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CASE REPORT

Plasmacytoma: A Rare Case of Bone Malignancy

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Abstract

Solitary Plasmacytoma is a rare disease characterized by a localized proliferation of neoplastic monoclonal plasma cell, without evidence of systemic disease. It can be subdivided into solitary bone plasmacytoma if the lesion originates in bone, or solitary extramedullary plasmacytoma if the lesion involves a soft tissue. A 25-year-old male patient is admitted to our clinic with hip pain. In the biopsy performed from the left iliac bone, atypical cells with rounded nuclei, granular chromatin and eccentrically located, extensive cytoplasm, and plasma cell morphology were observed. Because of CD38 positivity and plasma cell morphology, kappa lambda examination performed by CISH showed kappa positive lambda negative. Plasmocytomas are easily recognizable on tissue sections if the plasma cells are not poorly differentiated (plasmoblastic or anaplastic). In poorly differentiated lesions, immunohistochemical staining or in situ hybridization studies of kappa and lambda light chains can be performed.

Keywords: Plasmacytoma, Histopathology, Plasma cell

Introduction

Plasmacytoma is a primary and systemic malignancy that arises from the bone marrow and is distinguished by clonal proliferation of plasma cells [1]. Extramedullary plasmacytoma (EMP), solitary plasmacytoma of bone (SBP), and multiple myeloma are all types of plasmacytomas [2].

SBP is an uncommon illness with a high recurrence rate, a cumulative incidence of 0.15/100,000, and a bad prognosis for people over the age of 60 [3]. SPB is now diagnosed mostly by histological evaluation and verified through tissue biopsy and radiography [3, 4].

The objective of this study was to present the extremely rare case of bone plasmacytoma.

Case Description

A 25-year-old male patient is admitted to our clinic with hip pain. In the non-contrast CT, a mass lesion with a size of 45x55x73 cm in the acetabular roof of the left iliac bone and posteriosuperiomedial causing significant lytic changes in the bone structure was observed (fig.1).

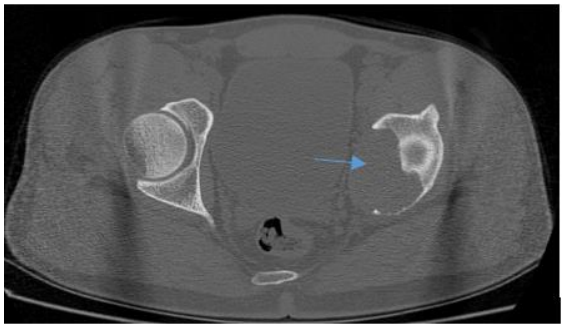

Figure.1: Mass located in the acetabular roof of the left iliac bone

On PET CT, increased FDG uptake was observed at the SUV max: 11.1 malignancy level in the 55x74x98 mm soft tissue component lytic lesion that causes destruction in the observed bone extending from the bone to the acetabular roof.

In the biopsy performed from the left iliac bone, atypical cells with rounded nuclei, granular chromatin and eccentrically located, extensive cytoplasm, and plasma cell morphology were observed. Lymphoma, Langerhans cell histiocytosis, neuroendocrine tumors and malignant melanoma were included in the differential diagnosis (fig.2).

CD38, CD56, Vimentin positive, chromogranin, synaptophysin, Melan A, CD68, myogenin, PAN CK, LCA negative were observed with immunohistochemistry. KI67 was 10% and 30 mitoses were observed in 10 magnification fields with PHH3 (fig.3)

Because of CD38 positivity and plasma cell morphology, kappa lambda examination performed by CISH showed kappa positive lambda negative. The case was diagnosed as plasmacytoma. No evidence of multiple myeloma was observed in the bone marrow biopsy performed later (fig.4).

