International Journal of Research in Medical Sciences
Phukan N et al. Int J Res Med Sci. 2026 Sep;14(9):4053-4057
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20263127

Case Report

Pleomorphic invasive lobular carcinoma of the breast mimicking chronic abscess: a case report

Neeharika Phukan*, Sima Chauhan, Natasha Modi, Kinjal Patel

Department of Pathology, NIMS Medical College, Jaipur, Rajasthan, India

Received: 07 July 2026
Accepted: 12 August 2026

***Correspondence:**
Dr. Neeharika Phukan,
E-mail: n.phukan94@gmail.com

ABSTRACT

Pleomorphic invasive lobular carcinoma (PLC) is a rare and aggressive subtype of invasive lobular carcinoma that can present with atypical clinical features, often resembling benign inflammatory conditions. A 36-year-old female presented at NIMS hospital, Jaipur, Rajasthan with diffuse swelling of the left breast, clinically suspected to be a chronic abscess. Imaging revealed an ill-defined lesion involving the entire breast. FNAC suggested malignancy. Modified radical mastectomy was performed. Histopathology confirmed pleomorphic invasive lobular carcinoma with extensive lymphovascular and perineural invasion and metastases in all 22 axillary lymph nodes. Immunohistochemistry showed Luminal B molecular subtype. PLC is an aggressive tumor that may mimic benign conditions, leading to diagnostic delay. Accurate diagnosis requires clinicoradiologic correlation and histopathological confirmation with immunohistochemistry.

Keywords: Pleomorphic lobular carcinoma, Invasive lobular carcinoma, Breast cancer, FNAC, Axillary metastasis, Abscess mimic

INTRODUCTION

Invasive lobular carcinoma (ILC) accounts for approximately 10–15% of all breast carcinomas and is characterized by loss of E-cadherin, resulting in discohesive tumor cells.[1,2] Pleomorphic invasive lobular carcinoma (PLC) is an uncommon and more aggressive variant, demonstrating marked cytological atypia and a poorer prognosis compared to classical ILC.[3,4] Unlike typical ILC, which is frequently hormone receptor-positive, PLC often exhibits a more variable immunophenotype, including reduced hormone receptor expression and occasional HER2 overexpression.[4,5,6]

Additionally, PLC may present with atypical clinical and radiological features, sometimes mimicking benign inflammatory lesions, which can lead to delayed diagnosis and management.[7,8]

CASE REPORT

A 36-year-old female presented to the surgical outpatient department at NIMS hospital in Jaipur, Rajasthan, with a history of progressive swelling of the left breast for 2 months. The swelling was insidious in onset and gradually increased in size. It was associated with mild pain and a feeling of heaviness. There was no history of fever, nipple discharge, or trauma. Clinically, the lesion was suspected to represent a chronic breast abscess.

On physical examination, the left breast appeared diffusely enlarged with induration involving almost the entire breast. The overlying skin was stretched but showed no ulceration or peau d'orange appearance. The nipple-areolar complex was distorted. Palpation revealed a poorly defined, firm to hard mass with restricted mobility. Multiple ipsilateral and contralateral axillary lymph nodes were palpable. Ultrasonography of the breast

demonstrated an ill-defined, heterogeneous hypoechoic lesion involving the entire left breast parenchyma, extending to the nipple-areolar complex and infiltrating the underlying pectoralis muscle. Minimal internal vascularity was noted on Doppler imaging. Bilateral axillary lymph nodes were enlarged, with the largest measuring 1.8 × 0.9 cm on the left side. The radiological impression favored a malignant etiology, although chronic abscess remained a differential diagnosis.

Fine-needle aspiration cytology (FNAC) from the breast lesion revealed highly cellular smears composed of cohesive clusters and singly dispersed malignant epithelial cells. The cells exhibited a high nucleo–cytoplasmic ratio, marked nuclear pleomorphism, irregular nuclear membranes, coarse chromatin, and prominent nucleoli (Figure 1).

