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Case Presentation

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# Bilateral Metachronous Invasive Lobular Breast Cancer with Pulmonary Metastasis in an Elderly Male: The First Case in Saudi Arabia

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## Abstract

**Introduction:** The occurrence of bilateral metachronous invasive lobular breast cancer in men is infrequent, considering that male breast cancer itself is found in less than 1% of all breast cancer cases, and bilateral cases are even less common. To our knowledge, this is the first case reported in Saudi Arabia.

**Case presentation:** This is a 62-year-old male who presented to the general surgery clinic complaining of a left breast lump for 4 years, and an inverted nipple 2 years ago, respectively. The patient underwent breast ultrasound, revealing a Left breast lesion classified as (BIRAD4 b). The mammography was not done because he had a flat chest. Tru-cut biopsy indicated left invasive breast cancer, ER&PR positive, and HER2 negative. The patient underwent a left breast mastectomy on August 8, 2024. Unfortunately, the patient missed several

appointments, and a few weeks later, then presented with a lump, felt retroareolar. The subsequent evaluation through the breast Ultrasound showed a right breast lesion classified as (BIRAD4) and highly suspicious right axillary lymphadenopathy. Then the patient underwent a right breast mastectomy and Sentinel lymph node biopsy (SLNB) on January 1st, 2025.

**Discussion**: Gynecomastia is a common benign condition resulting in expansion of glandular breast tissue in men, usually because of increased estrogen and reduction in androgen activity. It can usually be thought of clinically as a palpable, firm subareolar mass, which can be unilateral or bilateral. Gynecomastia can be physiological, when it happens most frequently, for example, during neonatal life or puberty, and because of aging. Gynecomastia may also be secondary to pathological condition. Physiological causes include endocrine disorders, systemic disorders (e.g. liver cirrhosis, renal failure), medication (e.g., antiandrogens, spironolactone, antipsychotics), and malignancy. In general, gynecomastia is a benign condition, however, a detailed evaluation is required to exclude male breast cancer, even though the prevalence of cancer in men with gynecomastia is rare. Thus, further evaluation is warranted, particularly in older men or men with other risk factors. An understanding of the underlying etiological factors and clinical context is critical to definitive diagnosis and treatment**.** Although gynecomastia itself is common and generally non-malignant, A large epidemiological study found no direct evidence that gynecomastia increases the risk of developing MBC.

**Conclusion:** In this case, the Compliance involves follow-up with History and physical examination every 6 months for 5 years, then annually, and genetic counseling and hormonal therapy with radiation management are significantly stressful to the patient.

**Keywords:** Male; Bilateral; Breast cancer; Invasive lobular carcinoma; Metachronous

## Introduction

Male breast cancer is a rare clinical entity, accounting for less than 1% of all breast cancer worldwide. The Saudi cancer registry recently reported only 54 cases of male breast cancer, accounting for 0.6% across the country in its most recent report in December 2022, which is consistent with its low incidence in the country [1]. Anatomically, the male breast lacks lobular acini, and therefore Invasive Lobular Carcinoma (ILC) is an exceedingly rare histological type, accounting for only 1-2% of male breast cancer. The pathogenesis and clinical behavior of men's ILC are unclear due to its rarity. We present a unique and rare case of bilateral metachronous male breast cancer, with right-sided invasive lobular carcinoma and left-sided invasive lobular mixed-type carcinoma [2,3].

## Case Presentation

Our patient is a 62-year-old male who presented with a left breast lump for 4 years and an inverted nipple 2 years back, respectively, with no skin changes and no nipple discharge. The patient had a history of bilateral gynecomastia since childhood. No significant past medical illness. No family history of breast cancer or other types of malignancy. On examination, there is bilateral gynecomastia, with nipple–areolar complex inverted, and a retroareolar lump partially mobile, not attached to the chest wall. No abnormality was detected in the left axilla. The patient worked up thoroughly, and a breast ultrasound showed the left