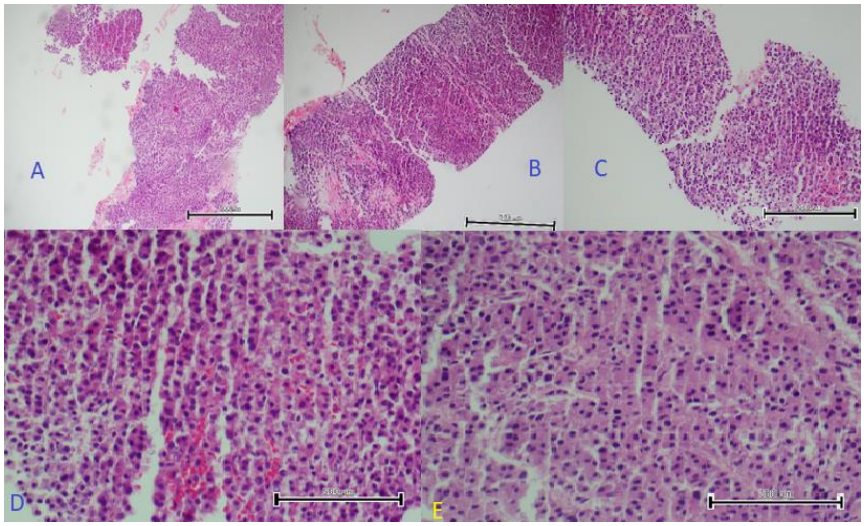

Figure.2: H&E, A, B: X100, C: X200, D, E: X400

Discussion

Solitary plasmocytoma is a rare disease characterized by a localized proliferation of neoplastic monoclonal plasma cells, without evidence of systemic disease. It can be subdivided into solitary bone plasmacytoma if the lesion originates in bone, or solitary extramedullary plasmacytoma if the lesion involves a soft tissue. The incidence of solitary bone plasmacytoma is higher than solitary extramedullary plasmacytoma [5].

Both are more common in men (65%), with a mean age of 55 years. Solitary plasmocytoma has a better prognosis compared to multiple myeloma [6,7].

Epstein-Barr virus (EBV) - positive plasmacytoma is a rare plasma cell neoplasm. It remains unclear whether EBV-positive plasmacytoma represents a distinct entity or a variant of plasmacytoma. It shares morphologic features with plasmablastic lymphoma (PBL) and may cause diagnostic uncertainty [6].

Vertebrae, ribs, skull and femur are the most common sites of solitary plasmacytoma involvement. Clinical findings vary according to localization,but laboratory findings are similar to multiple myeloma [7].

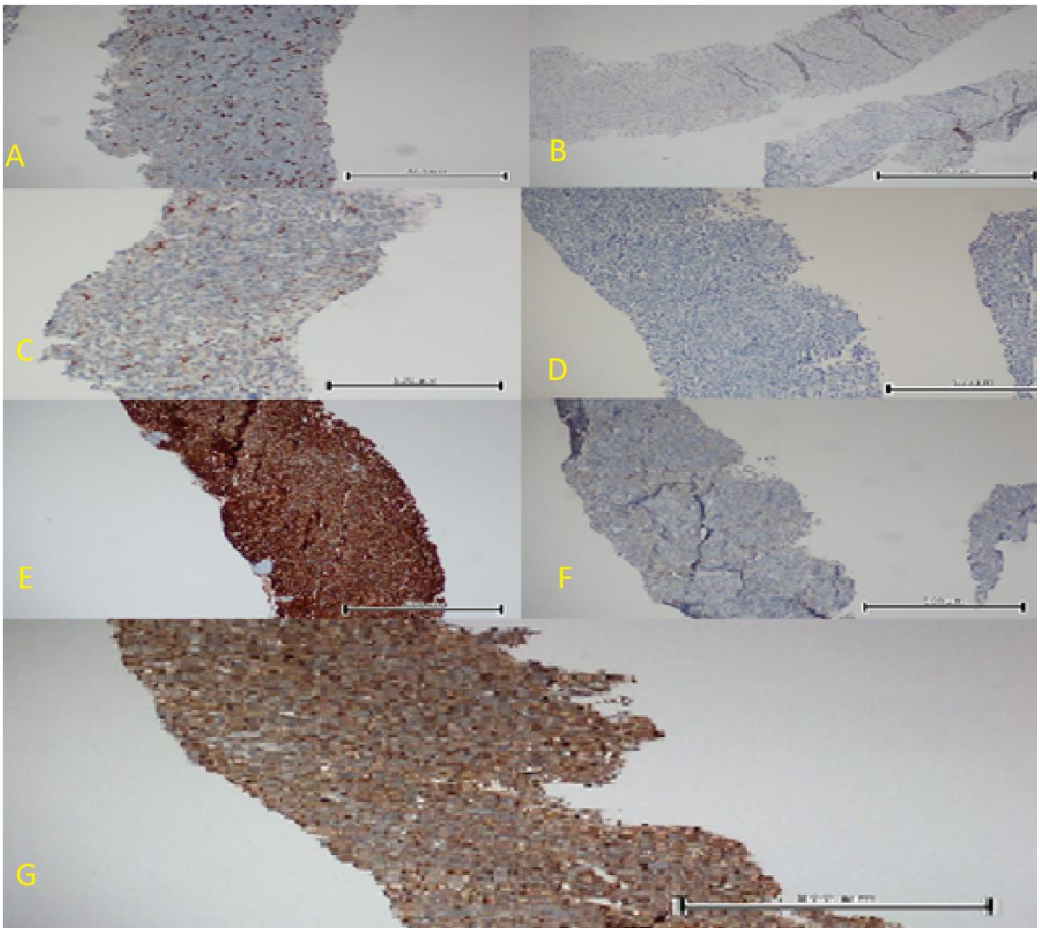

Figure.3: *A: LCA IMMUNPEROKSIDASE X100, B: PAN-CK IMMUNPEROKSIDASE X100, C: CD68 IMMUNPEROKSIDASE X100, D: S100 IMMUNPEROKSIDASE X100, E: CD38 IMMUNPEROKSIDASE X100, F: SİNAPTOFİZİN IMMUNPEROKSIDASE X100, G: CD56 IMMUNPEROKSIDASE X100*

