



Imaging Features of Breast Plasmacytoma

Meme Plazmositomunun Görüntüleme Özellikleri

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Abstract

Extramedullary plasmacytoma (EMP) occurs as a result of abnormal proliferation of plasma cells outside the bone marrow. Breast plasmacytomas are rare. Radiologically, they can be confused with benign and malignant lesions of the breast. It is important to be able to diagnose EMP in the breast since the treatment strategy is different from that of other lesions and allows for the diagnosis and early treatment of multiple myeloma (MM) relapse. We report imaging and clinicopathological findings of an EMP case in which a 65-year-old patient with MM in remission presented with breast masses.

Keywords: PET/CT, plasmacytoma, breast, ultrasonography, mammography

Öz

Ekstramedüller plazmositom (EMP), plazma hücrelerinin kemik iliği dışında anormal proliferasyonu sonucu meydana gelir. Meme plazmositomu nadir görülür. Radyolojik olarak memenin benign ve malign lezyonlarıyla karışabilmektedir. Memede EMP tanısını koyabilmek önemlidir, çünkü diğer lezyonlarla tedavi stratejisi farklıdır ve multipl miyelom (MM) relapsının tanınip erken tedavisine olanak sağlar. Bu yazıda 65 yaşında MM tanılı hastanın meme lezyonuyla prezente olduğu EMP olgusunun görüntüleme ve klinikopatolojik bulguları sunulmuştur.

Anahtar kelimeler: PET/BT, plazmositom, meme, ultrasonografi, mamografi

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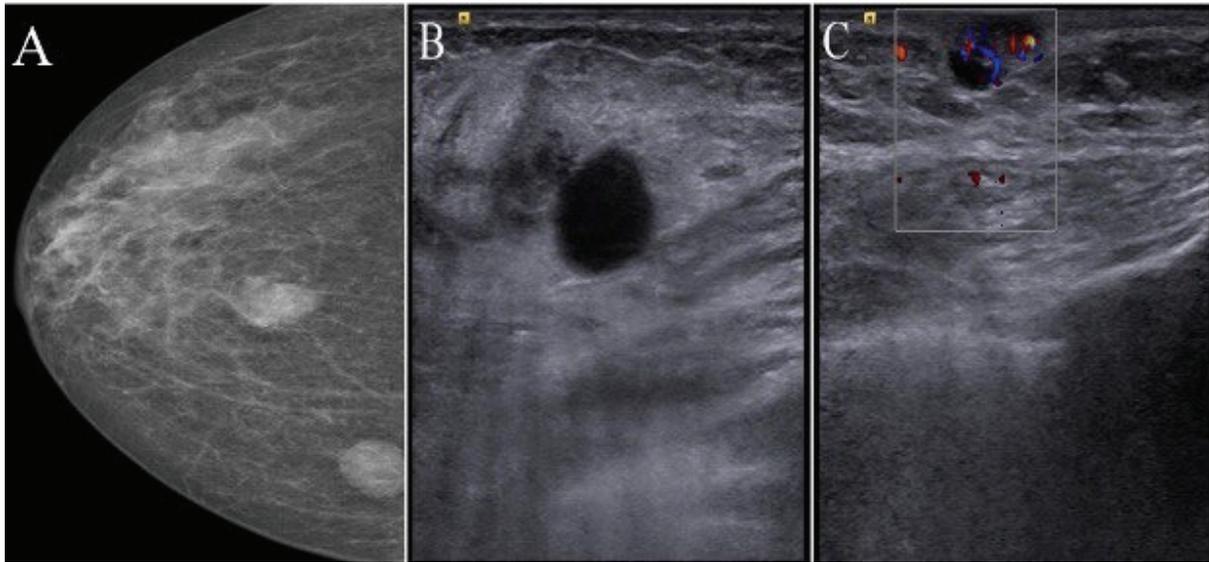


Figure 1. A 65-year-old female patient diagnosed with multiple myeloma (MM), who was followed up in remission, was admitted to the hospital with a complaint of mass in the right breast. In the mammography (A), two well-circumscribed, oval-shaped lesions with equal density to the fibro-glandular tissue were observed in the upper inner quadrant of the right breast. Ultrasonography (US) showed (B) a well-circumscribed markedly hypoechoic (pseudo-cystic appearance) 9x10 mm and 3x2 mm lesions with posterior acoustic enhancement (C). Color Doppler US showed increased vascularity in these lesions. US findings of breast plasmacytoma; in line with our case, are circumscribed margin, pseudo-cystic appearance and internal vascularity in Doppler US. Microcalcification and lymphadenopathy were not expected findings (1,2). However, the US imaging findings are variable and not specific, therefore, US-guided core needle breast biopsy was performed for histopathological diagnosis (3).

