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Breast Imaging

Malignant phyllodes breast tumor

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ARTICLE INFO

Article history:

Received 24 May 2017

Accepted 26 June 2017

Available online

Keywords:

Breast

Radiology

Malignant phyllodes

ABSTRACT

Malignant phyllodes tumor is a rare tumor of the breast occurring in females usually between the ages of 35 and 55 years. It is often difficult to distinguish benign from malignant phyllodes tumors from other benign entities such as fibroadenomas. This case presentation demonstrates a woman with malignant phyllodes tumor treated with mastectomy with abdominal skin flap reconstruction.

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Clinical case

A previously healthy 89-year-old female presented with an enlarging left breast with intermittent tenderness. The left breast was “tight and warm” and had been “growing” only for the last 6–8 weeks. She denied any nipple discharge. The patient had no previous breast complaints before this.

On physical examination, the patient’s breast was at least 4 times the size of the contralateral breast and was markedly tense with the nipple sticking straight up. The skin appeared extremely taut and stretched. She stated that this appeared approximately 1.5 months ago and has been growing ever since (Fig. 1A and B). Mammography demonstrated numerous isodense multilobulated masses (Fig. 2A and B).

Sonography demonstrated numerous hypoechoic masses which were difficult to accurately measure due to their extent (Fig. 3A and B). The patient underwent vacuum-assisted ultrasound-guided core biopsies of 2 areas in the left breast (Fig. 3C) with biopsy results of fibroepithelial lesion, with areas of focal necrosis with the microscopic description stating that the histologic sections of core biopsies show proliferation of atypical spindle-shaped cells, in a myxoid background, with

areas of focal cellular necrosis, which appears to be coagulative in nature; however, tumor necrosis cannot be entirely excluded. Comment section stated that excision of this mass is recommended for complete and accurate pathologic diagnosis and further subclassification. Given the large extent of this mass, she was taken for surgical biopsy where a larger area was incised. This pathologically demonstrated malignant phyllodes tumor. The patient subsequently underwent left breast mastectomy with abdominal skin flap reconstruction. She did not undergo any chemotherapy and radiation therapy.

Discussion

Malignant phyllodes tumor is a rare lesion of the breast that can mimic benign masses such as fibroadenomas on clinical diagnosis but is characterized by a typical rapid growth [1]. They usually occur in middle-aged women ranging in age from 35 to 55 years old. They are classified into benign, malignant, and borderline tumor according to histopathologic features [2,3]. They are rare fibroepithelial neoplasms, which represent roughly 0.3%–0.9% of all breast cancers [4]. Like fibroadenomas, phyllodes tumors are composed of epithelial elements and a connective

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<https://doi.org/10.1016/j.radcr.2017.06.012>

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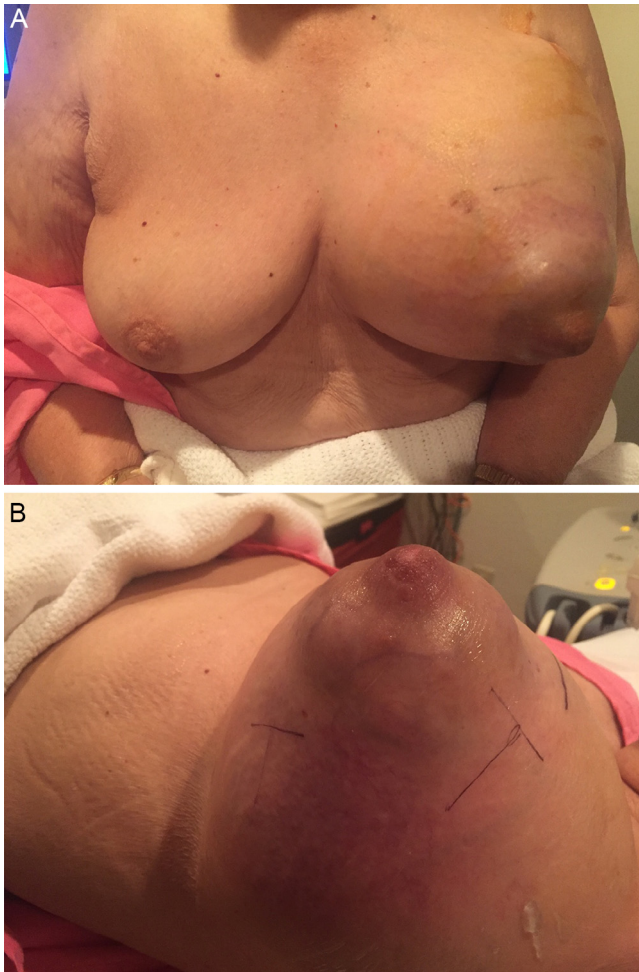


