ORIGINAL RESEARCH PAPER
Volume - 10 | Issue - 08 | August - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CASE REPORT OF MULTIPLE MYELOMA

General Medicine

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ABSTRACT

Multiple myeloma represents a malignant proliferation of plasma cells derived from a single clone. The tumor ,its products ,and the host response to it results in a number of organ dysfunctions and symptoms ,including bone pain or fracture, renal failure, susceptibility to infection, anaemia , hypercalcemia and occasionally clotting abnormalities ,neurologic symptoms and manifestations of hyperviscosity. Here , we present a case of 73 year old female presented with multiple bone pain & generalised weakness who was eventually diagnosed with multiple myeloma.

KEYWORDS

CASE REPORT

A 73 year old female presented with a history of generalised musculoskeletal pain & generalised weakness for 6 months that had gradually increased. She had been treated with oral and intramuscular analgesics but no clinical improvement was seen. She is a known case of hypertension with no other significant medical past history. On hematological investigations she was found to be having normochromic normocytic anaemia and altered renal function test and hypercalcemia. Her detailed laboratory evaluation is as described below which lead to her diagnosis of multiple myeloma.

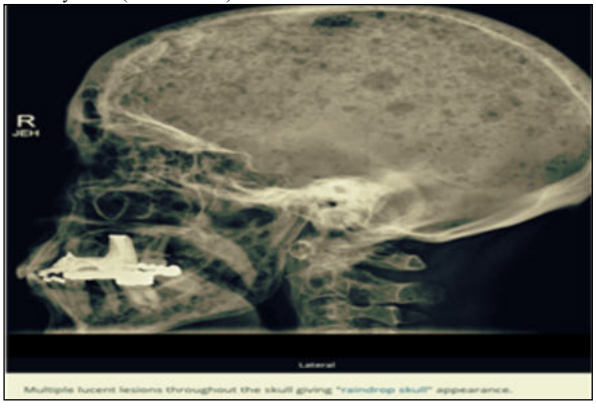
Complete blood count		Serum Biochemistry	
Hb	6.9 gm/dl	creatinine	2.1 mg/dl
Total count	6300/cumm	Urea	61 mg/dl
Platelets	1.81 lacs/microL	total bilirubin	0.4 mg/dl
MCV	86 fl	SGPT	10 U/L
HCT	43%	ALP	100 U/L
		SGOT	30 U/L
		sodium	135 meq/L
		pottasium	4.1 meq/L
		calcium	14.0 mg/dL
		albumin	3.65 gm/dl
		globulin	5.6 gm/dl

Serum protein electrophoresis	
Protein	9.20 H(6.40-8.30) gm/dl
Albumin	3.63 (3.97-4.95) gm/dl
globulin	5.6 H(2.3-3.5) gm/dl
A/G ratio	0.6 L(1.3-1.7) gm/dl
alpha-1globulin	0.34(0.21-0.25) gm/dl
alpha-2globulin	0.73(0.51-0.85) gm/dl
beta-1globulin	0.39(0.34-0.52) gm/dl
beta-2globulin	0.29(0.23-0.47) gm/dl
gamma globulin	3.82 H(0.80-1.35) gm/dl

Nephelometry	
Ig A	22.9 (0.7-4) gm/l
Ig G	4.89 (5.49-15.84) gm/l
Ig M	0.198 (0.4-2.3) gm/l
beta 2 microglobulin	10378 (0-2295) ng/ml
free kappa chain	23.5 (6.7-22.4) mg/l
free lambda chain	1170 (8.3-27) mg/l
free kappa-lambda chain ratio	0.02(0.31-1.56) mg/l

RADIOLOGY

1. X-ray skull (lateral view):



2.MRI lumbo-sacral spine: Wedging fracture of D11 vertebra with adjacent spinal cord edema.Heterogeneous marrow signal intensity involving lower dorso lumbar vertebrae & S1 vertebrae.

DISCUSSION

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).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 musculoskeletal pain at the back. Other common presentations include systemic sequelae such as renal insufficiency due to light chain deposition , anaemia ,fatigue and hypercalcemia. At the time of diagnosis our patient also had deranged renal function tests.

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].

Haematological analysis in 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 the normal limit. Serum β2-microglobulin level is increased in multiple myeloma and higher levels are also associated with poor prognosis. The most frequent radiographic characteristics in multiple myeloma are osteolytic lesions with a "soap bubble" appearance , skull x-ray of our patient showed multiple lytic lesions as can be observed in many cases. Immunoelectrophoresis study of our patient suggestive of raised gamma globulin with prominent M spike. MRI Dorsolumbar spine suggestive of osteolytic lesions.

The median duration of survival of patients with multiple myeloma 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 multiple myeloma.These results support the beneficial effect of a very young age on survival in patient with myeloma. Though increased level of β2 microglobulin, serum creatinine,IL-6,IL-2 and plasmablastic type myeloma cells suggest poor prognosis.

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