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A Rare Case of Synchronous Lobular Breast Carcinoma and Serous Psammocarcinoma of the Ovary Evaluated by ^{18}F-FDG PET/CT

^{18}F-FDG PET/BT ile Değerlendirilen Nadir Bir Senkron Lobüler Meme Karsinomu ve Over Seröz Psammokarsinomu Olgusu

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Abstract

Serous psammocarcinoma of the ovary is a rare variant of ovarian serous carcinoma characterized by the presence of calcified peritoneal lesions, known as psammoma bodies. These calcified lesions may usually be considered benign on computed tomography but may show avidity for ^{18}F-fluorodeoxyglucose (^{18}F-FDG), which can be helpful in the diagnosis of this rare ovarian tumor. We present a rare case of serous psammocarcinoma of the ovary detected during the diagnostic work-up of lobular breast cancer using ^{18}F-FDG positron emission tomography/computed tomography.

Keywords: Psammocarcinoma, ovary, peritoneum, ^{18}F-FDG PET/CT

Öz

Overin seröz psammokarsinomu, psammoma cisimcikleri olarak bilinen kalsifiye peritoneal lezyonların varlığı ile karakterize edilen, over seröz karsinomunun nadir bir varyantıdır. Bu kalsifiye lezyonlar, bilgisayarlı tomografide genellikle iyi huylu olarak değerlendirilir ancak ^{18}F-florodeoksiglukoz (^{18}F-FDG) için avidite gösterebilir ve bu durum, bu nadir yumurtalık tümörünün tanısında yardımcı olabilir. Lobüler meme kanserinin tanısal incelemesi sırasında ^{18}F-FDG pozitron emisyon tomografisi/bilgisayarlı tomografi kullanılarak tespit edilen nadir bir over seröz psammokarsinomu olgusu sunulmuştur.

Anahtar kelimeler: Psammokarsinom, over, periton, ^{18}F-FDG PET/BT

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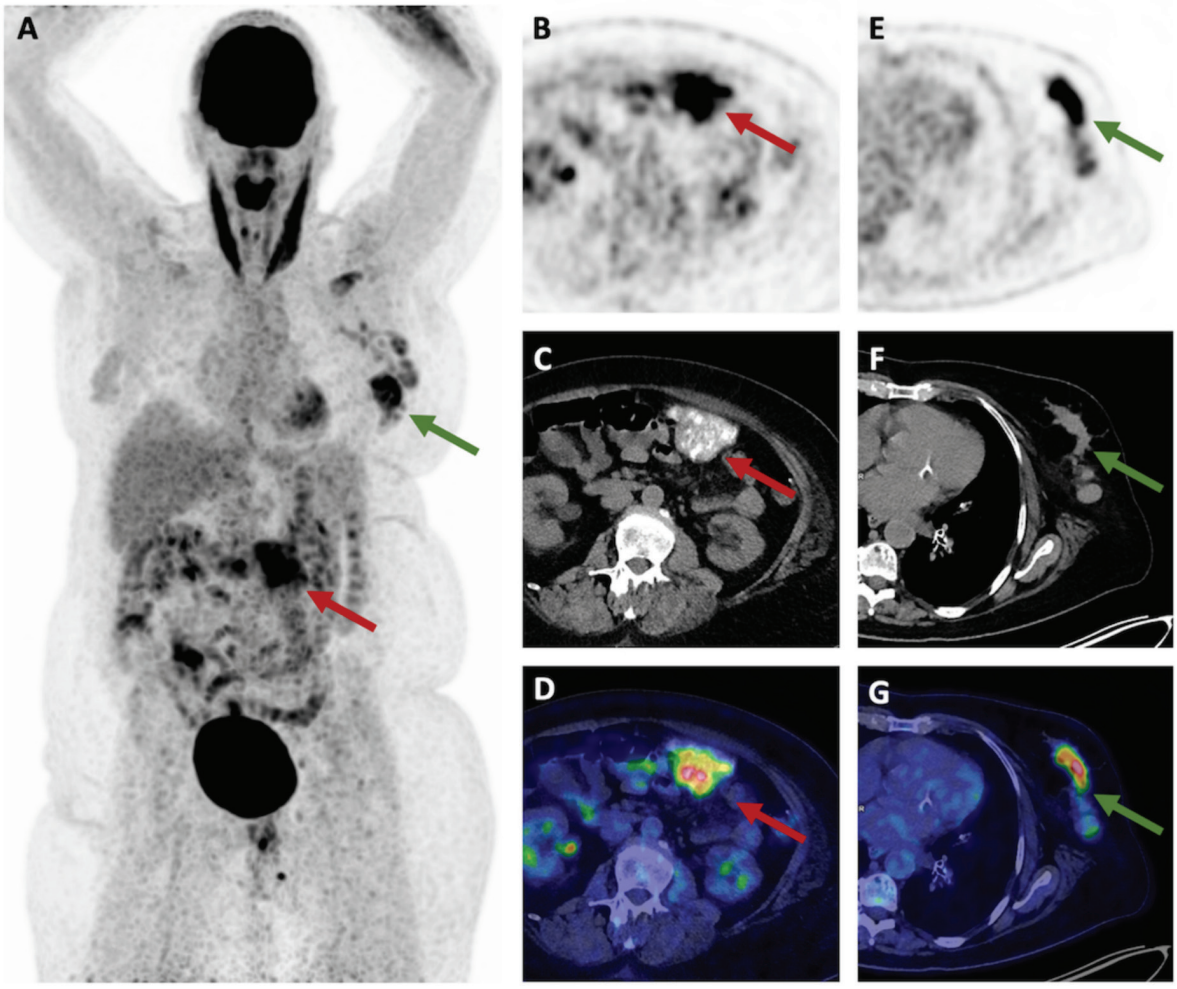

