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IN SITU DUCTAL CARCINOMA IN A BENIGN PHYLLODES TUMOR: A RARE COMBINATION

Pathology

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ABSTRACT

Phyllodes tumor (PT) is an uncommon fibroepithelial tumor of female breast. Ductal carcinoma in situ (DCIS) in the epithelial component of PT is very rare. We report a rare case of DCIS arising in a benign PT in a 48-year-old lady. The patient presented with a lump in left breast, noticed 20 days back. Ultrasonography failed to distinguish between fibroadenoma and PT. A tumor measuring 5.6×3.6×3.2 cm was removed by local excision. Histological examination revealed foci of DCIS within the benign Phyllodes tumor, without any invasive component. While coexistent carcinoma and cystosarcoma phyllodes in the same breast have been reported, it's rare for the carcinoma to develop within the cystosarcoma phyllodes.Our case highlights the importance of assessing phyllodes tumors for concurrent in situ and invasive carcinoma involvement, as this may affect both the need for axillary lymph node examination and subsequent treatment options.

KEYWORDS

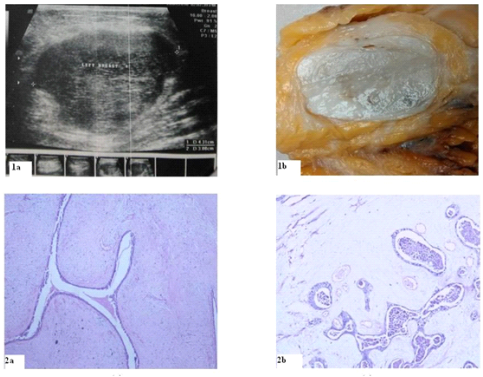
Breast, carcinoma, *in situ*, phyllodes tumor

INTRODUCTION

Phyllodes tumor (PT) of the breast is a rare fibroepithelial neoplasm, accounting for 0.3% to 1% of all breast tumors. Phyllodes tumors (PTs) of breast are a group of circumscribed biphasic tumors characterized by an epithelial component arranged in clefts surrounded by a hypercellular mesenchymal component that is typically organized in a leaf like pattern. Phyllodes tumor presents a morphologic continuum from benign to malignant based on a combination of several histologic features, including stromal cellularity, nuclear atypia, mitotic activity, stromal overgrowth, and tumor margin appearance. [1] The epithelial abnormality rarely reaches a level acceptable as intraductal carcinoma, and the diagnosis of intraductal or invasive duct carcinoma in PTs is infrequent.

CASE REPORT:

A 48 years old multiparous woman presented with complaint of a small lump in her left breast noticed 20 days back. There was no history of discharge from nipple. On clinical examination; the mass was firm, non-tender, well-defined, and mobile. No skin change over the mammary region or nipple retraction was noted. Clinically, her right breast was found to be normal. There was no palpable lymph node in the axillary or supraclavicular region. Ultrasonography (USG) of the left breast revealed a well-defined lobulated solid lesion measuring 4.3 cm × 3.1 cm with regular border and without any calcification (fig.1a). Fine needle aspiration smear revealed a moderately cellular lesion, comprising of few small clusters of uniform ductal epithelial cells, interspersed myoepithelial cells, foam cells along with fragments of fibromyxoid stroma in a necrotic and hemorrhagic background. Some of the epithelial clumps showed apocrine change and moderate atypia. Mitotic figures were infrequent. Based on cytological findings, an impression of atypical epithelial hyperplasia with fibrocystic change was made. Considering the patient's age and cytological features, the patient was planned for a wide local excision of the mass. The mass was received in the department of lab medicine. Grossly, the mass measured 4.0 cm × 3.0 cm × 2.5 cm and appeared well circumscribed, firm, and fleshy. The cut surface revealed greyish white lobulated areas with whorled like pattern and cleft like spaces (fig.1b). Histopathological examination demonstrated a well circumscribed mass, showing biphasic morphology comprising of epithelial component and cellular spindle stroma. Most of the areas characteristically revealed compressed glands displaying a well-developed leaflike projections protruding into dilated spaces (fig.2a). The moderately cellular stroma was formed by monomorphic spindle cells with minimal atypia having infrequent mitotic count and without any heterologous stromal differentiation. Areas of hyalinization and myxoid change were also noted. The epithelial component in most of the areas was morphologically benign. However, some of the areas definitely displayed features of DCIS without any features of stromal invasion. DCIS areas revealed one to more cell thickness of moderately atypical poorly polarized cells with inconspicuous nucleoli, coarse clumped chromatin, moderately increased nuclear-cytoplasmic ratio, lining a glandular formation with large lumen containing granular material (fig.2b). Considering the histopathological findings, the diagnosis of Benign Phyllodes Tumor with evidence of Ductal Carcinoma in situ, was made.



