Atypical recurrence of invasive lobular breast carcinoma with hormone receptor loss: a Case Report

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INTRODUCTION

- **Invasive lobular carcinoma (ILC) is the second most common type of breast cancer and typically shows hormone receptor (HR) positivity.**
- Unlike ductal carcinoma, **ILC tends to metastasize later and to unusual sites** such as the peritoneum, gastrointestinal tract, and ovaries. These atypical patterns can mimic primary tumors of other organs, complicating diagnosis.

Late recurrences of ILC with loss of HR expression are rare and present additional challenges.

CASE DESCRIPTION



51-year-old premenopausal woman, ECOG performance status of 0

- No significant comorbidities and no regular medication.
- No significant family history of cancer.

1 2019

Diagnosis of mixed invasive carcinoma of the right breast:

- **Invasive lobular carcinoma** (ER 95%, PR 75%, HER2 2+ without ISH amplification, Ki67 10%)
- **Invasive carcinoma of no special type** (ER 10%, weak staining; PR 90%, HER2 0; Ki67 10%)

cT2N0M0 →  **The patient underwent breast-conserving surgery and sentinel lymph node biopsy.**

pT2N2aM0

7 metastatic lymph nodes out of 12 examined

Axillary lymph node dissection was performed, confirming persistent HR positivity

Adjuvant therapy was given:

- **Chemotherapy** with taxanes and anthracyclines.
- **Radiotherapy.**
- **Endocrine therapy planned for ten years**: initially tamoxifen for 15 months, followed by an aromatase inhibitor after menopause onset.

Long-term follow-up imaging remained negative for recurrence or metastasis.

2 2023

The patient developed pelvic pain.

Pelvic MRI — Suspicious bone lesions in the left iliac and L5 vertebra, a solid hypogastric mass (30×28 mm), and moderate peritoneal effusion.

FDG PET-CT and lumbar spine MRI — No clear evidence of malignancy.

The patient remained under surveillance.

3 April 2025

Screening colonoscopy — Sigmoid lesion → **BIOPSY**

Poorly cohesive carcinoma cells, with immunohistochemistry showing CK7+, GATA3++, ER–, HER2–, PD-L1–

Biopsy favored metastasis from prior lobular breast carcinoma despite complete loss of ER expression.

Pelvic MRI — Extensive pelvic-peritoneal disease involving the cervix, adnexa, and bilateral ureters, with associated hydronephrosis. Additional findings included suspected ovarian involvement and uterine leiomyomas.

Tumor markers — Elevated CA 15.3 and CEA

FDG PET-CT — No FDG-avid disease but confirmed mass effect on the ureters

Multidisciplinary tumor board:

Metastatic recurrence from the original ILC

First-line palliative chemotherapy with paclitaxel was proposed for HR-negative, HER2-negative, and PD-L1-negative disease.

The patient was also referred to urology

DISCUSSION

- This case shows a late recurrence of ILC with peritoneal involvement and loss of ER expression. **Although this metastatic pattern is consistent with ILC, loss of HR expression is rare.**
- **Loss of ER may reflect clonal evolution under long-term endocrine therapy**, leading to resistance and poorer prognosis. Peritoneal carcinomatosis mimicking gynecologic cancer delayed diagnosis, highlighting the **need for thorough histopathological and immunohistochemical evaluation.**
- **FDG PET-CT may miss low-metabolic lesions**, emphasizing the role of biopsy in unclear cases.

CONCLUSION

This case highlights the **need for long-term vigilance in ILC patients and the consideration of metastasis years after treatment**. It supports re-biopsy and pathological reassessment in atypical cases, especially when receptor status changes, underscoring the evolving biology of breast cancer and the importance of personalized management.

REFERENCES

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LEGEND

ECOG: Eastern Cooperative Oncology Group; ER: estrogen receptors; PR: progesteron receptors; ISH: In Situ Hybridization

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