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Case Report

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Solitary Pectoral Metastasis in Occult Invasive Lobular Carcinoma

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Abstract

Invasive lobular carcinoma is a common subtype of breast cancer diagnoses, accounting for up to 15% of breast cancer cases. Occult breast cancer is a rarer subset, accounting for 0.1-1% of cases and usually manifests as axillary lymph node metastases from a malignant primary breast carcinoma in the absence of a clinically or radiologically assessable breast lesion.

This case report provides a unique insight into a patient with an occult primary invasive lobular carcinoma with solitary metastases to the ipsilateral pectoral muscle, without features of axillary lymph node involvement or distant metastatic spread. This case also reiterates the challenges faced when managing occult breast cancer.

Keywords: *Occult breast cancer, Breast Surgery, Metastatic disease.*

Introduction

Invasive lobular carcinoma (ILC) is a common subtype of breast cancer diagnoses, accounting for up to 15% [1] of breast cancer cases. Treatment of ILC involves some combination of surgical intervention, radiotherapy and medical therapy. Occult breast carcinoma (OBC) is a rarer subset of breast cancers with incidences ranging from 0.1-1% [2]. OBC typically have no clinical or radiological signs of a primary breast lesion and usually manifest themselves as axillary lymph node metastases and because of this are either not amenable to immediate surgical therapy or require more substantial intervention such as mastectomy and axillary lymph node clearance.

Most cases of ILC are positive for both oestrogen receptor (ER) and progesterone receptor (PR) and typically are associated with negative overexpression of HER2. ILC also tend to have a low Ki-67 proliferation index.

Case Presentation

A 74-year-old woman was referred to the Breast Clinic from her General Practitioner with a 2-month history of worsening left-sided nipple retraction. She had not had nipple or breast changes before this and was regularly undergoing breast screening as part of standard statewide screening program, without prior mammographic abnormalities. Her past medical history included osteoporosis and hypertension. She had no personal or family history of breast or ovarian cancer.

On initial examination, there was obvious left-sided nipple retraction (*Figure 1*) with no palpable breast or axillary masses bilaterally. A mammogram and breast ultrasound were performed prior to assessment in the surgical Breast Clinic. These did not detect any significant abnormalities apart from some generalised increased left breast parenchymal enhancement in the middle and posterior third, extending into the left axillary tail. There was no evidence of axillary lymphadenopathy. The breast density was calculated as BIRADS B.

