Site of aspiration	Posterior superior iliac spine		
Cellularity	Aspirate was a dry tap. However imprint smears are cellular and show hypercellular particles.	Myeloid : Erythroid	4.6 : 1
Erythropoiesis	Predominantly normoblastic with mild megaloblastic changes.		
Myelopoiesis	Myeloid cells show maturation upto neutrophils stage.		
Megakaryocytopoiesis	Megakaryocytes seen.		
Lymphocytes	Mature.		
Others	No granulomas seen. No abnormal non-hematopoietic cells seen.		
DIFFERENTIAL COUNT	UNIT	Morphology of Plasma cells: Mostly mature. Few plasmablasts seen.	
BLAST	02 %		
PROMYELOCYTE	01 %	Peris' stain: Stainable iron store is reduced (0)	
MYELOCYTE	08 %		
METAMYELOCYTE	01 %	Hemoparasite: N/F	
NEUTROPHIL	20 %	Cytochemistry	
LYMPHOCYTE	12 %	MPO -	
MONOCYTE	01 %		
EOSINOPHIL	01 %	Sudan Black: -	
BASOPHIL	00 %		
PLASMA CELL	47 %	PAS -	
NRBC	07 %		

Comments: Plasma cell dyscrasia consistent with multiple myeloma.
 Advice: Please correlate with serum protein electrophoresis, immunofixation electrophoresis, serum free light chain assay, hematologic, biochemical and radiologic findings.

2.* Slides provided

Figure 2: Figure of bone marrow.

Discussion

Multiple Myeloma is characterized by a malignant proliferation of plasma cells derived from a single clone [1] that causes a marked hypogammaglobulinemia; which is the main reason for the development of severe infections in immune competent patients.

The cause of myeloma is not known exactly. A variety of chromosomal translocations have been found in patients with myeloma like hyperdiploidy, 13q14 deletions, translocations t(11;14) (q13;q32), t(4;14), (p16;q32), t(14;16) & 17p13 deletions. However no common molecular pathogenetic pathway has emerged.

The peak incidence is in seventh decade of life, rarely seen in younger population [2,3]. In our case patient is 65 yr old showing classical symptoms of multiple myeloma.

Severe episodes of infections are commonly seen in multiple myeloma cases & described as the leading cause of death in such patients. These cases are most often associated with bacterial infections of the lung and the urinary tract. Nonetheless, there are also reports of viral and fungal infections [4].

Bone pain is the most common symptom, affecting nearly 70% patients. Second most common symptom is increased susceptibility to bacterial infections followed by normocytic normochromic anemia. Neurologic symptoms occur in only a minority of cases,

though hypercalcemia can produce lethargy, weakness, confusion. Hyper viscosity symptoms can lead to fatigue, palpitation, and shortness of breath mimicking or exacerbating heart failure. Though plasma cells infiltrate most parts of body, tumor expansion is mostly limited to bone marrow, rarely causing hepatosplenomegaly or lymphadenopathy [1].

Diagnosis of multiple myeloma requires marrow plasma cytoma, serum or urine M component & end organ damage. Complete blood count may reveal anemia, raised ESR, and raised level of urea, creatinine, uric acid & calcium. Immunoglobulin electrophoresis can be done for identification of M components. 24 h urine examination may reveal proteinuria, mainly comprising Bence Jones Protein.

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