Non-secretory multiple myeloma with diagnostic challenges

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Case report

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Non-secretory multiple myeloma with diagnostic challenges

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Abstract

Non-secretory multiple myeloma (NSMM) is a rare variant of the classic form of multiple myeloma (MM). In NSMM, no monoclonal gammopathy can be detected in serum or urine by conventional techniques, making the diagnosis more difficult. We describe a 71-year-old man who had been diagnosed and treated for granulocytic sarcoma one year prior to his recent problems of progressive low-back pain of two months duration. Skeletal X-rays showed diffuse osteolytic lesions with multiple pathological fractures but there was no monoclonal gammopathy in the serum or urine. The biopsy of the lytic lesion on the upper part of the femur showed infiltration by abnormal plasma cells. A diagnosis of NSMM was made and he was treated with chemotherapy. The early diagnostic difficulty and the challenges faced regarding the case are discussed. ***Clin Ter 2010; 161(5):445-448***

Key words: *diagnosis, multiple myeloma, non-secretory, osteolytic lesions, pathological fracture*

Introduction

Multiple myeloma (MM) is characterized by clonal proliferation of plasma cells. The malignant plasma cells secrete an abnormal immunoglobulin causing monoclonal gammopathy that can be identified in the serum and or urine by immunoelectrophoresis. Skeletal X-rays as well as bone marrow morphology are other useful diagnostic tests. Nevertheless, patients with clinical and radiological findings similar to those found in MM but without the presence of monoclonal gammopathy, may have a rare variant form of myeloma known as the non-secretory multiple myeloma, (NSMM). NSSM is a rare type of multiple myeloma and usually requires a high level of suspicion for its diagnosis. In this case report, we describe a rare case of NSMM which posed a diagnostic challenge. The appropriate investigations in resolving the diagnostic problems are being discussed.

Case report

A 71-year-old man presented to Universiti Kebangsaan Malaysia Medical Centre (UKMMC) with worsening low-back pain and there was also pain at the back of his head, left forearm and legs of two months duration. The pain was associated with loss of weight and appetite. He gave a past history of an admission in another hospital with complaints of pain at the right lower ribs a year ago. He was then diagnosed to have granulocytic sarcoma following a paraspinal mass biopsy and was then treated for the granulocytic sarcoma in the hospital.

Physical examination showed the patient was in pain. His blood pressure was 122/75 mmHg and pulse rate 90/min. There was no lymphadenopathy or signs of bleeding tendency. Examination of his cardiovascular, respiratory and abdominal system revealed no significant findings. There was generalized bone tenderness of the left upper and lower limbs and also over the lumbosacral region. The cranial nerves were intact and there was no neurological deficit.

Most of the blood investigations were normal except for mild normochromic normocytic anaemia (Hb: 11.1 g/dL), a high erythrocyte sedimentation rate (78 mm/hr), with presence of rouleaux in his blood film. He had normal white cell and platelet counts. His serum calcium was normal and his renal profile revealed no impairment. The serum total protein and albumin were also normal. The bone marrow smear and trephine biopsy specimens were inadequate and were unable to be interpreted. Serum and urine protein electrophoresis were negative for monoclonal gammopathy. Immunofixation test on the serum and urine using monoclonal antisera against IgG, IgA, IgM, kappa and lambda-light chain were also negative. Quantitative immunoglobulin studies revealed hypogammaglobulinemia with a serum IgG value of 728 mg/dl (normal, 931-1916 mg/dl), IgA of 44.1 mg/dl (normal, 70-473 mg/dl) and IgM of 25.9 mg/dl (normal, 34-265 mg/dl).

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The X-rays of the chest, upper limb, lumbosacral and lower limb however revealed pathological fractures of the left radius, right clavicle, left tibia (Fig. 1) and compression fracture of the third lumbar vertebra. Multiple lytic lesions were also observed involving the skull (Fig. 2), clavicle, scapula, humerus, left radius, pelvic bone (Fig.3) and both femur. A trucut biopsy of the lytic lesion in the upper third of the left femur was performed and it showed marked infiltration of the abnormal plasma cells (Fig. 4).