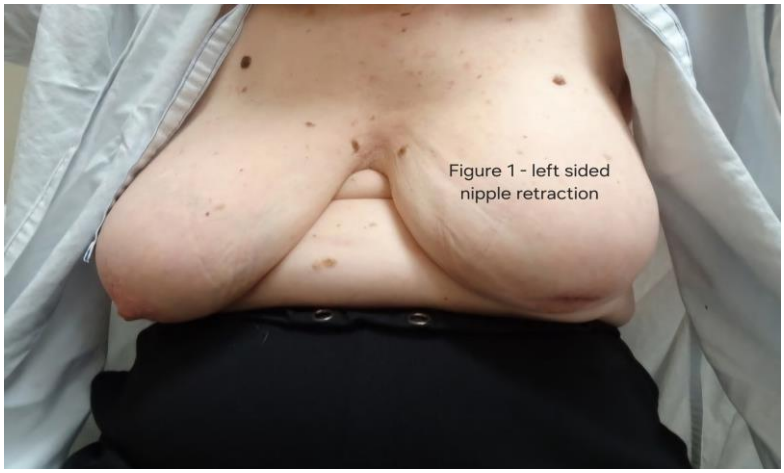
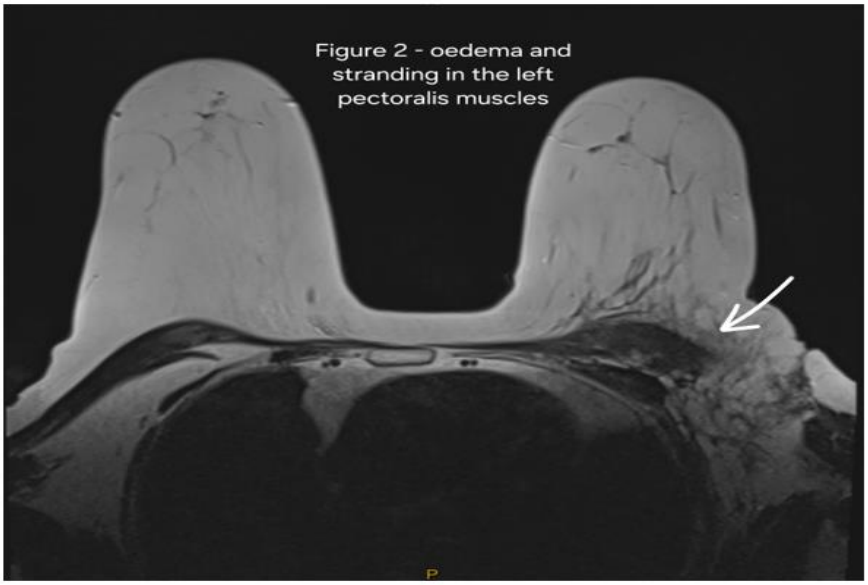
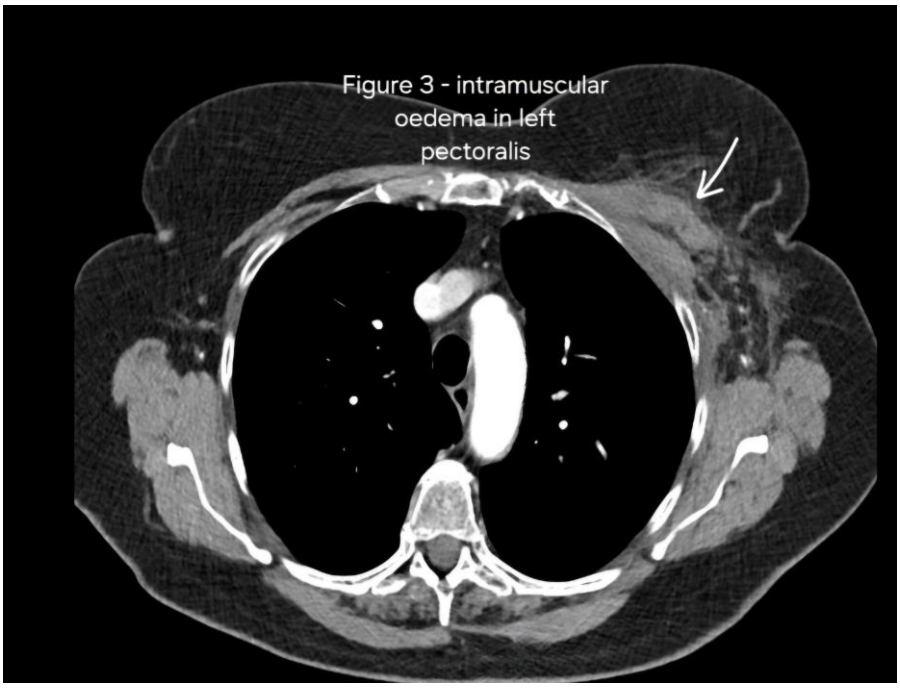


Figure 1 - left sided nipple retraction

Magnetic resonance imaging of the breasts was performed and revealed significant oedema and inflammatory changes in the lateral left breast and left pectoralis muscles, without convincing evidence of a breast or axillary lesion *(Figure 2).*



Further imaging with computed tomography (CT) of the chest was suggested by the radiologist, which revealed persistent oedema and stranding in the posterior one-third of the left breast extending to the upper outer quadrant and left axilla with again no evidence of a left breast or axillary lesion. There was also ongoing intramuscular oedema in the left pectoralis muscles (*Figure 3*). Biochemical results showed no significant rise in the inflammatory markers but there was associated hypochromic, normocytic anaemia.



The patient's case was taken to a multidisciplinary team discussion, and several differential diagnoses were drawn; an inflammatory process such as myositis, underlying rheumatological disease, possible lymphoma or an underlying breast malignancy. The decision was made to perform a left-sided pectoral muscle biopsy to achieve a confirmed diagnosis.

