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**Images of Interest / Imagens de Interesse**

# Retroperitoneal Metastasis from Lobular Carcinoma of the Breast

## *Metástases Retroperitoneais de um Carcinoma Lobular da Mama*

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**Abstract**

This is a case report of a 50-year-old woman with bilateral lobular breast carcinoma. Staging imaging revealed diffuse thickening of the retroperitoneal fasciae, involving both renal hila and resulting in bi-lateral hydronephrosis, as seen in MRI, along with metastatic bone involvement. Notably, FDG-PET-CT showed no increased metabolic activity in the retroperitoneum, where the thickening was seen on the MRI. Because of the indeterminate nature of the retroperitoneal thickening, an ultrasound-guided biopsy was performed, which confirmed metastatic involvement by invasive lobular carcinoma. The literature demonstrates that lobular carcinoma has a higher propensity to metastasize to the peritone-um, retroperitoneum and gastrointestinal tract, compared to invasive ductal carcinoma. This case re-port highlights the importance of the clinical manifestations and subtle radiological findings of perito-neal and retroperitoneal spread of ILC.

**Keywords**

Breast; Diagnostic imaging; Retroperitoneal space; Lobular Carcinoma; Medical oncology.

**Resumo**

O presente artigo relata o relato de caso de uma mulher de 50 anos com diagnóstico de carcinoma lobular de mama bilateral. A ressonância magnética realizada no contexto de estadiamento revelou espessamento difuso das fáscias retroperitoneais, envolvendo ambos os hilos renais e resultando em hidronefrose bilateral, juntamente com envolvimento ósseo metastático. A FDG-PET-CT não mostrou aumento da atividade metabólica no retroperitoneu, na localização das alterações em RM. Devido à natureza indeterminada do espessamento retroperitoneal, foi realizada biópsia guiada por ecografia, que confirmou envolvimento metastático por carcinoma lobular invasivo. A literatura demonstra que o carcinoma lobular tem maior tendência a metastizar para o peritoneu, retroperitoneu e trato gastrointestinal, comparado ao carcinoma ductal invasivo. Este relato de caso destaca a importância das manifestações clínicas da disseminação peritoneal e retroperitoneal da ILC, assim como das suas subtis manifestações radiológicas.

**Palavras-chave**

Mama; Diagnóstico por imagem; Retroperitoneu; Carcinoma lobular; Oncologia médica.

## Case Report

A 50-year-old woman presented with bilateral breast masses, which she had first noticed 18 months ago. Clinical examination revealed firm masses in both breasts, with skin invasion, nipple retraction, and palpable axillary lymphadenopathies. Mammography showed extensive, diffuse pleomorphic calcifications and diffuse architectural distortion in both breasts. The patient underwent ultrasound-guided core needle biopsies, which showed bilateral well-differentiated luminal A invasive lobular carcinoma with lymph node metastasis. FDG PET-CT was requested for distant staging, and abdominopelvic CT and abdominal MRI were performed for further clarification.

## Imaging Findings

FDG PET-CT revealed increased FDG uptake in both breasts, without evidence of distant metabolic changes (figure 1).
Additionally, abdominopelvic CT and abdominal MRI revealed diffuse thickening of the retroperitoneal

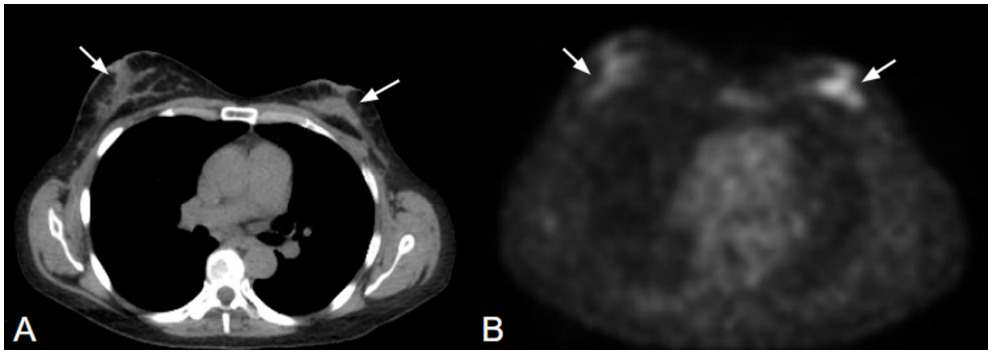



**Figure 1** – A,B: PET-CT. There is increased metabolic activity in both breasts (arrows), in keeping with bilateral tumor involvement by the ILC.

fasciae, involving both renal hila and resulting in bilateral hydronephrosis, with mild enhancement after contrast administration and without diffusion restriction. Diffuse bone metastases were also detected. Worth noting, neither of these findings exhibited increased metabolism on FDG PET-CT (figure 2).

An ultrasound-guided biopsy of the retroperitoneal thickening was performed (figure 2), which confirmed metastatic involvement by invasive lobular carcinoma.

