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Case Report

Recurrent breast cancer diagnosis delayed by COVID-19 pandemic [☆]

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ABSTRACT

We describe the case of a 64-year-old female with a no relevant medical history. Screening mammography in March 2020 demonstrated calcifications in the right breast, and a diagnostic mammogram was recommended. In the months that followed, the patient experienced tissue changes in the right breast but avoided returning to the facility as the COVID-19 pandemic worsened. The patient returned for a diagnostic mammogram in September of 2020, which indicated suspicious lymph nodes and an increase in calcifications. Further analysis through ultrasound-guided core biopsy ultimately led to a right mastectomy and lymph node biopsy, which were performed in October 2020. Pathology results confirmed the diagnosis of invasive ductal carcinoma with lobular features.

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Case Report

A 64-year-old female presented for routine screening mammography in March 2020. No relevant family or medical history was discerned. The patient is a non-English speaking immigrant to the United States and is cared for by her English-speaking adult daughter. Calcifications were visible in the inferior medial quadrant of the right breast, 8 cm from the nipple (Fig. 1A and B). The screening mammogram was assessed a BI-RADS category 0 with recommendation for a diagnostic right mammogram to include magnification images. Due to concerns about potential COVID-19 exposure, the patient and her family avoided returning to the breast clinic for 6 months. During this time period, the patient developed a palpable abnormality in the same breast.

In September 2020, the patient returned for a diagnostic mammogram of the right breast, which again demonstrated the calcifications in the inferior medial quadrant of the right breast. However, additional amorphous calcifications were now noted at 1:00 in the superior medial quadrant of the right breast, 3 cm from the nipple (Fig. 2A and B). Thickening of the skin and Cooper's ligaments was observed. Additionally, right axillary lymphadenopathy was noted. An ultrasound indicated an irregular, spiculated mass (2.3 × 1.6 × 1.8 cm) in the superior right breast at 12:00, 1 cm from the nipple (Fig. 3A and B). This mass correlated with the palpable abnormality. Axillary nodes displayed features suspicious for metastasis, including cortical thickening and diminished fatty hila (Fig. 4). The diagnostic mammogram and ultrasound was given a BI-RADS category 5 assessment with recommendation for an ultrasound-guided core biopsy of the mass at 12:00, 1 cm from the nipple, and fine needle aspiration of at least one suspicious axillary lymph node. The ultrasound-guided biopsy was performed, indicating invasive ductal

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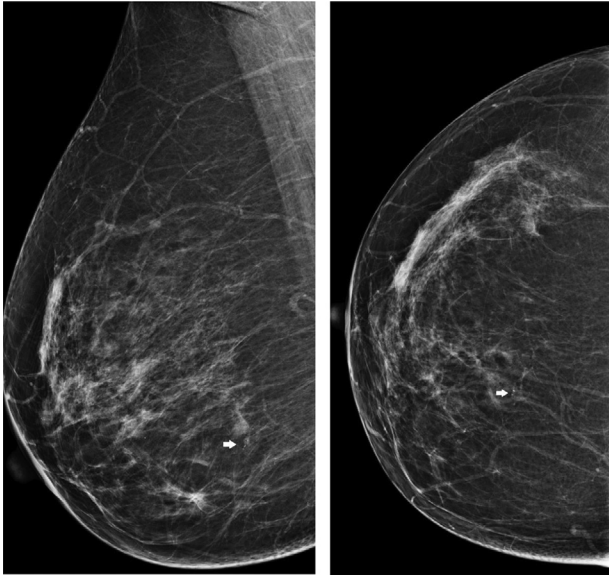


Fig. 1 – (A, B) Screening mammogram March 2020. MLO and CC views demonstrate calcifications in the right lower inner quadrant, 8 cm from the nipple (arrow). BI-RADS 0 assessment was given and a recommendation for diagnostic mammography was provided.

carcinoma with lobular features (IDC-L). Immunohistochemistry revealed the mass to be estrogen receptor-positive (ER 95%), progesterone receptor-positive (PR 90%), and HER 2 oncogene-negative (Her2-). The ultrasound-guided fine

needle aspiration of the axillary lymph node revealed a metastatic positive lymph node.

The patient underwent a right mastectomy with removal of 9 adjacent lymph nodes in October 2020. The tumor identified on ultrasound was found to measure 28 mm (T2) with associated ductal carcinoma in situ (DCIS). Two of the lymph nodes were positive (cN1a). Positive skin and lymphovascular invasion was noted. The final pathology report confirmed the diagnosis of IDC-L. Subsequently, the patient underwent adjuvant chemotherapy with Taxotere and Cytoxan (docetaxel and cyclophosphamide).

