In Situ Ductal Carcinoma Arising in Benign Phyllodes Tumor in 19-Year Old Patient: A Case Report

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ABSTRACT

Phyllodes tumors are fibroepithelial lesions and malign forms are rare neoplasms with lower than 1% of all primary breast tumors. Malign forms are usually behaves like sarcomas because they occur in the stroma of the breast. Also proliferation of epithelium occurs and even it is less often, the epithelial component of phyllodes tumors can transform into malignancy too. This epithelial malignancies are usually in the form of infiltrative carcinomas and non-invasive tumors arising in benign phyllodes tumors are much rarer but can be seen. Literature include very few cases about this situation and cases are usually old woman. We report a 19-year old patient who was diagnosed with ductal carcinoma in situ arising in benign phyllodes tumor of the breast.

Key words: Phyllodes tumor, breast, intraductal, carcinoma

Introduction

Phyllodes tumors are a group of uncommon breast tumors involving biphasic proliferation of stroma and breast epithelium (1). The majority present a benign process but with increasing cellularity, invasive margins and actual sarcomatous behaviour, they can represent different characteristics from borderline to a malignant process (2, 3). Histologically they seem similar to fibroadenomas but are typically organized in leaf-like structures because of more cellular stroma. They usually appear as a fast growing, firm and well demarcated mass.

While local excision is adequate for benign phyllodes tumors, surgical margins must be over 1 cm for borderline tumors. Malignant phyllodes tumors are treated like sarcomas and en bloc surgical resection is recommended. Recurrence rates for benign, borderline and malignant phyllodes tumors are %17, %25, %27, respectively (4, 5). Malignant transformation of the tumor usually occurs in the stromal part of the tumor but the epithelial component of phyllodes tumors can transform into a malignancy too (6). Even this transformation is rare, most of them are infiltrative ductal carcinomas (2). Documented literature about ductal carcinoma in situ arising in phyllodes tumor is a rare situation (7-16). We report a 19-year old patient who was diagnosed with ductal carcinoma in situ arising in a benign phyllodes tumor of the breast.

Case Presentation

A 19-year old woman who discovered a painless mass in her right breast was admitted to Ankara Oncology Training and Research Hospital. She had no family history of cancer. The mass had grown rapidly over a 1 month period and was palpated in the upper outer quadrant of the right breast. It was well-defined, freely movable and 2.0x2.0 cm in size. The tumor was nonadherent to the skin and there were no palpable lymph nodes in the axilla or supraclavicular fossa on physical examination. Breast ultrasonography showed a 23x12 mm in size, regular, heterogenous, hypoechoicohenic mass in her right breast and the radiology department suggested excision of the lesion. Mammography was not performed because of patient’s age. The serum levels of tumor markers (CA 15-3, CEA) were within normal range. The tumor was locally excised under local anaesthesia. The patient had a rapid recovery and was discharged on the same day.

The final pathology result was benign phyllodes tumor. The tumor was 18 mm in greatest diameter and was well-demarcated. Histologically, the tumor consisted of both epithelial and stromal elements. Stromal elements showed mild cellularity and 1-2 mitoses per 10 high power fields. Expression of Ki-67 nuclear antigen was also examined and Ki-67 proliferative activity index was %5-10 in the stromal compo-
and the nature of the tumor margins (6). Because malignant transfor-
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Discussion and Conclusions
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and the nature of the tumor margins (6). Because malignant transforma-
tion of a phyllodes tumor mostly occurs in the stromal component,
many studies are centred upon this component.

The defining features of ductal carcinoma in situ include; malignant
cystologic features (monomorphic or pleomorphic), involvement of
two duct cross-sections and/or the sum of the duct diameters involved
in the lesion greater than 2 mm, and malignant cells confined to the
basement membrane inside the duct. Ductal carcinoma in situ arising
from the ducts in phyllodes tumors should be differentiated from the
usual epithelial hyperplasia. Usually, hyperplasia of epithelial cells show
overlapping proliferation. It was the rigid epithelial bars and cri-bri-
form lumina that signified the lesion as atypical epithelial hyperplasia
and with the size of the lesion being 8 mm, it reached the definition of
ductal carcinoma in situ.

Nio et al. (17) reported 53-year old female patient and Yamaguchi et al. (5)
reported 53-year old female patient both with a benign phyllodes tu-
more with ductal carcinoma in situ. Quinlan-Davidson et al. (18) re-
ported a 53-year old female patient with a borderline phyllodes tumor
with tubular carcinoma and lobular carcinoma in situ. Neto et al. (19)
reported a 66-year old female with the coexistence of benign phyllodes
tumor and synchronous, independent and invasive ductal carcinoma
in separate breasts. Although the median age of occurrence of disease
is 40–50 years, and the documented literature about ductal carcinoma
in situ arising in phyllodes tumor is a rare situation especially in older
patients, our case illustrates that this situation can be seen in younger
ages. Moreover, our case presented here is the youngest patient with
ductal carcinoma in situ arising in phyllodes tumor according to docu-
mented in the literature (7-19).

There are different opinions about the carcinomas arising from phyl-
loides tumor. Malignant transformation of epithelial hyperplasia in
the phyllodes tumor is one of them. In 2005, Tan et al. (20) studied
the pathology specimens of 335 Asian women with phyllodes tumor
and reported the epithelial hyperplasia rate as 74% (247 cases). Even
though it is a reliable hypothesis, the relationship between phyllodes
tumors and carcinomas is still unknown. Nomura et al. (7) reported a
75-year old case with ductal carcinoma in situ arising in a malignant
phyllodes tumor and estrogen and progesterone receptors were both
negative in that case.

A variety of therapies were applied to the various cases. These are local
excision and local radiation therapy, mastectomy, and axillary lymph
node dissection. It appears that mastectomy or local excision was se-
lected according to the size of the phyllodes tumor. Axillary dissec-
tion was applied for large phyllodes tumors, but no lymph nodes in-
volved in the cases. Also post-surgical radiation therapy and endocrine
therapy were applied. The prognosis for cases of ductal carcinoma in
situ within phyllodes tumors is generally favorable, with no deaths yet
reported. Axillary lymph node dissection is not part of the standard
treatment for phyllodes tumors as lymph node spread is rare, and may
thus be restricted to patients suspected of having lymph node involve-
ment by image diagnosis (5, 9, 16).

In situ carcinomas, even infiltrating ones, arising in phyllodes tumors
cannot be detected preoperatively in many of the cases. In all patients
with suspected phyllodes tumors, even young ones like this case, the
radiologists must be aware of the possibility of concurrent carcinoma
or in situ carcinoma. It is very difficult to identify this kind of tumor
preoperatively because, in many cases, phyllodes tumors encircle the
actual malignant or premalignant lesion. Also histopathological exami-
nation must be done meticulously because it is very easy to overlook
small in situ lesions under the actual pathologic diagnosis of benign
phyllodes tumor. As in the stromal component, the epithelial compo-
nent must be carefully investigated for malignancy.
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References