Case Report

Invasive Papillary Carcinoma of the Breast – A Rare Case Report

Yaminy Pradeep Ingale, Archana Chirag Buch, Merin Jose, Rupali Ramakant Bavikar

Department of Pathology, Dr. D.Y. Patil Medical College, Hospital and Research Centre, Dr. D. Y. Patil Vidyapeeth, Pune, Maharashtra, India

Abstract

Invasive papillary carcinoma (IPC) of the breast is a rare entity, comprising approximately <1%–2% of all breast cancers. It is most commonly seen in postmenopausal females and rarely seen in males. IPC is arising from the dilated duct or large duct. They are low-grade tumors microscopically consisting of well-circumscribed solid nodules of the neoplastic cells separated by fibrovascular cores. It has excellent prognosis, so exact diagnosis is necessary. We report a case of a 68-year-old postmenopausal female, who came with complaints of a lump in the left breast for the past 2 months, modified radical mastectomy was done, and the specimen was sent for histopathological examination. Immunohistochemistry was done estrogen receptor and progesterone receptor positive with human epidermal growth factor receptor 2 negative. The case is presented due to its rarity.

Keywords: *Breast cancers, fibrovascular cores, invasive papillary carcinoma*

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Introduction

Breast carcinoma is the most common malignancy in females and the second leading cause of death due to cancer in females.[1,2] Invasive papillary carcinoma (IPC) of the breast is a rare entity accounting for <1%–2% of all invasive carcinomas.[3] Invasive papillary breast carcinoma is predominantly seen in postmenopausal women and has good prognosis.[4] Clinically, most of these tumors are asymptomatic or present with subareolar mass and/or nipple discharge.[5]

Grossly, it appears to be a well-circumscribed mass. Histopathologically, it composed of papillary architecture with papillae formed by malignant epithelial cells intimately related to fibrovascular cores.[6]

In this case report, we relate the clinical findings and histopathological features of this rare entity.

Case Report

A 68-year-old postmenopausal female came with complaints of a lump in the left breast for the past 2 months, gradually increasing in size, painful for the past 15 days. There was no history of nipple discharge. On systemic examination, she was a known case of hypertension for the past 5–6 years. No history of diabetes mellitus, ischemic heart disease, or pulmonary tuberculosis was noted.

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Physical examination revealed a 6 cm × 4 cm well-defined, irregular, fixed, firm, painful mass at 3 o' clock position in the left side of the breast. There were no skin changes and nipple discharge.

Mammography showed multiple high-density mass lesions in the upper outer quadrant of the left breast with lobulated outline and microcalcifications.

Computerized tomography and magnetic resonance imaging of the breast showed a large, solitary, lobulated exophytic, heterogeneous lesion with speculated margins in the left breast. Fine needle aspiration smears showed a cystic papillary lesion with secondary infection.

The patient underwent left modified radical mastectomy. The specimen was sent to histopathological laboratory. On gross examination, the tumor is well circumscribed measuring 3 cm × 2.8 cm × 2 cm with papillary nodules [Figure 1]. Histopathological examination revealed tumor arranged in the papillary pattern. Individual ductal cells showed mild pleomorphism, hyperchromatic, high Nuclear cytoplasmic ration ratio, and prominent

Address for correspondence: Dr. Archana Chirag Buch, B 603, Gold Coast, Ivory Estates, Next to Hotel Green Park, Someshwarwadi, Pune - 411 008, Maharashtra, India.
E-mail: drarchanabuch@yahoo.co.in

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nucleoli. Foci of calcification were noted [Figure 2]. The tumor cells showed infiltration in the stroma with desmoplastic stromal reaction. Papilla lacked myoepithelial cells [Figure 3]. All submitted lymph nodes are free of tumor (0/17). Immunohistochemistry done with estrogen receptor (ER), progeserone receptor (PR), and human epidermal growth factor receptor 2 (HER2) Neu results are ER positive (score 8), PR positive (score 7), HER2 Neu negative.

Final diagnosis was given as invasive papillary ductal carcinoma of the right breast, luminal A type. By the CAP guidelines, the stage is pT2N0M0.