Several core biopsies were taken, and subsequent histopathological assessment revealed an invasive lobular carcinoma with the following immunophenotype: ER positive, PR negative, Ki-67 proliferative index of 10% and HER2 negative. Formal staging was performed with CT scan of the chest, abdomen and pelvis as well as a whole-body bone scan and were both normal with no evidence of distant metastatic disease.

Positron emission tomography (PET)-CT revealed the primary tumour in the left pectoralis demonstrating a very low avidity metabolic signature and as such this made the interpretation of distal metastatic disease more difficult.

Due to the advanced nature of the disease the cancer was deemed unresectable. The patient was recommended for adjuvant endocrine therapy and started on an aromatase inhibitor and she was also referred to medical oncology for consideration of systemic treatment. The patient was started on an oral cyclin dependent kinases (CDK) 4 and 6 inhibitor. The patient has

successfully completed 11 cycles so far and has ongoing follow up and treatment with the medical oncology team. Repeat CT imaging of the chest was performed 6 months into her treatment, which revealed stable non-quantifiable disease in the left pectoral muscles.

Discussion

This case highlights the difficulties faced by clinicians when diagnosing and managing occult breast cancers. ILC is difficult to determine mammographically but will often show a mass lesion on subsequent imaging modalities, with emergence of newer modalities including oestrodial-based PET scans [3]. ILC with pectoralis metastasis is very rare [4], especially with no discernible lesion in the breast or axilla despite multiple imaging modalities, which is the unique factor in this case.

Invasive lobular carcinomas typically have a different metastatic profile when compared to their ductal counterparts. Whilst both usually metastasise to lymph nodes, liver and bone at similar rates, ILCs have a higher prevalence for spreading to the gastrointestinal tract, genitourinary tract, the peritoneum and retroperitoneum, central nervous system and other sites including the subcutaneous tissues, central nervous system and bone marrow [5,6]. ILC tend to have a higher distant metastasis rate due to their invasive nature and histopathological appearance.

ILC have a more diffuse growth pattern that subtly alters the surrounding tissue's normal architecture, which leads to making them more difficult to find clinically or radiologically [7]. This is secondary to genetic changes in the CDH1 gene that codes for a protein called E-cadherin, which is necessary for cell adhesion and the promotion of normal tissue structures. 85-95% of ILC have the loss of this E-cadherin protein expression. This ultimately promotes invasion and metastases. Histologically, linear strands of cells in single files are the hallmark feature of ILC. This makes the diagnosis of ILC difficult on conventional mammography as the cancer infiltrates normal breast tissue without causing significant architectural disturbance.

There is still a lot of controversy regarding the management of OBC [8]. Treatment is generally split into two groups: systemic and locoregional. Invasive lobular carcinomas typically can be quite resistant to traditional chemotherapy regimens. The usual mainstay of systemic treatment involves a combination of hormone therapy alongside CDK4/6 inhibitors, which commonly provides an overall better rate of survival and response to treatment [9]. Given that OBCs are typically associated with ipsilateral axillary lymph node metastases, the first role in surgical management is the performance of an axillary lymph node clearance (ALNC). The two most common surgical pathways demonstrated in the literature are total mastectomy and ALNC versus whole breast radiotherapy and ALNC. The prognosis can vary between these groups [10]. A meta-analysis by Macedo et al. [11] concluded that there was no significant difference in the survival outcomes of patients who underwent ALND and mastectomy versus those who underwent ALND and radiotherapy. The study also found that adjuvant radiotherapy also improved the rates of locoregional recurrence and mortality rates among patients receiving ALND. Overall, pointing towards that ALND and radiotherapy may be the superior surgical options amongst this patient group.

Conclusion

This case provides a unique insight into an unusual metastatic profile of occult ILC. Although OBC is a well-known clinical conundrum that has been extensively described in the literature, many clinicians still face obstacles in their prompt diagnosis and management. Luckily, this patient seems to be somewhat responding to treatment with no obvious increase in disease burden on her follow up imaging.

