Breast Metastasis Detected on Ga-68 DOTATATE Positron Emission Tomography/ Computed Tomography Imaging in Malignant Pheochromocytoma

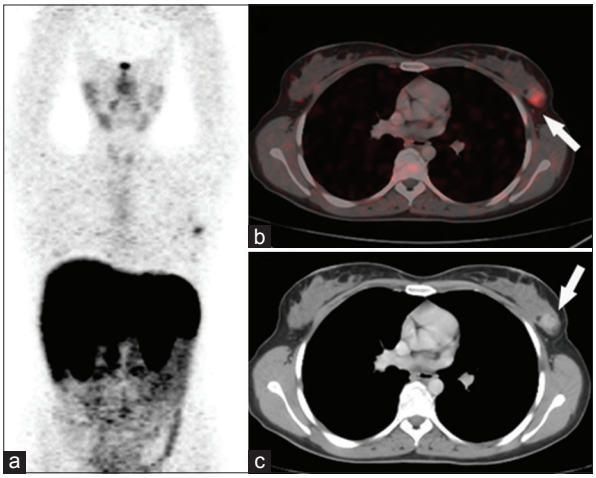

Figure 1: Ga-68 DOTATATE positron emission tomography/computed tomography (PET/CT) scan (a) maximum intensity projection, (b) fused transaxial PET/CT, (c) transaxial CT images showing moderate tracer uptake (maximum standardized uptake value 4.2) in an heterogeneously enhancing soft tissue lesion (arrow) of size 2.4 cm × 1.7 cm in the lower outer quadrant of the left breast with no abnormal tracer uptake elsewhere in the body

Dear Editor,

A 26-year-old female presented with complaints of headache, palpitation, sweating, and vomiting with high blood pressure. Abdominal ultrasonography and computed tomography (CT) showed left adrenal mass. The patient underwent left adrenalectomy and on histopathological examination was diagnosed to be pheochromocytoma (PCC). Subsequent Ga-68 DOTATATE positron emission tomography/CT (PET/CT) scan performed for detection of any other somatostatin receptor (SSTR) expressing lesion in the body, showed moderate tracer uptake (Maximum standardized uptake value 4.2) in an heterogeneously enhancing soft tissue lesion of size 2.4 cm × 1.7 cm in the lower outer quadrant of the left breast with no abnormal tracer uptake elsewhere in the body [Figure 1]. The lesion was considered to be metastatic in nature, and subsequent fine-needle aspiration cytology from left breast lesion confirmed metastatic NET.

Pheochromocytomas are rare catecholamine producing neuroendocrine tumors. The clinical triad of headache, sweating, and palpitations with hypertension is diagnostic, with 94% specificity and 91% sensitivity.[1] CT or magnetic resonance imaging (MRI) is used initially for localization with sensitivity between 75% and 100%, but a low specificity.[1] Most of the PCCs are benign, but some are malignant with prevalence of malignancy ranges between 5% and 26%.[2-4] The most common sites for metastatic disease are lymph nodes, bones, liver, and lungs[5,6] PCCs patients with known or suspected malignancy should undergo staging with CT or MRI. SSTR scintigraphy with PET/CT scan is also helpful to determine the extent and location as well as follow-up of disease as PCCs express SSTR, particularly subtypes 2, 3, and 5.[7] The expression of SSTR receptors is increased in malignant PCCs.[8] In our case, Ga-68 DOTATATE PET/CT scan was helpful in staging malignant PCC by detecting breast lesion. Detection of these metastatic sites leads to a significant change in the management of such patients. Ga-68 DOTATATE scan is useful in semi quantification of the lesions, which may be used for PRRNT in these tumors.[9]

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