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Non secretory multiple myeloma of lumbar veterbrae : A rare subtype of multiple myeloma

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Abstract

The plasma cell disorders are monoclonal neoplasms related to each other by virtue of their development from common progenitors in the B lymphocyte lineage. Multiple myeloma, Waldenstrom's macroglobulinemia, primary amyloidosis and the heavy chain diseases comprise this group . Non secretory myeloma comprises of less than 1% of this spectrum.

Keywords: Multiple myeloma , Non secretory myeloma, Neoplasm.

INTRODUCTION

Multiple myeloma is a malignant proliferation of plasma cells within the bone marrow. It is the most common primary malignant tumor of the bone, about 27% of the biopsied bone tumors.¹ Measurement of circulating monoclonal immunoglobulin has been the standard for diagnosis, prognosis and management. However, in about one to five percent of multiple myeloma cases no protein can be detected² and these patients are known to have a non secretory type of myeloma. Multiple myeloma is usually diagnosed with bone marrow plasmacytosis, lytic bone lesions and serum electrophoresis .

In current times, international staging system(ISS) has been established based on beta 2 microglobulin levels and serum albumin levels³ .

We present a case report of a patient who presented to our institution with complaints of back pain and

decreased appetite and was diagnosed with non secretory multiple myeloma.

CASE REPORT

A 55 year-old male was referred to our institution with complaints of low back ache of 6 months duration. The pain was radiating down the right lower limb as far as the knee joint. There was no history of trauma or history suggestive of any significant medical co-morbid conditions.

Examination revealed tenderness on the right side of the lumbosacral spine and right sacroiliac joint. Patient had mild weakness of the right leg . An x-ray of the lumbosacral spine showed evidence of collapse at L1/L2 vertebrae. The Magnetic Resonance Imaging (MRI) scan showed collapse of the L1/ L2 vertebrae with extrusion of the bone posteriorly into the spinal canal . PET-CT showed multiple avid

sclerotic lesions in L1/L2 vertebrae, left ribs and bilateral pelvic bones.

Lab investigations revealed hemoglobin of 11.0 g/dl, Creatinine was 0.9 mg/dl (0.6-1.2mg/dl) . The serum calcium Lactic acid dehydrogenase was elevated, 1200 IU/l (normal 313-618 IU/l) and Alkaline phosphatase was normal, 140 IU/l (normal 25-150 IU/l).

Myeloma screen did not reveal presence of any abnormal compact bands and there was no Bence-Jones proteinuria. The levels of serum immunoglobulins were normal. The beta 2 microglobulin levels were 3354 ng/ml (670- 2143ng/ml). Bone marrow aspiration and biopsy was done which showed hypercellular marrow replaced entirely by plasma cells . Final diagnosis of nonsecretory multiple myeloma was made and the patient was put on melphalan , lenalidomide and prednisolone based chemotherapy and radiotherapy to lumbar vertebrae. However after a few weeks patient developed progressive lower limb weakness and died within 5 months of treatment.

DISCUSSION

According to the most recent data from the Surveillance, Epidemiology, and End Results (SEER) program, multiple myeloma (or variably, MM throughout text) is a relatively uncommon malignancy in the United States, representing 1.0%

of all malignancies in whites and 2.0% in African Americans. Among hematologic malignancies, it constitutes 10 % of the tumors and ranks as the second most frequently occurring hematologic cancer in the United States after non-Hodgkin's lymphoma. Multiple myeloma is a germinal center-derived tumor with mainly postswitch B-cell phenotype characterized by extensive Ig gene hypermutation in a pattern suggesting antigen selection.⁴ Nonsecretory multiple myelomas were first described in 1958 by Serre.⁵ Since then numerous case reports have appeared describing variations in microscopic appearances of the tumor⁶. It has been postulated that there may be reduced protein synthesis or increase in breakdown of abnormal immunoglobulin chains intracellular or extracellular.

The above patient is a classical example of non secretory multiple myeloma and meets the criteria laid down by the international myeloma working group. Once diagnosed the treatment remains the same as that of multiple myeloma and the survival rates are also the same. The above variant is a diagnostic dilemma and eventually delays the start of treatment in these patients. In conclusion, absence of paraprotein in the blood does not exclude multiple myeloma. Hence a high index of suspicion should be kept in mind.

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