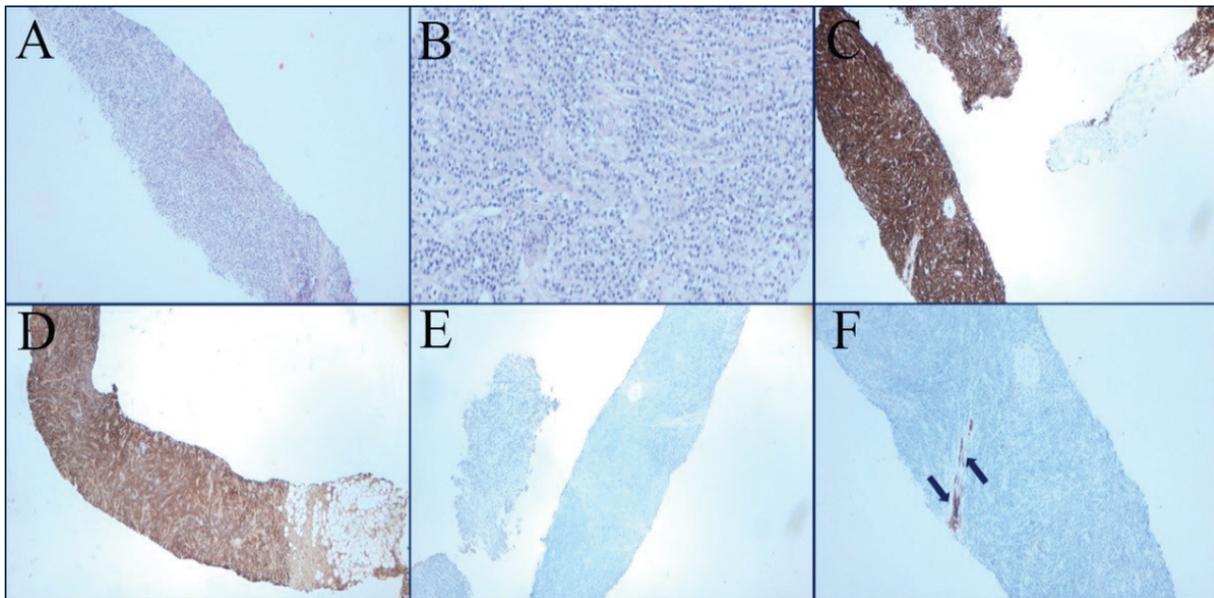


Figure 2. Histopathological analysis. Microscopy revealed plasma cell infiltration (A x40, B x100, hematoxylin-eosin stain). Tumor cells were positive for immunohistochemical CD-138 and kappa (C and D, x20). Lambda and pancytokeratin were negative (E and F, x20). The breast duct between tumor cells appeared as positive (F, arrows). The pathology result was compatible with extramedullary plasmacytoma (EMP).

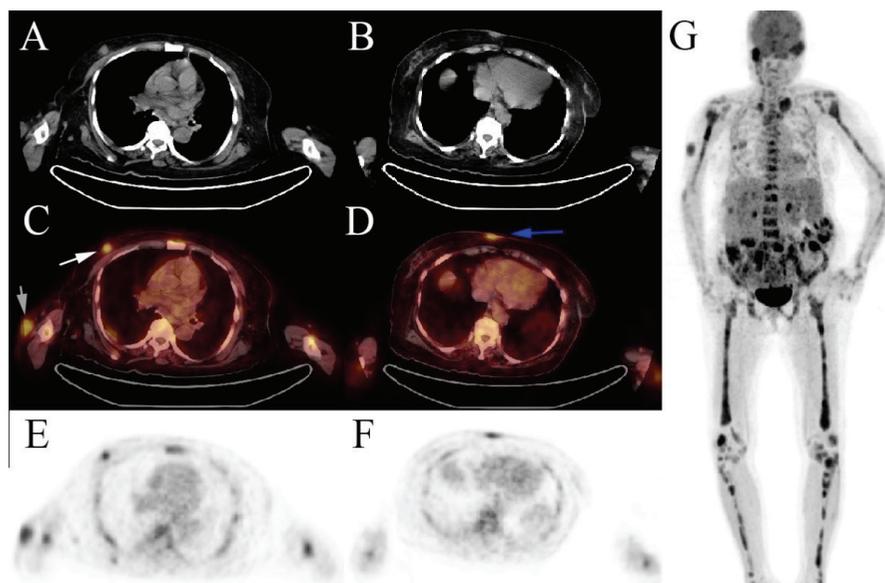


Figure 3. Positron emission tomography/computed tomography (PET/CT) has been found to be useful in detecting extramedullary involvement and disease extension in MM (4,5). The International Myeloma Working Group recommends ^{18}F -fluorine-fluorodeoxyglucose (^{18}F -FDG)-PET combined with CT or magnetic resonance imaging to monitor treatment response and detect extramedullary involvement (1,2,6). In our patient, in axial CT (A, B), fusion PET/CT (C, D) and PET images in ^{18}F -FDG PET/CT nodular lesions in soft tissue density in the right breast (E, F) showed ^{18}F -FDG uptake [white arrow, maximum standardized uptake value (SUV_{max}): 3.8; blue arrow, SUV_{max} : 3.6]. In addition, in axial sections (A, B, C, D, E, F) nodular lesion in the right arm and pleural thickening in the posterior part of the right hemithorax showed increased activity. In PET maximum intensity projection image (G), ^{18}F -FDG uptake in other areas (bilateral maxilla retrobulbar, bilateral proximal clavicular and common bone marrow) was also monitored. ^{18}F -FDG PET/CT whole-body screening ensured that lesions in other areas were shown. EMP in the breast is rare, although its frequency is not clear, with 63 cases corresponding to approximately 15 cases per year reported in 1928 and 2009 (1,3). The average incidence age is 53 and the vast majority of patients are women (7). Although 90% of EMP cases occur in the head and neck area, they are most commonly seen in the upper respiratory tract or oral cavity. It is important to distinguish breast plasmacytoma from benign and malignant breast lesions since its treatment is not surgical but through chemotherapy and/or local radiotherapy (2,8). Therefore, knowing the imaging features allows for accurate diagnosis and treatment.

Ethics

Informed Consent: It has received institutional ethics approval.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: S.D., S.F., Concept: B.K., Design: N.P., Data Collection or Processing: Ş.B., Analysis or Interpretation: N.P., B.K., S.F., S.D., Literature Search: Ş.B., Writing: Ş.B.

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