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Invasive Ductal Carcinoma within a Benign Phyllodes Tumor

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Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

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Conflict of interest: None declared

Patient: Female, 70
Final Diagnosis: Benign phyllodes tumor
Symptoms: Fatigue
Medication: —
Clinical Procedure: Right breast lumpectomy
Specialty: Surgery

Objective: Rare disease

Background: Phyllodes tumor (PT) is a rare neoplasm of the breast. Concomitant PT with invasive ductal carcinoma (IDC) is an even rarer occurrence. When ductal carcinoma *in situ* (DCIS) or IDC are detected within the specimen, the management changes from wide local excision to further staging work-up, including sentinel node biopsy and radiation.

Case Report: We report the case of a 70-year-old presented with right breast mass whose pathology showed benign PT with concomitant IDC and DCIS. The patient elected for a wide excision of the mass with sentinel lymph node biopsy, which did not show any involvement. The patient was started on appropriate therapy. She is currently doing well.

Conclusions: This case highlights the importance of wide local excision for PT as well as prudent histologic examination to rule out other malignant components, as the presence of IDC distinctly changes management.

MeSH Keywords: Carcinoma, Ductal, Breast • Carcinoma, Intraductal, Noninfiltrating • Phyllodes Tumor

Full-text PDF: http://www.amjcaserep.com/abstract/index/idArt/903774

Background

Phyllodes tumors (PT) is a rare neoplasm of the breast, accounting for around 1.5% of all breast carcinomas in women [1]. They are clinically and radiologically similar to fibroadenomas, but tend to occur more frequently in older women. These tumors can be classified as benign, borderline, or malignant, with approximately 10% of tumors harboring malignancy [2]. PT have rarely been associated with synchronous invasive ductal carcinoma (IDC); this occurs in only 1–2% of cases [3,4], in which PT is usually malignant. It is even less common in benign PT. Treatment options varies based on tumor size, age at diagnosis, and histology, with breast-conserving therapy being the preferred treatment in patients who were younger at diagnosis and in those with smaller tumors [5].

Case Report

The patient was a 70-year-old female with a history of a benign-appearing right breast mass present on imaging for 9 years. The mass had been followed with serial mammograms and ultrasound at another facility and was described as macrolobulated, likely consistent with fibroadenoma, and classified as BiRads 1–2. The patient presented to our breast clinic after her annual mammogram showed interval increase in the size of the mass with more cystic changes apparent (Figure 1). She had no past history of breast cancer but did have a significant history of hormone replacement therapy for over 20 years for menopausal symptoms

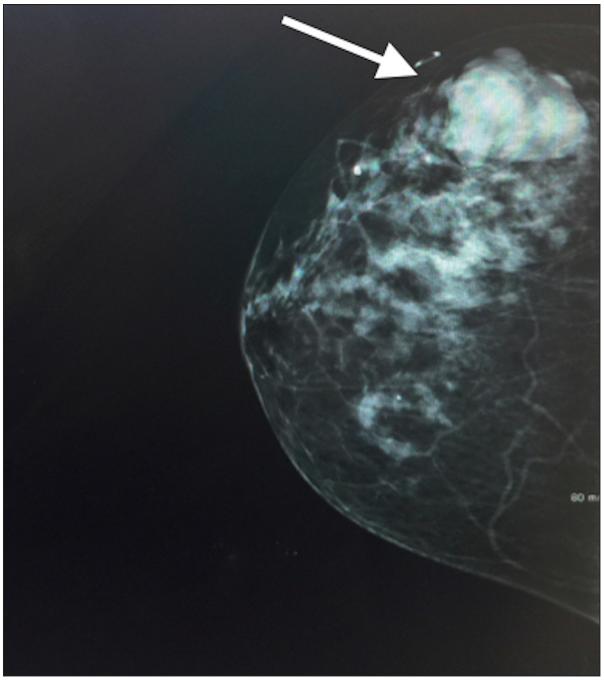

Figure 1. Mammogram of the right breast showing the mass (arrow).

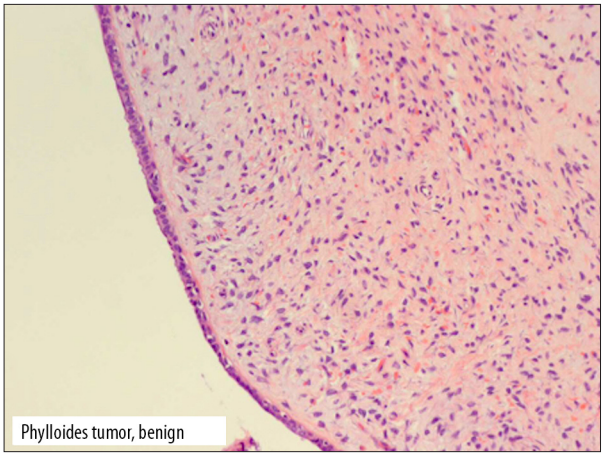

Figure 2. Microscopic photo showing benign phyllodes tumor.