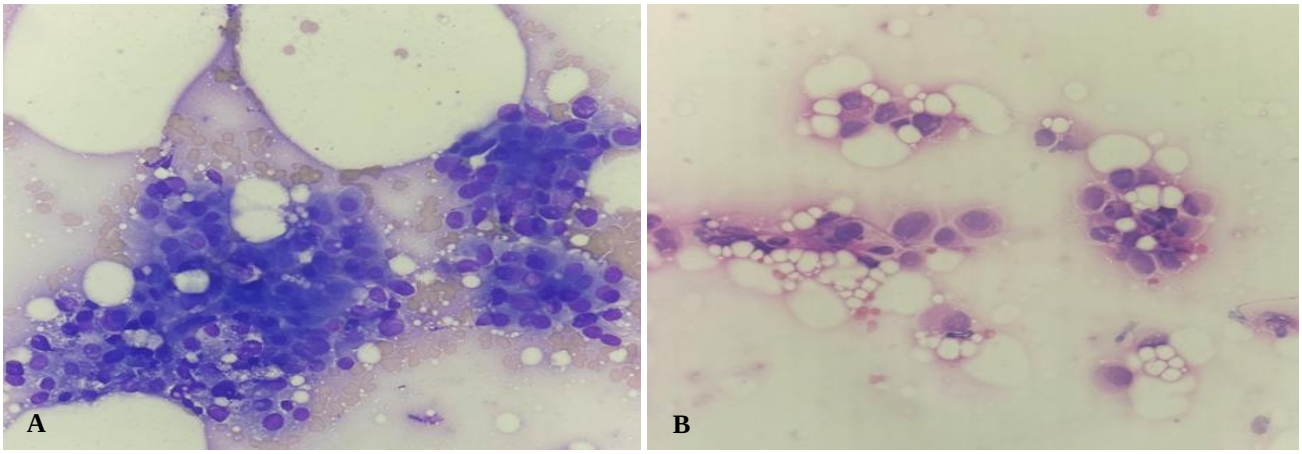

Figure 1: (A) May Grunwald Giemsa stained smear of the left breast swelling (400X magnification) shows cohesive clusters and few singly dispersed malignant cells having high nucleo-cytoplasmic ratio, enlarged nuclei with irregular nuclear membrane, coarse chromatin, inconspicuous nucleoli and moderate amount of cytoplasm with vacuolations. Occasional cells show eccentrically placed nuclei; (B) Papanicoloau stained smear of the contralateral axillary lymph node swelling (400X magnification) shows cohesive clusters and few singly dispersed malignant cells having high nucleo-cytoplasmic ratio, enlarged nuclei with irregular nuclear membrane, coarse chromatin, inconspicuous nucleoli and moderate amount of cytoplasm with vacuolations. Occasional cells show eccentrically placed nuclei.

Occasional bizarre tumor cells were also noted. Based on the Yokohama system, the lesion was categorized as malignant (Category V), Robinson grading 2 with a cytological impression suggestive of ductal carcinoma. FNAC from the contralateral axillary lymph node confirmed metastatic carcinoma. The patient subsequently underwent modified radical mastectomy. Gross examination of the specimen revealed a poorly circumscribed, grey-white tumor measuring 8 × 8 × 3.5 cm, involving almost the entire breast. The cut surface was firm with focal areas of necrosis (Figure 2).

Microscopic examination showed tumor cells arranged predominantly in discohesive single-file patterns and loose sheets infiltrating the stroma. The tumor cells exhibited marked pleomorphism, enlarged hyperchromatic nuclei, prominent nucleoli, and moderate eosinophilic cytoplasm (Figure 3). Focal areas showed signet-ring cell morphology and occasional tumor giant cells. Brisk mitotic activity was noted (approximately 10 per 10 high-power fields). Extensive lymphovascular invasion (Figure 3) and perineural invasion were present.

The tumor infiltrated the dermis without overt skin ulceration. Ductal carcinoma in situ, solid pattern without comedo necrosis, intermediate grade was also present (Figure 3). All 22 dissected axillary lymph nodes showed metastatic deposits, many with extranodal extension.

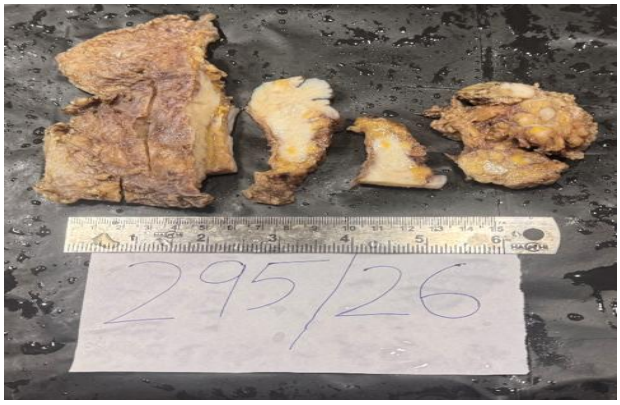

Figure 2: Gross image of the left breast shows a poorly circumscribed, grey-white tumor measuring 8 × 8 × 3.5 cm, involving almost the entire breast. The right most image shows 7 lymph nodes within the axillary fat, cut section of which are solid and white, indicating metastasis.