breast, which was a partially ill-defined oval-shaped micro-lobulated hypoechoic solid mass lesion retroareolar, with underlying acoustic enhancement. It shows internal echogenic foci (?? Micro calcifications) and measures about 25.9 x 18.1 mm. The lesion (BI-RAD 4b), let axillary enlarged lymph nodes are seen, some of them is globular in shape with lost their fatty hilum. Tru-cut biopsy of invasive breast carcinoma. The patient underwent of left breast mastectomy on August 8, 2024, the patient was admitted one day for observation post-op day one drain was removed then the patient was discharged home to be followed up ten days later in the clinic. Histopathology examination revealed left breast Invasive Lobular breast cancer mixed pattern 5.2*2.5 cm Grade 2, pT3N0, nipple with Paget's disease, complete resection (R0), positive lymph vascular invasion. The patient was referred to oncology for further management. Unfortunately, the patient missed several appointments, and a few weeks later, the patient presented me with a metachronous lesion in the right breast during further workup of the breast Ultrasound. The right breast was enlarged and showed an ill-defined hypoechoic lesion measuring about 16 x 20 mm and is surrounded by hyperechoic fibrous tissue. Multiple ovals and rounded-shaped right axillary lymph nodes (the largest measures about 20 mm) showing loss of hilum. CT CAP showed multiple pulmonary metastases. The patient consented to the right breast mastectomy and Sentinel Lymph Node Biopsy (SLNBs) on January 1st, 2025. Intraoperatively, we found only one lymph node with blue dye, and by visual inspection and examination, there was no other abnormal lymph node found. After ten days, histopathology revealed invasive cancer in the right breast with a mixed pattern, G2, positive lymph vascular invasion, complete resection, and pT3N1a. The patient was referred to the genetic and oncology center for further management.

