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## Case Report

# Occult Breast Cancer with Axillary Involvement in Breast with Scattered Fibroglandular Densities – It Just May Not Appear as It Used to Do: Case Report

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### ABSTRACT

Occult breast cancer (OBC), which is defined as clinically recognizable axillary metastatic carcinoma from an undetectable primary breast tumor, occult from conventional breast cancer screening imaging methods. This case reveals an unexpected OBC in a patient with predominantly adipose breasts, with only a few scattered areas of fibroglandular density tissue (BI-RADS® breast composition B), in which the mammographic sensitivity is approximately 90% for the diagnosis of primary breast cancer.

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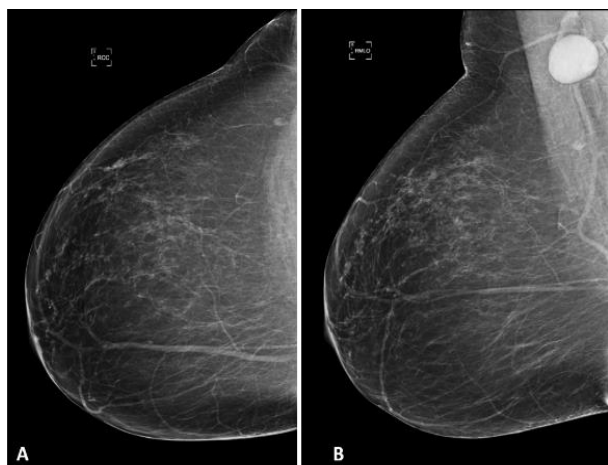
## Introduction

Occult breast cancer (OBC), which is defined as clinically recognizable axillary metastatic carcinoma from an undetectable primary breast tumor, occult from conventional breast cancer screening imaging methods, comprising approximately 0.3% to 1% of all breast cancer (BC) cases [1, 2]. Despite advances in diagnostic imaging that can identify a greater number of primary tumors, numerous incidences continue to occur in which imaging studies fail to locate the primary tumor site. Although criticized for high false positive rate in BC diagnosis, the role of magnetic resonance imaging (MRI) is crucial in the investigation of OBC. Its sensitivity for detecting the disease is 70 to 86% [3-5]. This case reveals an unexpected OBC in a patient with predominantly adipose breasts, with only a few scattered areas of fibroglandular density tissue (BI-RADS® breast composition B), in which the mammographic sensitivity is approximately 90% for the diagnosis of primary breast cancer.

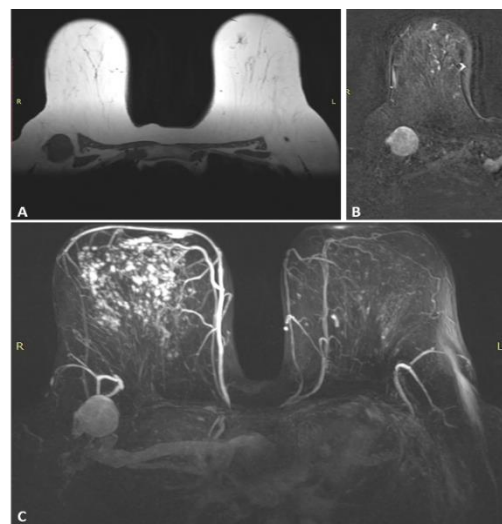
## Case Report

A 69-year-old patient underwent screening mammography, that showed the presence of right axillary atypical lymph node (LN), without breast lesion, leading to further investigation (Figure 1). Clinically, she had palpable axillary LN. The admission ultrasound (US) suggested metastatic disease with atypical LN, without breast lesion. US-guided biopsy revealed invasive ductal carcinoma. Immunohistochemistry was positive for HER2 and negative for estrogen and progesterone receptors, suggested being an OBC with axillary nodal metastasis. Further investigation including a MRI of the breast confirmed right axillary lymphadenopathy and also demonstrated a heterogeneous non mass enhancement area, extending for about 50% of the right breast (Figure 2). Therefore, a second look US was performed and a breast suspicious lesion was located. A biopsy proved the location of the primary tumor site (Figure 3).

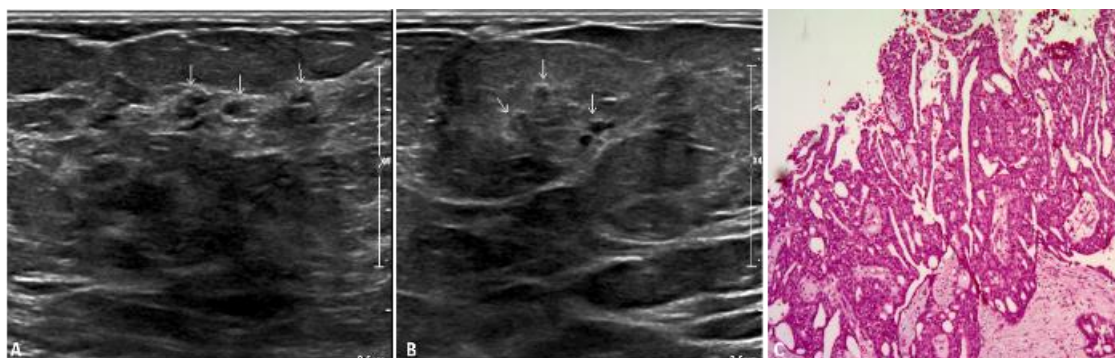
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**Figure 1: A & B)** Screening mammography shows an axillary lymph node on the right, hyperdense and enlarged (4.0 cm) and breast with scattered areas of fibroglandular density tissue, without any radiological signs of malignancy.



**Figure 2: MRI shows: A)** T1-weighted image shows a 4.0 cm, enlarged LN with loss of the fatty hila in the right axilla and **B)** early and heterogeneous enhancement after gadolinium administration. **C)** Maximum intensity projection (MIP) image of contrast-enhanced MRI shows regional and heterogeneous non mass enhancement in the right breast, involving the medial breast as well as the upper outer quadrant, BI-RADS category 4.



**Figure 3: A & B)** Second look US shows heterogeneous focal area (non mass lesion) with cystic areas at upper outer quadrante (arrows). **C)** Biopsy revealed invasive ductal carcinoma.

## Discussion

When metastatic tumors are detected in the axillary lymph nodes, 90% of the primary lesions of origin are breast tumors; other possible primary lesions include melanoma, lymphoma, lung cancer, thyroid cancer, gastrointestinal adenocarcinoma, and ovarian carcinoma [6]. Histological examination of the axillary lymph nodes is critical for diagnosis; the primary lesion can be diagnosed as breast cancer if estrogen receptor expression is detected by immunohistochemical staining [7]. OBC is an uncommon presentation of a common disease and even in cases of breasts composition B of BI-RADS®, the role of MRI stands out, proving to be a useful and powerful tool that increases the chance of detection and predicts local extension disease, thus contributing to better therapeutic planning. Finally, breast biopsy remains essential for diagnostic confirmation and second look US should be the preferred method for its guidance, in the presence of a positive correlation between imaging methods.

## Conflicts of Interest

None.

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