Plasmoblastic: less abundant cytoplasm with little or no hof region, The criteria for solitary plasmacytoma of bone are the presence of a single bone lesion whose histology is consistent with a plasma cell tumor, the absence of a plasma cell infiltrate in random bone marrow biopsies, no radiological evidence of other bone lesions, and the absence of other clinical signs suggestive of myeloma. Low amounts of M-protein were found in serum and urine in 24-72% of patients [7,8].

Histologically mature plasma cells contain oval, perinuclear hof, rounded eccentric nuclei with abundant basophilic cytoplasm, "clock face" chromatin, and indistinguishable nucleoli.Immature plasma cells have higher nuclear / cytoplasmic ratio, more abundant cytoplasm and hof region compared to plasmablastic, more dispersed chromatin, often prominent nucleoli [].

Plasmocytomas are easily recognizable on tissue sections if the plasma cells are not poorly differentiated (plasmoblastic or anaplastic). In poorly differentiated lesions, immunohistochemical staining or in situ hybridization studies of kappa and lambda light chains can be performed.

The optimal treatment is moderate-dose radiotherapy (40-50 Gy) and occasionally surgery. Adjuvant chemotherapy does not improve survival.

Although progression to multiple myeloma occurs within 2 to 10 years, approximately one-third of patients have a disease-free survival of more than 10 years with local eradication of the lesion. In advanced myeloma, new bone lesion, generalized bone marrow plasmacytosis and M-protein increase develop.

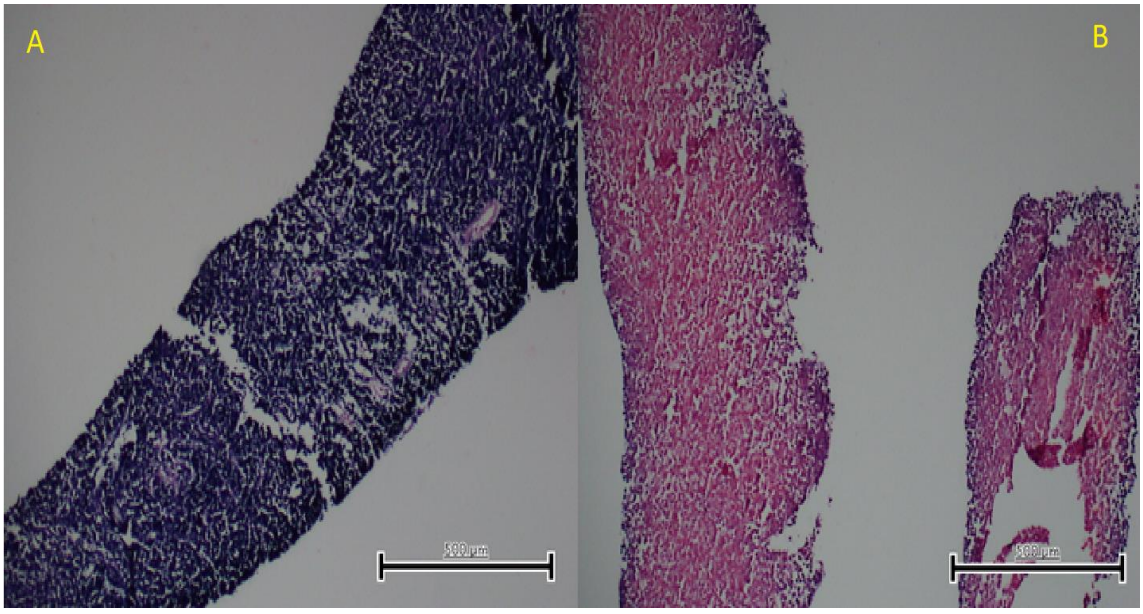

Figure.4: A: KAPPA CISH X100, B: LAMBDA CISH X100

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Data analysis and interpretation: **MD, UA**

Collection and/or assembly of data: **SS, GY**

Writing the article: **MN, MD, UA, TB**

Critical revision of the article: **GY, UA**

Final approval of the article: **MD, MN**

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