Figure 1. A 63-year-old woman underwent ^{18}F-fluorodeoxyglucose (^{18}F-FDG) positron emission tomography/computed tomography (PET/CT) for initial extension work-up of a lobular breast carcinoma. Maximum intensity projection (A), axial attenuation-corrected PET (E), transaxial CT (F), and fused PET/CT (G) images showing intense tracer uptake in the breast lesion (green arrows) associated with homolateral axillary lymph node involvement. Additionally, maximum intensity projection (A), axial attenuation-corrected PET (B), transaxial CT (C), and fused PET/CT (D) images revealed increased ^{18}F-FDG uptake by a large heavily calcified omental soft-tissue mass (red arrows), which was associated with less-FDG-avid disseminated calcified peritoneal lesions. Increased ^{18}F-FDG uptake in the calcified lesion was also observed in non-attenuation corrected images. No ovarian mass was detected.

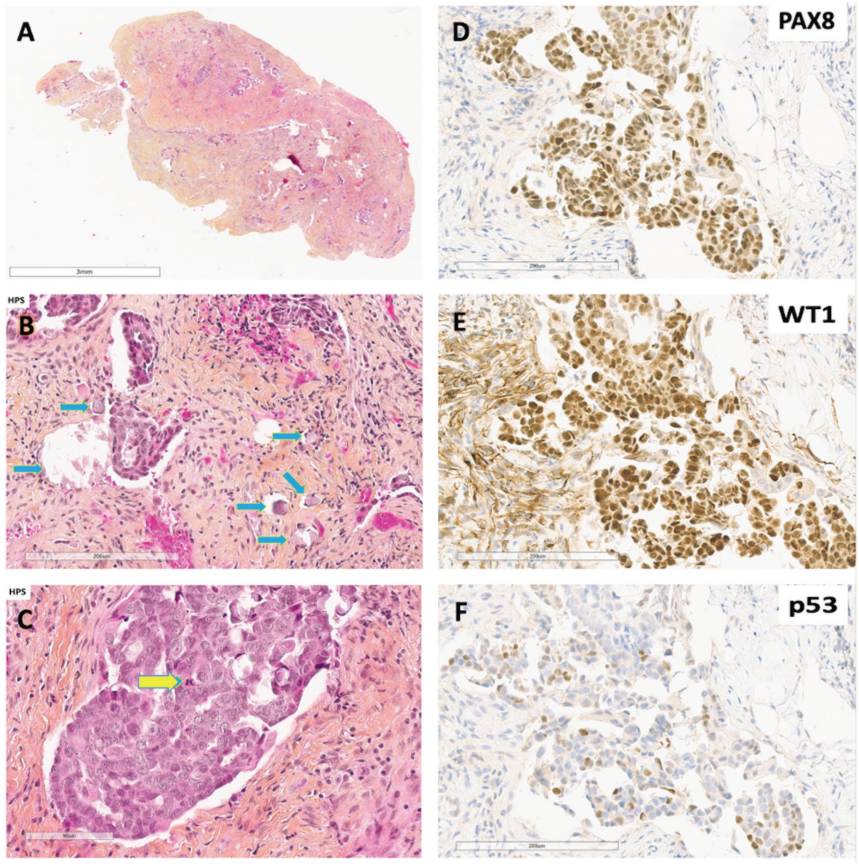

Figure 2. Histological examination of the peritoneal nodule revealed a desmoplastic stroma containing numerous tumor cell clusters [A, hematoxylin phloxine saffron staining (HES), x10 magnification]. At higher magnification (x180), clusters of tumor cells display micropapillary features and spherical, lamellated, concentric calcified structures corresponding to psammoma bodies (B, HES; blue arrows). Tumor cells were intermediate in size (C, HES; yellow arrow; x240 magnification). Immunohistochemical analysis showed intense and diffuse positivity for PAX8 and WT1, indicative of serous ovarian primary neoplasm (1). The expression of p53 was wild-type (D-F, magnification x200). The final diagnosis of this lesion was low-grade invasive serous carcinoma. The presence of psammoma bodies is characteristic of serous psammocarcinoma of the ovary, a rare variant of ovarian serous carcinoma (2,3,4). Low-grade serous carcinoma has a better prognosis (5,6,7). Calcified peritoneal lesions visualized on CT are explained by the presence of fine calcium particles in psammoma bodies (8,9). These lesions appear to show avidity for ^{18}F-FDG, although only a limited number of cases have been reported on ^{18}F-FDG PET/CT imaging (10,11,12,13). The visualization of a calcified lesion on conventional CT can be falsely reassuring, leading to misdiagnosis (14). This case reinforces the idea that ^{18}F-FDG PET/CT is useful for the diagnosis of this rare type of ovarian tumor.

Ethics

Informed Consent: A written informed consent was obtained.

Authorship Contributions

Concept: L.A.M., M.D., Design: L.A.M., M.D., Data Collection or Processing: L.A.M., A.T., S.A., A.F., M.D., Analysis or Interpretation: L.A.M., A.T., M.D., Literature Search: L.A.M., M.D., Writing: L.A.M., M.D.

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