A diagnosis of NSMM was made based on the biopsy and radiological findings. The disease was staged as stage IIIA (Durie Salmon) as he had advance lytic bone lesion but with no renal impairment.

To relieve his pain he was given morphine and DF118. The patient was planned for chemotherapy with dexamethasone, thalidomide and zometa (DTZ regime) but as thalidomide was initially unavailable at our hospital, he was treated with dexamethasone, cyclophosphamide and zometa. Thalidomide was available when he had completed his third cycle of chemotherapy. Thus, therapy with DTZ regime was

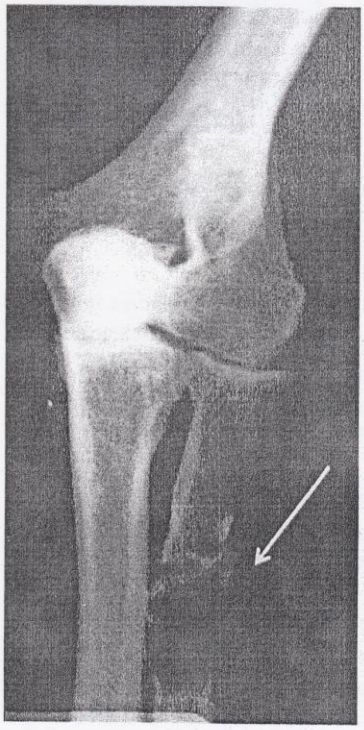

Fig. 1. X-ray of the left lower limb (antero-lateral view): the white arrow shows the pathological fracture of the left tibia bone.

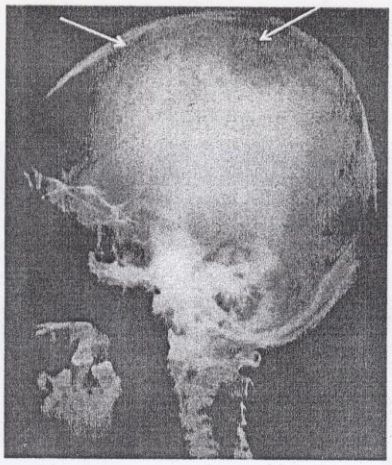

Fig. 2. X-ray of the skull (lateral view): the white arrows show multiple lytic lesions over the skull.

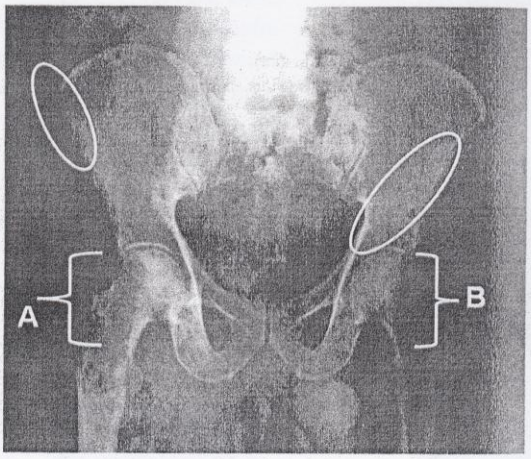

Fig. 3. X-ray of the pelvis (antero-posterior view): multiple lytic lesion at the head of the femur bones (labelled as A and B). The white oval encircled area show multiple small lytic lesion on both pelvic bones.

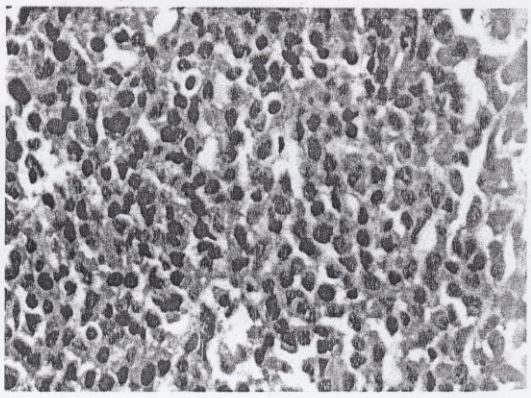

Fig. 4. Biopsy of the lytic lesion on the upper third of the left femur (Haematoxylin and Eosin staining, x400 magnification) shows diffuse infiltration of the plasma cells.