IMAGES IN MASTOLOGY
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Recurrent diffuse large B-cell lymphoma mimicking primary breast cancer

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ABSTRACT

Breast lymphoma can represent 0.8%–2.2% of extranodal lymphomas and 0.1%–0.5% of primary breast neoplasms. Imaging findings are not specific, and its distinction from primary invasive breast carcinoma should be based on clinical data and histopathological analysis. We present the case of a 62-year-old woman who showed an unusual pattern of recurrent diffuse large B-cell lymphoma (DLBCL) mimicking primary breast cancer on imaging studies, including mammography, ultrasound, magnetic resonance imaging (MRI), and positron emission tomography-computed tomography (PET-CT).

KEYWORDS: Breast neoplasms; Lymphoma; Mammography; Ultrasonography; Magnetic resonance imaging; PET-CT.

A 62-year-old woman presented to our hospital with a left breast lump. She had a prior history of non-Hodgkin's lymphoma treated with chemotherapy, in remission for two years. Mammography (Figure 1A), ultrasound (Figure 1B), and magnetic resonance imaging (MRI) (Figure 2) showed an irregular mass in the upper quadrants of the left breast with ipsilateral axillary lymph node enlargement. Ultrasound-guided core-needle biopsy of the breast mass and axillary lymph nodes was compatible with recurrent diffuse large B-cell lymphoma (DLBCL). Immunohistochemistry showed positive expression of CD20, CD79a, CD5, Bcl-6, Bcl-2, and MUM1; negative expression of CD3, CD10, CD23, Cyclin D1, CD30, EBV, and C-MYC; and 90% expression of Ki-67. Whole-body positron emission tomography-computed tomography (PET-CT) was performed and showed no other sites of disease (Figure 3).

Breast lymphoma can represent 0.8%–2.2% of extranodal lymphomas and 0.1%–0.5% of primary breast neoplasms. The most common subtypes of breast lymphoma originate from B-cells, including DLBCL, marginal zone lymphoma (MALT lymphoma), and follicular lymphoma. Age at diagnosis usually ranges from 55 to 65 years, and the most frequent clinical presentation is a breast lump that may be associated with pain in 25% of cases. Ipsilateral axillary lymph node involvement can occur in more than 40% of cases.[1,2] Imaging findings are not specific, and its distinction from primary invasive breast carcinoma should be based on clinical data and histopathological analysis.[3,4] At mammography, they usually present as single or multiple masses, which may be bilateral in about 28% of cases; spiculated margins,

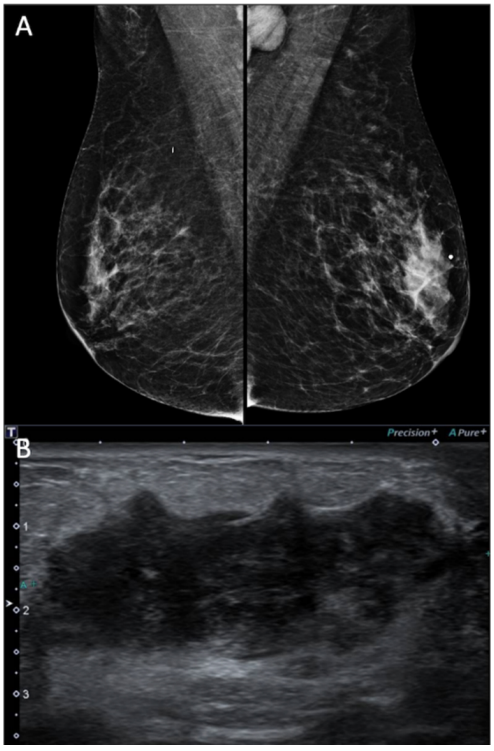


Figure 1. Bilateral mammography on mediolateral oblique (MLO) view (A) showed an irregular hyperdense mass in the upper quadrants of the left breast, near the metallic marker in the left breast lump, and left axillary lymph node enlargement. Ultrasound (B) revealed an irregular hypoechoic mass in the left breast with posterior acoustic enhancement.