Discussion

Invasive ductal carcinoma (IDC) occurs when malignant epithelial cells proliferate beyond the borders of the mammary ducts. When malignant cells originating in the milk glands spread to other areas of the breast, invasive lobular carcinoma (ILC) is present. IDC-L has features of both IDC and ILC and accounts for 5% of breast cancer diagnoses [1]. The incidence of IDC-L increased 1.96-fold between the years of 1987 and 1999 [2].

Many of the classic breast cancer symptoms are observed in cases of IDC. These include one or more distinct, palpable lumps in the breast or axilla, nipple discharge, and thickened, dimpled or reddened skin [3]. By contrast, ILC typically results in a more diffuse, swollen area within the breast or axilla, often accompanied by nipple inversion [4]. The low density of this carcinoma makes it more difficult to identify lobular fea-

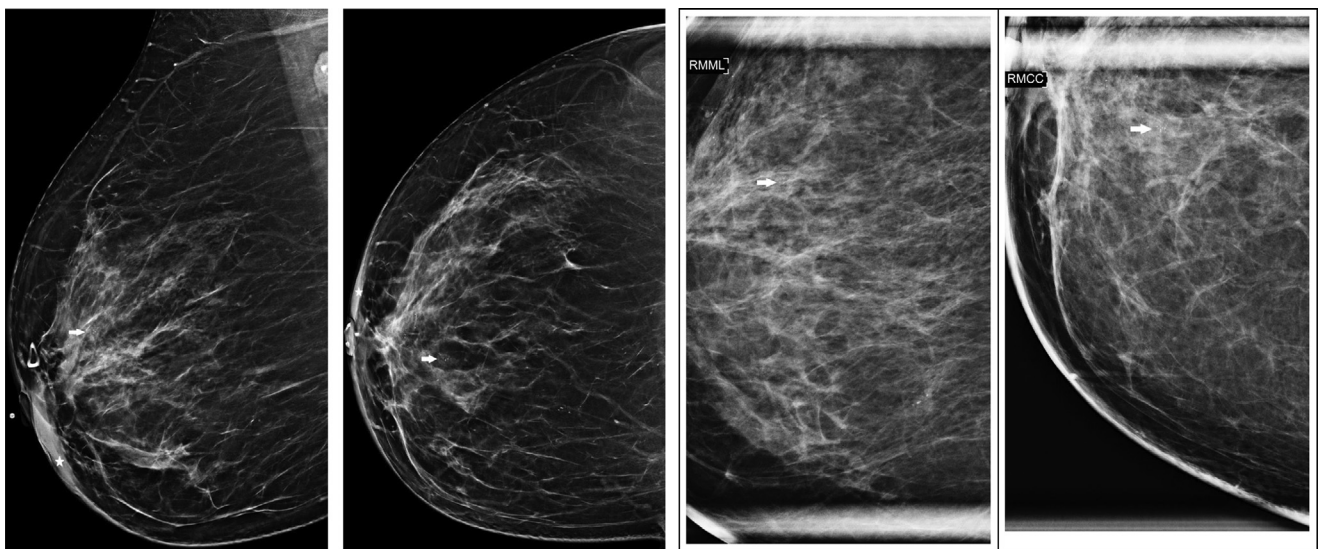


Fig. 2 – (A, B) Diagnostic mammogram September 2020. MLO and CC views again demonstrate the original calcifications in the lower inner quadrant, 8 cm from the nipple. However, additional worrisome, amorphous calcifications are noted at 1:00 3 cm from the nipple (arrow). A palpable abnormality is noted by the skin triangle marker. Skin thickening is indicated in the periareolar region (star). Axillary lymphadenopathy is partially visualized on the MLO view. C-D: Diagnostic mammogram September 2020. Magnification ML and CC views demonstrate the amorphous calcifications at 1:00 3 cm from the nipple (arrow).