Immunohistochemical analysis demonstrated weak nuclear positivity in 5% of tumour cells for estrogen receptor (ER) (Allred score 1+2=3) (Figure 4) and moderate nuclear intensity in 9% of tumour cells for progesterone receptor (PR) (Allred score 2+2=4) (Figure 4) with strong membranous positivity for HER2 neu (Figure 4), and a Ki proliferative index of 20% (Figure 4).

Based on morphological and immunohistochemical findings, a final diagnosis of pleomorphic invasive lobular carcinoma (Nottingham Grade III, pT3N3a), molecular subtype Luminal B subtype with associated Ductal carcinoma in situ without comedo necrosis, intermediate grade was rendered.

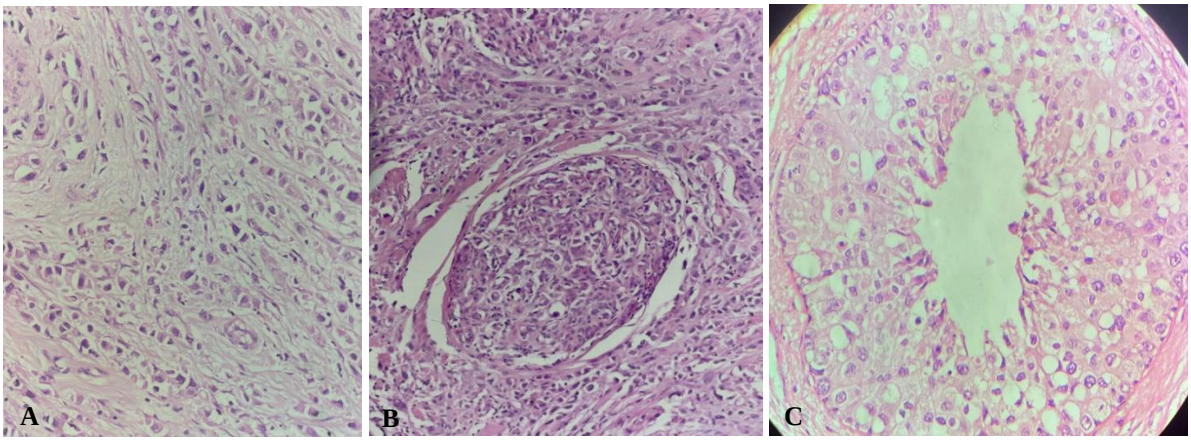

Figure 3: (A) Haematoxylin and Eosin-stained section (400X magnification) of the left breast mass shows a diffusely infiltrating tumour, consisting of tumour cells infiltrating as single cords (single file pattern). Tumour cells are pleomorphic, having high nucleo-cytoplasmic ratio, enlarged nuclei with irregular nuclear membrane, inconspicuous nucleoli and moderate amount of cytoplasm. Occasional signet ring cells also noted; (B) Haematoxylin and Eosin-stained section (400X magnification) of the left breast mass shows lymphovascular invasion with tumour cells present within a vessel; (C) Haematoxylin and Eosin-stained section (400X magnification) of the left breast mass shows ductal carcinoma in situ component, intermediate nuclear grade, solid pattern with absence of comedo necrosis.