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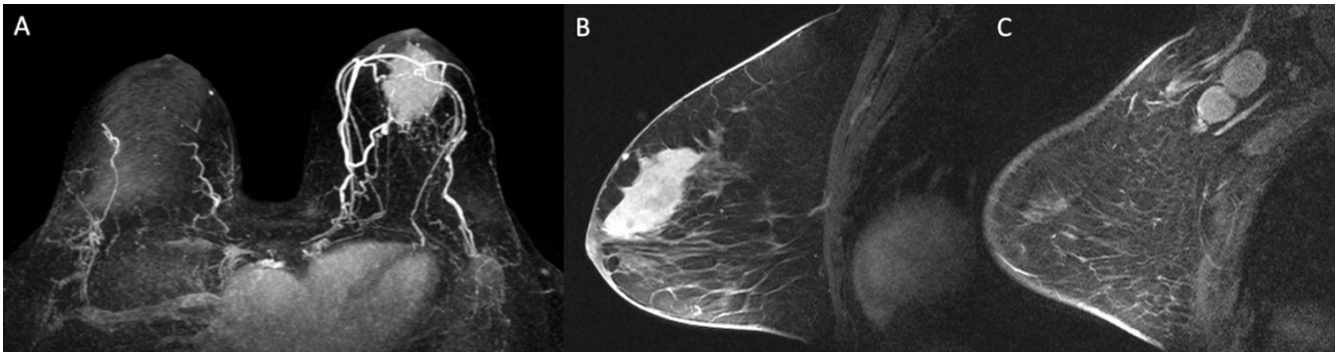


Figure 2. Breast magnetic resonance imaging (A: axial 3D MIP subtraction image; B, C: sagittal T1-weighted enhanced images) showed an irregular mass in the upper quadrants of the left breast (A and B) and left axillary lymph node enlargement (C).

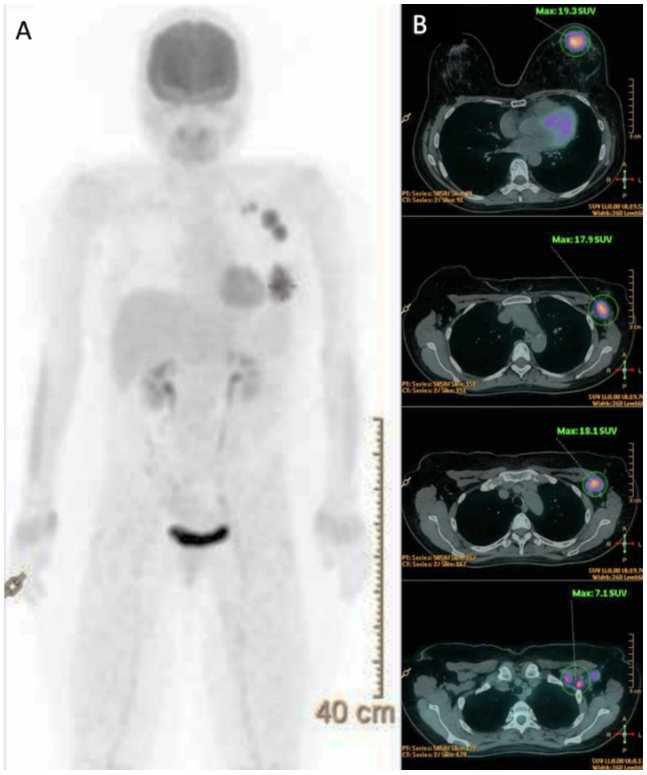


Figure 3. Whole-body positron emission tomography-computed tomography (PET-CT) (A: coronal 3D MIP PET image; B: axial fused PET-CT images) revealed a hypermetabolic mass in the left breast (SUVmax: 19.3) and left axillary lymph node enlargement at levels I and II (SUVmax: 18.1).

calcifications, and architectural distortion are unusual and suggest primary breast cancer. At ultrasonography, they frequently present as a hypo- or anechoic mass with indistinct or circumscribed margins, posterior enhancement, or no posterior features. At MRI, breast lymphoma most often appears as an irregular or circumscribed mass with mild heterogeneous internal enhancement, usually presenting a plateau or washout kinetic curve and restricted diffusion. Breast MRI can provide greater sensitivity in detecting multifocal and/or multicentric diseases.[5] Whole-body PET-CT can contribute to distant staging due to its high sensitivity and specificity in this entity, being also useful in evaluating the therapeutic response.[6]

This case showed an unusual pattern of recurrent DLBCL mimicking primary breast cancer. Immunohistochemical analysis revealed expression of CD5 and high expression of Ki-67, which is typically associated with aggressive clinical features and adverse outcomes. The patient presented complete response on PET-CT after treatment with rituximab and ifosfamide, carboplatin, and etoposide ICE (R-ICE) chemotherapy, in addition to autologous stem cell transplantation.

AUTHORS' CONTRIBUTION

D.C.D.: investigation, writing – original draft, writing – review & editing. E.N.P.L.: investigation, writing – review & editing. A.G.V.B.: investigation, writing – original draft, writing – review & editing. P.N.V.P.B.: conceptualization, investigation, supervision, writing – review & editing.

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