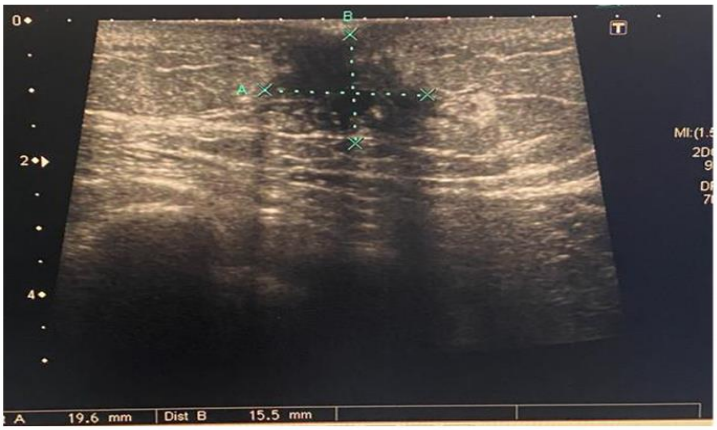


**Figure 1:** Breast ultrasound showed a lesion around 1.9 * 1.5 cm.

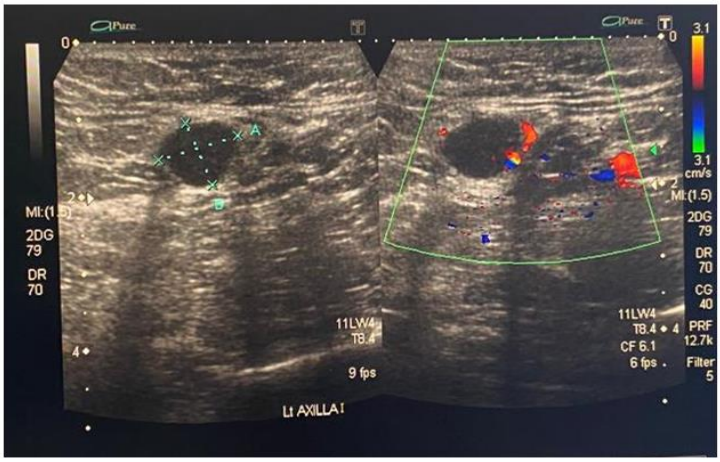


**Figure 2:** Left axillary lymph node involvement.

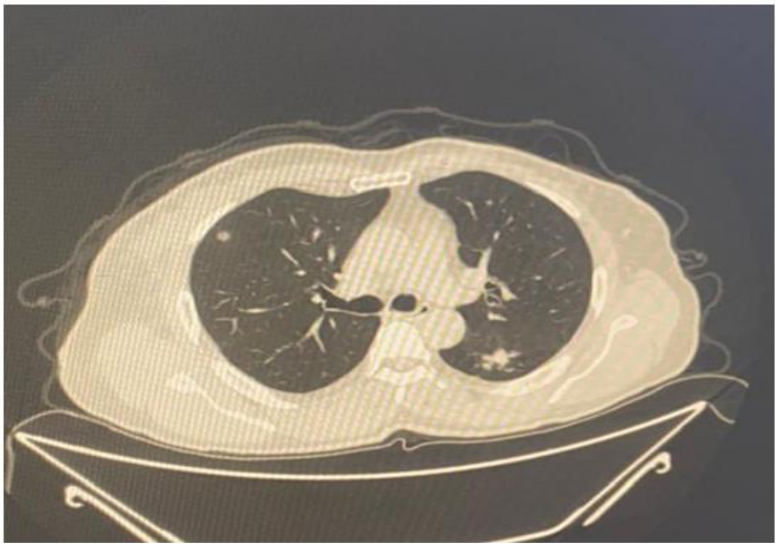

**Figure 3:** CT CAP showed multiple pulmonary metastasis.

## Discussion

Most male bilateral breast cancers tend to be synchronous. Literature on metachronous bilateral ILC in men is extremely sparse, with few cases documented worldwide [4]. According to a systematic review by Senger et al., the management of such cases should follow principles like female breast cancer due to the lack of male-specific clinical trials [4]. Male breast cancer is an uncommon condition, making up less than 1% of all breast cancer instances worldwide, with Invasive Lobular Carcinoma (ILC accounting for merely 1–2% of male cases because male breasts lack lobular structures [5]. The occurrence in Saudi Arabia is even lower, with only 54 cases documented across the country in the most recent 2022 Saudi Cancer Registry. The present case is particularly important as, to the best of our knowledge, it is the first reported case of bilateral metachronous ILC in a Saudi male, reiterating a remarkable clinical manifestation. The late

presentation to medical seeking, as observed in our patient reported having the mass for four years, may represent a similar pattern as in MBC, in which stigmatization, poor knowledge, and misdiagnosis of the disease lead to a delay in diagnosis [6,7]. This highlights the need for public awareness and healthcare provider education to have a high index of suspicion, even in men with risk factors or long-standing gynecomastia. For histopathology, the diagnosis of ILC in men is extremely rare. ILC is characterized by small, uniform cells infiltrating the stroma in a single-file pattern, often lacking E-cadherin expression—a finding more frequently observed in women [8,9]. The diagnostic process is further challenged by the limited availability of immunohistochemical testing in some centers, as was the case with our patient's initial biopsy [10,11]. The bilateral and metachronous nature of this case (i.e., cancers occurring at different times in each breast) adds another layer of rarity. Most male bilateral breast cancers tend to be synchronous. Literature on metachronous bilateral ILC in men is extremely sparse, with few cases documented worldwide. According to a systematic review by Senger et al., the management of such cases should follow principles like female breast cancer due to the lack of male-specific clinical trials. Our patient also presented with right axillary lymphadenopathy and later developed pulmonary metastasis, indicating disease progression, possibly due to delays in follow-up and systemic evaluation. This reflects the importance of adherence to follow-up plans and highlights the need for robust care coordination, especially in complex and rare oncological cases [12,13]. Surgical treatment remains the cornerstone in the management of MBC, with modified radical mastectomy commonly performed due to the limited volume of male breast tissue. Sentinel Lymph Node Biopsy (SLNB) was appropriately performed in our patient's second surgery to assess nodal involvement, aligning with current ASCO guidelines for male breast cancer management. Genetic counseling was advised, as up to 15–20% of MBC cases are associated with BRCA2 mutations. While our patient had no known family history, genetic testing could provide insight into potential hereditary risks, guide surveillance for secondary malignancies, and inform family members about their risk [14,15].

## Conclusion

This case revealed the extreme infrequency of bilateral metachronous invasive lobular carcinoma in men, which underlined the need for clinicians to exhibit early clinical suspicion, timely diagnostic work-up, and appropriate and adherence to follow-up in rare oncologic presentations to get improved outcomes. Because of the risk of late contralateral disease and metastases, long-term follow-up and a multidisciplinary approach is important. Further, all male breast cancer cases should involve genetic counseling and consideration for testing, regardless of family history, to guide personalized management and evaluate familial cancer risk.

## Highlights

- Bilateral metachronous male breast cancer with right invasive lobular cancer and left mixed type breast cancer.
- Male breast cancer accounts for less than 1% of all breast cancer cases, but its rarity does not diminish its significance.
- Raising awareness about male breast cancer, especially its rarer forms like bilateral breast cancer, is essential.

- Bilateral mastectomy and SLNBs and hormonal therapy post-surgery.
- Genetic counseling.

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