

Metastatic cyclin D1 positive lobular breast carcinoma as a potential lymphoma mimicker

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A 60-year-old female presented with fatigue and pinpoint bruising on her legs and abdomen. Labs were consistent with severe pancytopenia and bone marrow aspiration and biopsy were performed to investigate the cause; however, flow cytometry studies could not be done due

to extensive clotting of the sample. Histopathological examination of the bone marrow biopsy cores revealed extensive infiltration of the bone marrow by poorly differentiated cells. These cells were arranged in single-file rows pattern ([panel A](#)) with large nuclei and marked

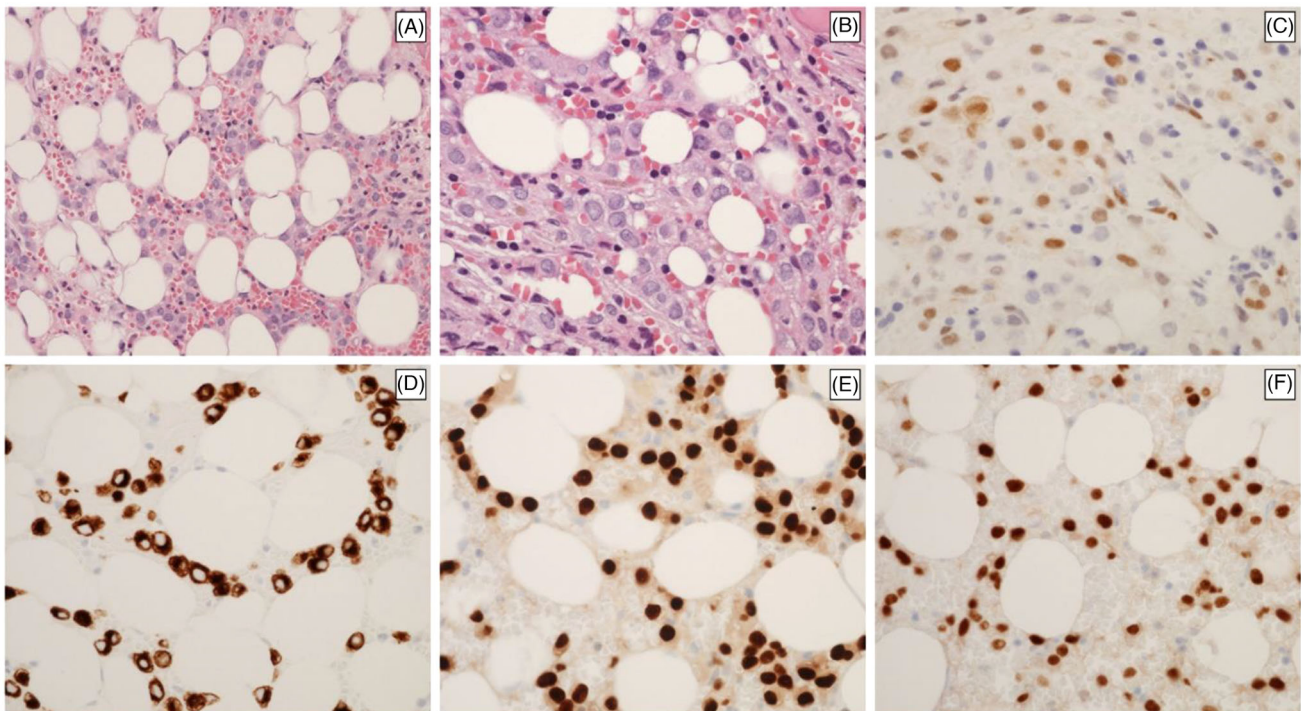


FIGURE 1 [Panel A](#): Hematoxylin and eosin stain, 200× magnification, 20× objective. [Panel B](#): Hematoxylin and eosin stain, 400× magnification, 40× objective. [Panel C](#): Cyclin-D1, 400× magnification, 40× objective. [Panel D](#): AE1/AE3 (pancytokeratin), 400× magnification, 40× objective. [Panel E](#): GATA-3, 400× magnification, 40× objective. [Panel F](#): Estrogen receptor (ER), 400× magnification, 40× objective.

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pleomorphism (panel B). On immunohistochemical evaluation, the neoplastic cells were negative for B- and T-cell markers but were positive for cyclin D1 (panel C). Based on the morphology, suspicion for lobular carcinoma of the breast was also raised, and additional immunohistochemical stains were performed. The neoplastic cells were positive for pan-cytokeratin (panel D), GATA-3 (panel E), and estrogen receptor (panel F). These aberrant cells were negative for PR, HER2/NEU, E-Cadherin, CD34, and BRAF. Based on these findings, a diagnosis of metastatic cyclinD1 positive lobular breast carcinoma was made. Upon further investigation, it was found that the patient had a remote history of breast cancer (type unknown) approximately 15 years ago.

Lobular carcinoma of the breast infiltrates can present as single cells and the tumor cells could mimic lymphocytes [1]. Cyclin-D1, a well-known oncogene, is overexpressed in approximately half of breast cancers [2–4]. This interesting case illustrates bone marrow infiltration by cyclin D1 positive lobular breast carcinoma that could be misdiagnosed as lymphoma. Lobular carcinoma findings are often subtle, warranting a high index of suspicion, and a thorough review of patient history is required. Thus, when evaluating such cases in women older than 60, using a panel of CD45, CD20, CD3, keratin, GATA-3, ER, and PR could be helpful.

AUTHOR CONTRIBUTIONS

Hafiz A. Ghani, MD—Writing original draft; Sri Bharathi Kavuri, MD—Writing, review, and editing; Juan D. Garcia, MBA—Writing, review, and editing; Christopher J. Zahner, MD—Writing, review, and editing; Kirill A. Lyapichev, MD—Writing, review and editing, and conceptualization.

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All authors declare “No Conflict of Interest.”

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The authors have confirmed patient consent statement is not needed for this submission.

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