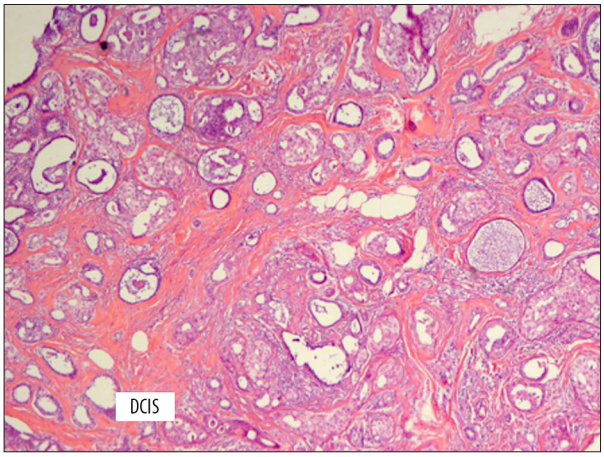

Figure 3. Microscopic photo showing DCIS.

occurring after a total hysterectomy. Core-needle biopsy performed in the clinic showed fragments consistent with fibroadenoma, but a leaf-like architecture was also noted, raising the possibility of PT (Figure 2). The patient elected for surgical excision. The patient's pathology after wide local excision showed a 2.3-cm benign PT with 0.5-cm invasive ductal carcinoma (IDC) within the PT, as well as associated high-grade ductal carcinoma *in situ* (DCIS) (Figure 3). All margins were negative. The IDC was ER/PR+, Her2Neu-negative, Ki67 2%, and p53 2%. Given the findings of DCIS and IDC, she underwent sentinel lymph node biopsy, which did not show any evidence of lymph node involvement. Her final clinical stage was T1aN0M0. She was started on an aromatase inhibitor and received 1 month of adjuvant radiation therapy, which she tolerated well. She is currently doing well and does not show any clinical or radiographic evidence of disease.

Discussion

Phyllodes tumor is a rare breast neoplasm, accounting for around 1.5% of benign and malignant breast tumors [1].

Histologically, phyllodes tumors are well-circumscribed biphasic tumors, with distinct epithelial and stromal components and a leaf-like architecture [2]. The tumor classification system is controversial, and is based on histologic features such as stromal cellularity, atypia, infiltrative borders, stromal overgrowth, and the presence or absence of necrosis. Malignant transformation usually occurs within the stromal component and is less common in the epithelial component [2].

In situ or invasive breast cancers can occur in conjunction with phyllodes tumors, and are even more uncommon, occurring in only 1–2% of patients with phyllodes tumors. Malignant change in the epithelial component of phyllodes tumors has been reported in about 30 cases within the literature [2,6,7]. Most of these cases represent carcinoma occurring in conjunction with malignant phyllodes tumors. However, benign phyllodes tumors have also been reported to occur with concomitant invasive or non-invasive carcinoma, and this represents an even smaller subset of tumors. Our patient is representative of this uncommon subset.

Treatment of phyllodes tumor is generally wide local excision. Margins should be 1–2 cm, in contrast with treatment for fibroadenoma, for which enucleation is recommended. Obtaining adequate margins during excision of phyllodes tumor appears to help prevent recurrence, which is common in PT [7,8], as well as to prevent the need for re-excision if the tumor does prove to be malignant. Approximately 10% of patients with malignant phyllodes tumor develop distant metastases to the lungs or brain [8], which is often fatal, further reinforcing the necessity of adequate margins. While phyllodes tumors typically behave more like sarcomas and do not usually metastasize to axillary lymph nodes [9,10], the presence of a carcinomatous component near or within the phyllodes tumors raises the question of lymph node sampling. In our patient, we elected to perform a sentinel lymph node biopsy after her initial excision, given the presence of invasive ductal carcinoma within the phyllodes tumor.

Only 1 other case report exists within the literature describing benign phyllodes tumor with concomitant IDC and DCIS. Parfitt et al. described a patient with an enlarging left breast mass that, after undergoing excisional biopsy, was found to be a benign phyllodes tumor with foci of non-specific mammary carcinoma and invasive ductal carcinoma *in situ* [10]. This patient also had clinically palpable nodes and subsequently underwent axillary lymph node dissection, which showed metastatic involvement [10]. The patient underwent adjuvant chemotherapy and radiation, as well as treatment with tamoxifen, and was reported to be disease-free after 3 years. While our patient did not have clinically palpable nodes, we elected to perform sentinel lymph node biopsy given the presence of invasive ductal carcinoma. We did not elect to begin adjuvant chemotherapy given her negative nodes and favorable tumor marker profile; however, she did undergo radiation therapy and aromatase inhibitor therapy. Like the patient described above, our patient continues to do well and is currently disease-free.

Conclusions

Recently, a nomogram was developed based on the ability of certain histologic characteristics of the primary tumor to predict disease-free survival for PT patients [11]. The authors fitted several pathologic findings into their model and concluded that stromal atypia, overgrowth, and surgical margins can serve as independent predictors of survival [11]. However, the presence of another concomitant pathology, such as DCIS or IDC, was not studied in the model. It is important to determine whether the co-existence of an epithelial malignancy or pre-malignancy affect patient survival, by reporting long-term follow up data on this patient population, and to incorporate this pathologic variance into the regression model. It is also worth mentioning that malignant PT tumors are becoming less frequent, with smaller tumor size at diagnosis and a younger patient age. These results were published recently by Mitus et al., after reviewing the data of 280 women from 1952 to 2007, who were treated surgically for PT at the Maria Sklodowska-Curie Memorial Institute of Oncology Cancer Center in Cracow, Poland [5].

Conflict of interests

None.

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