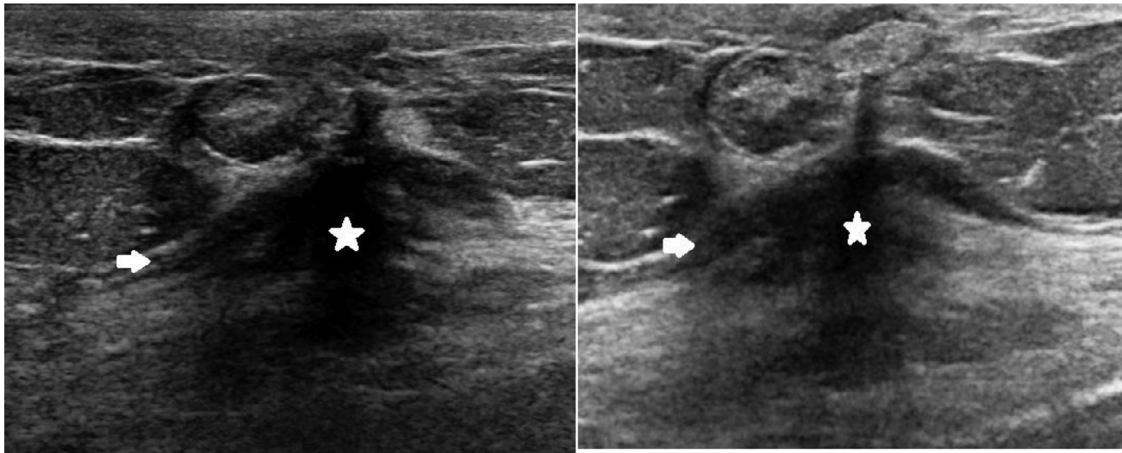


Fig. 3 – (A, B) Diagnostic ultrasound from September 2020 demonstrates an irregular mass (star) with spiculated margins (arrow) measuring 2.3 x 1.6 x 1.8 cm at 12:00 1 cm from the nipple, corresponding to the patient's palpable finding. Posterior shadowing is also observed.

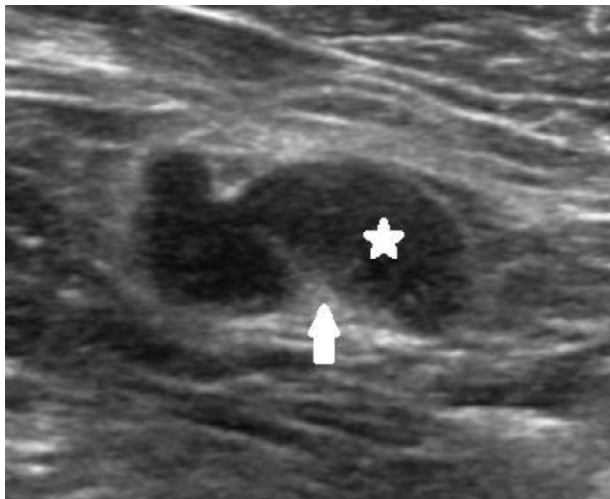


Fig. 4 – Diagnostic axillary ultrasound from September 2020 demonstrates a suspicious right axillary lymph node with a thickened cortex (star) and a diminutive, thinned hilum (arrow).

tures with imaging; mammography may fail to identify up to 30% of cases [5].

After imaging and biopsy studies were completed, mastectomy and final pathology studies were able to proceed. Once the patient's tumor was established to be Her2-, docetaxel, and cyclophosphamide (TC) were initiated as standard adjuvant chemotherapy [6]. Following treatment, disease-free survival (DFS) rates for IDC-L have been approximated via meta-analysis to be 90.4% at 5 years and 81.0% at 10 years [1].

As COVID-19 began to spread throughout the United States in the spring of 2020, mammography rates fell by up to 94% [7]. Patients who had already received a breast cancer diagnosis

also experienced delays in their care. In a survey conducted in May 2020, 79% of cancer patients reported that some aspect of their treatment had been postponed [8]. Among those with a breast cancer diagnosis in another survey, 44% stated that at least one aspect of treatment had been delayed, with younger age being a significant variable [9]. Even after many healthcare facilities were reopened, patients weighed two potential concerns when making decisions - exposure to COVID-19 in the clinic or hospital setting and progression of cancer if treatment did not promptly proceed. As illustrated by the patient described in this report, the COVID-19 pandemic has resulted in cancer being diagnosed later and at more advanced stages. This upstaging, combined with delayed initiation of cancer therapy, is predicted to result in an additional 10,000 deaths from breast and colorectal cancer over the next 2 years [10].

Immigrant, minority, and non-English speaking patients are particularly vulnerable. Disparities between white and African American breast cancer patients have been well-documented and are now anticipated to grow in the wake of the pandemic. For example, African American breast cancer patients are more likely to be diagnosed at Stage II or higher (65% vs 48% of white patients) and have a higher 5-year disease-related mortality rate (17% vs 11% for white patients) [11]. In March 2020, recommendations for surgical delay in breast cancer patients were issued by the American College of Surgeons (ACS), the Society of Surgical Oncology (SSO), and the American Association of Breast Surgeons (ASBrS). While unavoidable due to strained resources early in the pandemic, the delay in surgical care may further increase outcome differences between African American and white patients. As elective surgeries resume, the COVID-19 Pandemic Breast Cancer Consortium has updated guidelines for prioritizing patients for surgical procedures to account for disease extent, comorbidity factors, and risk of developing COVID-19 [12]. Patients with suspicious screening results or a cancer diagnosis should continue care with a health care provider even with the ongoing pandemic, and providers should consider social determinants of health in treatment.

Patient Consent

Written, informed consent was obtained from the patient featured in this case report.

Informed Consent

The patient described in this case report provided her informed consent.

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