LEGENDS:

Figure 1 a:
Ultrasonography of the left breast showing well defined hypoechoic lobular mass with regular borders.

Figure 1 b:
Gross features of the breast mass after wide local excision showing well circumscribed greyish fleshy white mass with cleft like spaces.

Figure 2 a:
Classical leaf like areas in a benign phyllodes tumor (H and E, ×40)

Figure 2 b:
Ductal carcinoma *in situ* (DCIS) showing Comedonecrosis (H and E, ×40)

DISCUSSION:

Phyllodes tumors constitute less than 1% of breast tumors and 2–3% of fibroepithelial breast tumors.[1,2] They usually occur in middle-aged to elderly women but can occur at any age. PT arises from intralobular stroma and presents as discrete palpable mass that rapidly enlarges. Axillary nodal enlargement is present in 17%, but usually reactive and not due to metastatic disease. No single feature is reliable in predicting the clinical behavior of phyllodes tumors. Several histological parameters should be evaluated, including stromal cellularity, atypia, mitoses, stromal overgrowth, infiltrative borders, and presence or absence of necrosis. [1,2,3] Malignant transformation of phyllodes tumors usually occurs in the stromal component. It is rare in epithelial component. Metastases, usually hematogenous rather than lymphatic, have been reported to occur at a rate of 13% in 10 years for malignant phyllodes tumors.[4] As malignant phyllodes tumors usually spread by a hematogenous rather than a lymphatic route, axillary lymph node

dissection is generally not recommended. Importantly, local recurrences are common even in benign tumors and are seen in up to 8% in 10 years. [3,4] Positive margin status is significantly associated with recurrence. [5] Most phyllodes tumors have a benign ductal component. DCIS arising in a phyllodes tumor is very rare. Recent WHO classification on breast tumors clearly stated that any PT that has recognizable epithelial elements may harbor DCIS, lobular neoplasia, and their invasive counterparts. But this is a relatively rare finding. [5] Carcinoma has been reported to occur in 1-2% of phyllodes tumors, many of which are lobular carcinoma in situ.

In most cases, it is very difficult to preoperatively detect the presence of carcinoma within a phyllodes tumor. This is due to the fact that the stromal component usually takes up a larger area than the carcinoma. In many cases, the existence of a combined carcinoma is noted for the first time, only after a postoperative histological search has been performed. [6] When handling an extirpated phyllodes tumor, it is important to conduct a thorough histopathological search, always keeping in mind the possibility of a combined carcinoma.

As carcinoma within a phyllodes tumor is very rare, treatment and follow-up of these cases are not standardized. It is recommended that the treatment be customized in each case based on whether there is an invasive component, affected lymph nodes or distant metastases, and that the carcinomatous component be treated independently of the phyllodes tumor. [6,7] Axillary lymph node dissection is not part of the standard treatment for phyllodes tumors as lymph node spread is rare. Also, lymph node metastases associated with a carcinoma, within a phyllodes tumor, are extremely rare. [7]

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