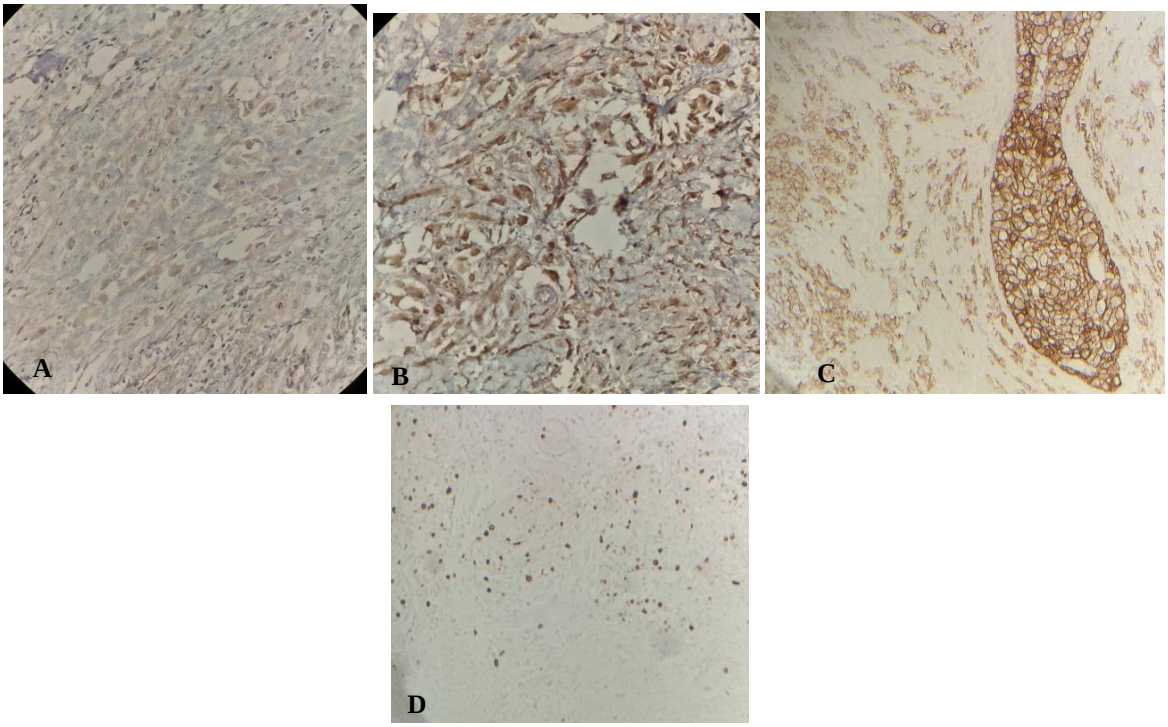

Figure 4: (A) Immunohistochemistry for ER (400X magnification) shows weak nuclear staining in 5% of tumour cells; (B): Immunohistochemistry for PR (400X magnification) shows moderate nuclear staining in 9% of tumour cells; (C) Immunohistochemistry for Her2neu (400X magnification) shows strong complete membranous positivity in 100% of tumour cells; (D) Immunohistochemistry for Ki67 (400X magnification) shows 20% positivity in tumour cells.

DISCUSSION

Pleomorphic invasive lobular carcinoma is a rare but well-recognized variant of lobular carcinoma, first described by Eusebi et al. in 1992.[3] Although it shares the classical lobular growth pattern of discohesive cells infiltrating in single-file arrangements, it is distinguished by significant nuclear atypia, prominent nucleoli, and increased mitotic activity.[3,4]

In contrast to classical ILC, which is typically ER and PR positive and HER2 negative, PLC demonstrates a more heterogeneous immunoprofile. Several studies have reported reduced hormone receptor expression along with increased HER2 amplification in PLC, contributing to its aggressive biological behavior.[4-6] The HER2-positive and low ER/PR profile observed in the present case supports this aggressive phenotype and has important therapeutic implications, particularly regarding targeted anti-HER2 therapy along with hormone therapy.[8,9] Clinically, PLC tends to present at a more advanced stage with larger tumor size, higher histological grade, and increased incidence of lymph node metastasis.[5,7,10] The extensive lymphovascular invasion and nodal metastasis seen in this case are consistent with previously reported findings and indicate poor prognostic features.[7,10]

An unusual aspect of this case was its presentation mimicking a chronic abscess. We report this case to highlight the pitfalls in clinical diagnosis where it was suspected as chronic abscess and cytological misdiagnosis as ductal carcinoma because of the extensive pleomorphism of the epithelial cells; salient point missed in favour of Lobular carcinoma was the cytoplasmic vacuolations. Of significant importance is the cytology of the contralateral axillary lymph node swelling showing dispersed atypical cells with eccentrically placed hyperchromatic nuclei and moderate amount of cytoplasm, which points towards lobular carcinoma. The case was later confirmed in histopathology as Invasive lobular carcinoma, pleomorphic variant. Hence, it is essential to consider the cytomorphological features of the metastatic site as well to avoid misdiagnosis, especially in cytological setting. Two important takeaway lessons from this case report are firstly, expertise and meticulous eye to detail needed while reporting and practicing cytology and secondly, histopathology was, is and will be the gold standard of diagnosis. Malignant breast lesions, especially high-grade tumors, may occasionally present with inflammatory features, leading to diagnostic confusion with benign conditions such as mastitis or abscess.[7,11] This overlap can delay appropriate treatment. Cytologically, PLC may resemble high-grade ductal carcinoma due to marked pleomorphism, making accurate subtyping difficult on FNAC alone.[12,13] Therefore, histopathological examination remains essential for definitive diagnosis. Loss of E-cadherin expression is a key feature supporting lobular differentiation and helps distinguish PLC from ductal carcinoma.[6,14]

From a prognostic standpoint, PLC is associated with higher recurrence rates, increased metastatic potential, and reduced overall survival compared to classical ILC.[2,7,13,14] Management generally follows protocols for high-grade breast carcinomas, including surgery, chemotherapy, and targeted therapy. In HER2-positive cases, agents such as trastuzumab significantly improve outcomes.[9]

CONCLUSION

Pleomorphic invasive lobular carcinoma is a rare and aggressive variant of breast carcinoma. Its potential to mimic benign inflammatory lesions poses diagnostic challenges. Early and accurate clinicoradiologic-pathologic correlation is critical to ensure timely management and improved prognostic stratification.