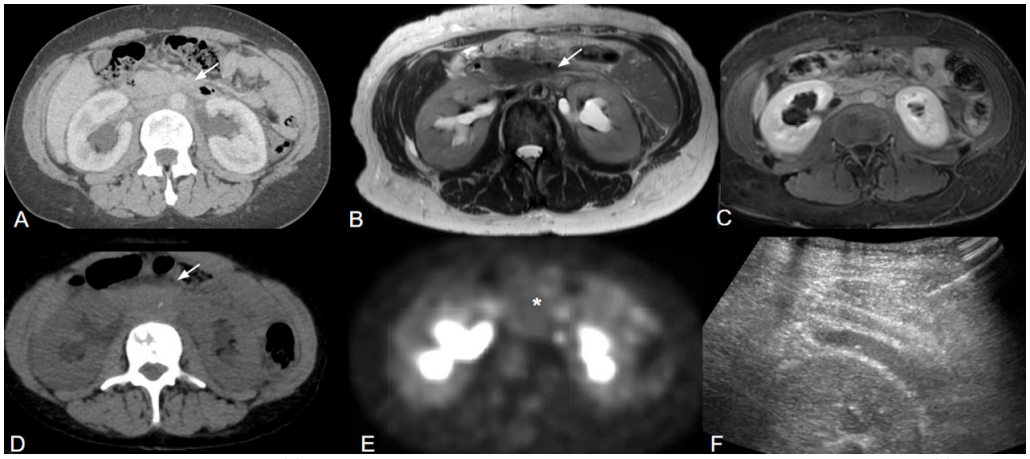



**Figure 2** – A: Axial Abdominal CT after contrast administration in the portal phase; B: Axial abdominal MRI in T2 non-fat suppressed sequence; C: Axial abdominal MRI in T1 sequence with fat suppression after gadolinium administration; D,E: FDG PET-CT; F:ultrasound-guided biopsy. There is diffuse thickening of the perirenal fasciae and of the retroperitoneal space involving the renal hilum (arrows), with dilatation of the proximal ureters, without significantly increased metabolism in PET-CT in this location (*), which was sampled by ultrasound-guided biopsy.

## Discussion

Invasive lobular carcinoma (ILC) is the second most common histological type of invasive carcinoma after invasive ductal carcinoma (IDC), accounting for 10–15% of all breast cancer.[1]

Among breast tumor histological subtypes, lobular carcinoma has a higher propensity to metastasize to the peritoneum, retroperitoneum and gastrointestinal tract, compared to IDC, which commonly spreads to lymph nodes, lungs and liver. Bone involvement rates are comparable between the two subtypes.[2]

Peritoneal involvement in lobular carcinoma often presents as a diffuse peritoneal infiltrative thickening, indistinct nodules, or omental cake, contrasting with the nodular pattern found in IDC. Retroperitoneal metastasis can lead to retroperitoneal fibrosis, causing hydronephrosis, as observed in this case.[2]

A notable feature in this case was the low FDG uptake in PET-CT imaging of metastatic disease, highlighting the importance of CT and MRI. Studies suggest that PET-CT is less effective in staging invasive lobular carcinoma compared to IDC,[3] attributed to decreased desmoplastic reaction due to loss of E-cadherin expression,[4] lower tumor cell density and proliferation, and higher hormone receptor expression.[5]

Another important aspect is the distinction between peritoneal metastases from breast cancer and peritoneal spread from a primary ovarian tumor, especially in patients with elevated risk for both tumors, such as those with BRCA1 and BRCA2 mutations. Bilateral solid ovarian tumors metastatic breast cancer, as opposed to primary ovarian malignancy, tend to have a mixture of solid and cystic components.[6]

This article aims to emphasize the importance of the subtle clinical manifestations of peritoneal and retroperitoneal spread of ILC, to prompt diligent imaging in the appropriate clinical setting and warn radiologists with a role in imaging patients with a history of ILC, as imaging findings could be subtle and easily missed.

**Ethical Disclosures / Divulgações Éticas**

*Conflicts of interest*: The authors have no conflicts of interest to declare.

*Conflitos de interesse*: Os autores declaram não possuir conflitos de interesse.

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*Suporte financeiro*: O presente trabalho não foi suportado por nenhum subsídio ou bolsa.

*Confidentiality of data*: The authors declare that they have followed the protocols of their work center on the publication of data from patients.

*Confidencialidade dos dados*: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

*Protection of human and animal subjects*: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

*Protecção de pessoas e animais*: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

**References**

1. Li CI, Anderson BO, Daling JR, Moe RE. Trends in incidence rates of invasive lobular and ductal breast carcinoma. JAMA. 2003;289:1421-4. doi: 10.1001/jama.289.11.1421. PMID: 12636465.

2. Winston CB, Hadar O, Teitcher JB, et al. Metastatic lobular carcinoma of the breast: patterns of spread in the chest, abdomen, and pelvis on CT. AJR Am J Roentgenol. 2000;175:795-800. doi:10.2214/ajr.175.3.1750795.

3. Bonnin D, Ladoire S, Briot N, et al. Performance of [18F]FDG-PET/CT imaging in first recurrence of invasive lobular carcinoma. J Clin Med. 2023;12:2916. doi:10.3390/jcm12082916.

4. Dabbs DJ, Schnitt SJ, Geyer FC, et al. Lobular neoplasia of the breast revisited with emphasis on the role of E-cadherin immunohistochemistry. Am J Surg Pathol. 2013;37:e1-e11. doi:10.1097/PAS.0b013e3182918a2b.

5. Jung NY, Kim SH, Choi BB, Kim SH, Sung MS. Associations between the standardized uptake val-ue of (18)F-FDG PET/CT and the prognostic factors of invasive lobular carcinoma: in comparison with invasive ductal carcinoma. World J Surg Oncol. 2015;13:113. doi:10.1186/s12957-015-0522-9.

6. Koyama T, Mikami Y, Saga T et al. Secondary ovarian tumors: spectrum of CT and MR features with pathologic correlation. Abdom Imaging. 2007;32:784-95. https:// doi. org/ 10. 1007/ s00261- 007- 9186-4.