Consent and declarations

Written informed consent was obtained from the patient for publication of this case report and accompanying images. This work has been reported in line with the SCARE criteria [12] and the PROCESS criteria [13]. There are no of declarations or conflicts of interest.

References

1. Du T, Zhu L, Levine K, Tasdemir N, Lee A, Vignali D, et al. (2018). Invasive locular and ductal breast carcinoma differ in immune response, protein translation efficiency and metabolism. Sci Rep. 8(1):7205. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC5940770/
2. Zhang D, Zhai J, Li L, Wu Y, Ma F, et al. (2022). Prognostic Factors and a Model for Occult Breast Cancer: A Population-Based Cohort Study. J Clin Med. 11(22):6804. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC9698700/
3. Wallace M, Tavaba A, Leon A, Maimone S, Letter H. (2025). A case of invasvice lobular carcinoma, highlighting the emerging role of ^{18}F-Fluoroestradiol-PET. Radiology Case reports. 20(10):5172-5177. Available from: https://pubmed.ncbi.nlm.nih.gov/40761268/
4. El-Samawi O, Satei A, Miller P. (2025). Invasive lobular carcinoma with metastasis to the pectoralis muscle. Radiology Case Reports. 50(6):3129-3133. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC12000696/
5. Borst M, Ingold J. (1993). Metastatic patterns of invasive lobular versus invasive ductal carcinoma of the breast. Surgery. 114(4):637-41. Available from: https://pubmed.ncbi.nlm.nih.gov/8211676/
6. He H, Gonzalez A, Robsin E, Yang W. (2014). Distant Metastatic Disease Manifestations in Infiltrating Lobular Carcinoma of the Breast. American Journal of Roentgenology. 2022(5):1140-1148. Available from: https://pubmed.ncbi.nlm.nih.gov/24758672/
7. Christgen M, Cserni G, Floris G, Marchio C, Djerroudi L, et al. (2021). Lobular Breast Cancer: Histomorphology and Different Concepts of a Special Spectrum of Tumors. Cancers (Basel). 13(15):3695. Available from: https://pubmed.ncbi.nlm.nih.gov/34359596/
8. Wang R, Yang H, Chen J, Huang J, Lv Q. (2023). Best treatment options for occult breast cancer: A meta-analysis. Front Oncol. 13:1051232. Available from: https://pubmed.ncbi.nlm.nih.gov/37251927/
9. Gao J, Cheng J, Bloomquist E, Sanchez J, Wedam S, Sing H, et al. (2020). CDK4/6 inhibitor treatment for patients with hormone receptor-positive, HER2-negative, advanced or metastatic breast cancer: a US Food and Drug Administration pooled analysis. Lancet Oncol. 21:250–260. Available from: https://pubmed.ncbi.nlm.nih.gov/31859246/

10. Sohn G, Son B, Lee S, Kang E, Jung S, et al. (2015). Treatment and survival of patients with occult breast cancer with axillary lymph node metastasis: A nationwide retrospective study. J Surg Oncol. 25(4):225–6. Available from: https://pubmed.ncbi.nlm.nih.gov/24863883/
11. Macedo F, Eid J, Flynn J, Jacobs M, Mittal V. (2016). Optimal Surgical Management for Occult Breast Carcinoma: A Meta-analysis. *Ann Surg Oncol*. 23(6):1838–1844. Available from: https://pubmed.ncbi.nlm.nih.gov/26832884/.
12. Agha R, Borrelli M, Farwana R, Koshy K, Fowler A, et al. (2018). The SCARE 2018 Statement: Updating Consensus Surgical CAse REport (SCARE) Guidelines, International Journal of Surgery. 60:132-136. Available from: https://pubmed.ncbi.nlm.nih.gov/30342279/
13. Agha R, Borrelli M, Farwana R, Koshy K, Fowler A, et al. (2018). The PROCESS 2018 Statement: Updating Consensus Preferred Reporting Of CasE Series in Surgery (PROCESS) Guidelines. International Journal of Surgery. 60:279-282. Available from: https://pubmed.ncbi.nlm.nih.gov/30359781/