Discussion

Papillary lesions of the breast comprise a morphologically heterogeneous group of lesions and create difficulty in differentiating benign from malignant lesions.[3,5]

The papillary lesions comprise <10% from all benign lesions of the breast, while the papillary lesions comprise <0.5%–2% from all malignant lesions of the breast. Malignant papillary lesions of the breast comprise many lesions such as papillary ductal carcinoma *in situ* (DCIS), DCIS arising in intraductal papilloma, encapsulated papillary carcinoma, solid papillary carcinoma, and IPC.[7,8]

Malignant papillary neoplasm of the breast includes many differential diagnoses such as DCIS arising in intraductal papilloma, papillary DCIS, encapsulated papillary carcinoma, solid papillary carcinoma, and IPC.[7,8] All malignant papillary lesions of the breast lack an intact myoepithelial cell layer within the papillae or at the periphery of the tumor, which is an important feature allowing distinction from benign intraductal papillomas.[9]

The difference between IPC and the encapsulated intracystic papillary breast carcinoma is its invasive nature into the stroma, higher nuclear grade, and necrosis.[10]

There are different management protocols considered when dealing with this rare type of breast cancer. Most of the time, conservative surgeries are preferred in the form of wide local excision, with or without adjuvant radiotherapy, or mastectomy. Prognosis of IPC is excellent with a 10-year survival rate.

Conclusion

Invasive papillary breast carcinoma is very rare type of breast carcinoma. In spite of its invasive nature, *in situ* and invasive both have excellent prognosis. Hence, accurate histological diagnosis is necessary. Awareness of this entity is important to avoid overtreatment. On standard Haematoxylin and Eosin stain staining, accurate diagnosis of the papillary lesions remains challenging.

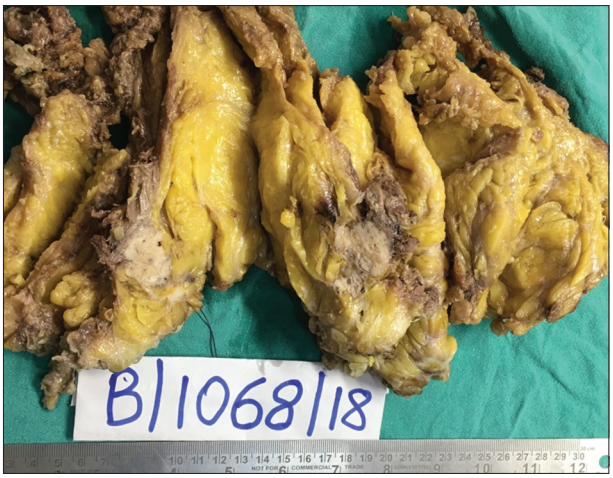

Figure 1: Well-circumscribed, gray-white mass with areas of necrosis and cystic degeneration

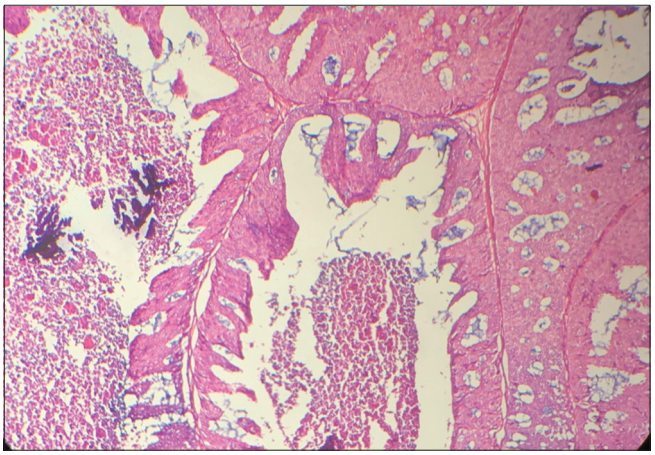

Figure 2: Papillary structure aligned around fibrovascular core with areas of calcifications and necrosis (H and E, ×10)

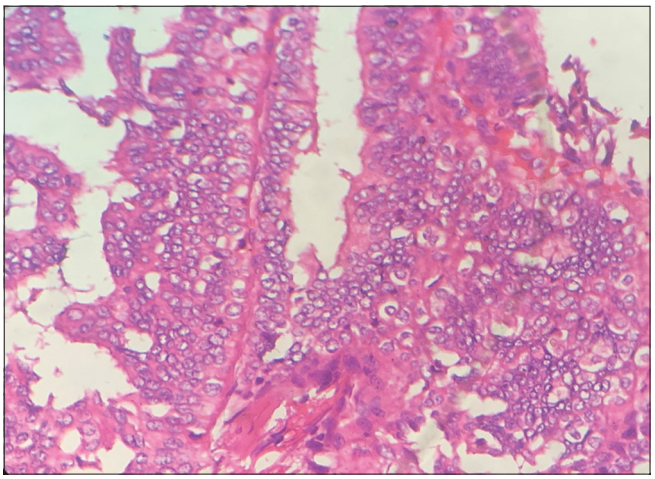

Figure 3: Tumor cells are pleomorphic, hyperchromatic, with high N: C ratio and prominent nucleoli without myoepithelial cell layer in the papilla (H and E, ×40)

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Conflicts of interest

There are no conflicts of interest.

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