ACKNOWLEDGEMENTS

The authors would like to express gratitude towards Mr. Mohd Adnan (Immunohistochemistry and Histopathology technician) for his support during this case report study.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. WHO Classification of Tumours Editorial Board. Breast tumours. 5th ed. Lyon: International Agency for Research on Cancer; 2019.
2. Pestalozzi BC, Zahrieh D, Mallon E, Gusterson BA, Price KN, Gelber RD, et al. Distinct clinical and prognostic features of infiltrating lobular carcinoma of the breast: combined results of 15 International Breast Cancer Study Group clinical trials. J Clin Oncol. 2008;26(18):3006-14.
3. Eusebi V, Magalhães F, Azzopardi JG. Pleomorphic lobular carcinoma of the breast: an aggressive tumour showing apocrine differentiation. Hum Pathol. 1992;23(6):655-62.
4. Middleton LP, Palacios DM, Bryant BR, Krebs P, Otis CN, Merino MJ. Pleomorphic lobular carcinoma: morphology, immunohistochemistry, and molecular analysis. Am J Surg Pathol. 2000;24(12):1650-1656.
5. Silver SA, Tavassoli FA. Pleomorphic carcinoma of the breast: clinicopathological analysis of 26 cases of an unusual high-grade phenotype of ductal carcinoma. Histopathology. 2000;36(6):505-14.
6. Palacios J, Sarrió D, García-Macias MC, Bryant B, Sobel ME, Merino MJ. Frequent E-cadherin gene inactivation by loss of heterozygosity in pleomorphic lobular carcinoma of the breast. Mod Pathol. 2003;16(7):674-78.
7. Zhao J, Lang R, Guo X, Chen L, Gu F, Fan Y, et al. Clinicopathologic characteristics of pleomorphic carcinoma of the breast. Virchows Arch. 2010;456(1):31-37.

8. Günhan-Bilgen I, Ustün EE, Memiş A. Inflammatory breast carcinoma: mammographic, ultrasonographic, clinical, and pathologic findings in 142 cases. Radiology. 2002;223(3):829-38.
9. Wolff AC, Hammond MEH, Allison KH, Harvey BE, Mangu PB, Bartlett JMS, et al. Human epidermal growth factor receptor 2 testing in breast cancer: American Society of Clinical Oncology/College of American Pathologists clinical practice guideline focused update. J Clin Oncol. 2018;36(20):2105-22.
10. Nguyen CV, Falcón-Escobedo R, Hunt KK, Nayeemuddin KM, Lester TR, Harrell RK, et al. Pleomorphic ductal carcinoma of the breast: predictors of decreased overall survival. Am J Surg Pathol. 2010;34(4):486-93.
11. Kini H, Pai RR, Rau AR, Lobo FD, Augustine AJ, Ramesh BS. Pleomorphic lobular carcinoma of the breast: a diagnostic dilemma. J Cytol. 2007;24(4):193-95.
12. Robinson IA, McKee G, Jackson PA, Cook MG, Kissin MW. Lobular carcinoma of the breast: cytological features supporting the diagnosis of lobular cancer. Diagn Cytopathol. 1995;13(3):196-201.
13. Rakha EA, Ellis IO. Lobular breast carcinoma and its variants. Semin Diagn Pathol. 2010;27(1):49-61.
14. Wahed A, Connelly J, Reese T. E-cadherin expression in pleomorphic lobular carcinoma: an aid to differentiation from ductal carcinoma. Ann Diagn Pathol. 2002;6(6):349-351.Romero R, Kalache KD, Kada N. Timing the delivery of the preterm severely growth restricted fetus: venous Doppler, cardiotocography on the biophysical profile? Ultrasound Obstet Gynacol. 2002;19: 118-21.

Cite this article as: Phukan N, Chauhan S, Modi N, Patel K. Pleomorphic invasive lobular carcinoma of the breast mimicking chronic abscess: a case report. Int J Res Med Sci 2026;14:4053-7.