Fig. 1 – (A and B) The left breast appears extremely swollen and markedly enlarged with taut, thin skin because of the extreme large size of the mass(es).

tissue stroma, but phyllodes tumors have higher stromal cellularity [5]. In a study performed by Liberman et al., tumors 3 cm or greater in diameter at mammography were statistically more likely to be malignant. Cystic areas at sonography were more common in malignant than benign tumors, but the difference was not statistically significant. Majority present as firm, smooth, and well circumscribed, and there are no clinical features to distinguish benign from malignant phyllodes tumors from benign lesions [6]. Therefore, pseudoangiomatous stromal hyperplasia, fibroadenoma, intraductal papilloma, and complicated cyst could also be included in the differential diagnosis.

Surgical resection remains the gold standard of treatment, whereas radiation therapy and chemotherapy have a more undefined role. Most studies recommend a more than 1- to 2-cm excision margin based on the evidence that local recurrence occurs more frequently in patients with narrow surgical margins less than 1-2 cm [7-12]. However, oftentimes, an excision of this size is not possible because of the large size of the tumor and the minimal remaining normal breast tissue, such as in our case. Nodal metastases are rare in these patients; therefore, sentinel node biopsy may be necessary.

The prognosis for malignant phyllodes tumors is poor, and the role of the variety of treatment modalities is not clearly defined because of how rare the disease actually is [13]. The most common path of spread is hematogenous, which occurs mostly in the lungs, pleura, and bones, such as in sarcoma [14].

According to Ramakant et al., large or giant phyllodes tumors (>10 cm) have higher cancer rates (42.5%) and recurrence rates (41%) than smaller tumors (21% malignancy rate and 29% recurrence rates). So, more aggressive treatments and adequate resection margins are needed [15]. The use of radiation therapy and adjuvant chemotherapy is somewhat controversial and depends on extent of disease. Radiotherapy has been used with good results for local control of the disease [16] and it may be considered for high-risk phyllodes tumors, including those greater than 5 cm, with stromal overgrowth, with more than 10 mitoses per high power field, or with positive margins [6,13].

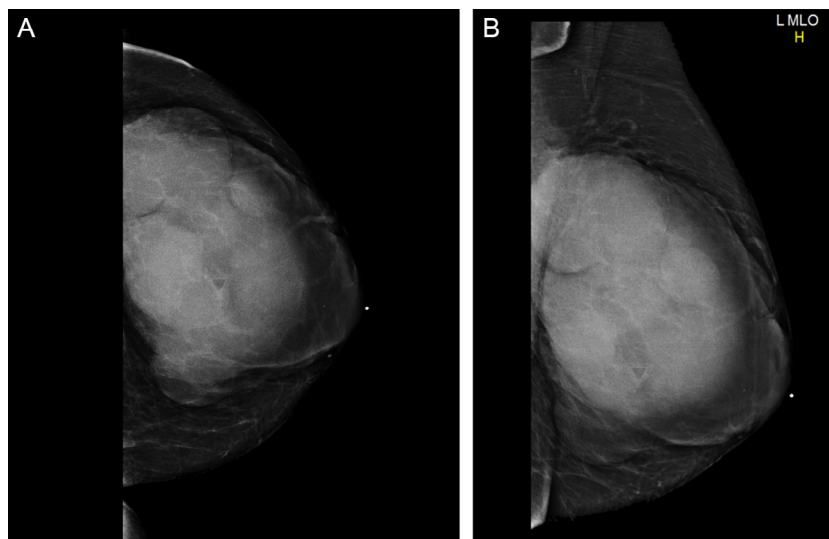


Fig. 2 – (A and B) Mammography demonstrated numerous isodense multilobulated masses, together spanning approximately 14 cm, encompassing almost the entire breast.

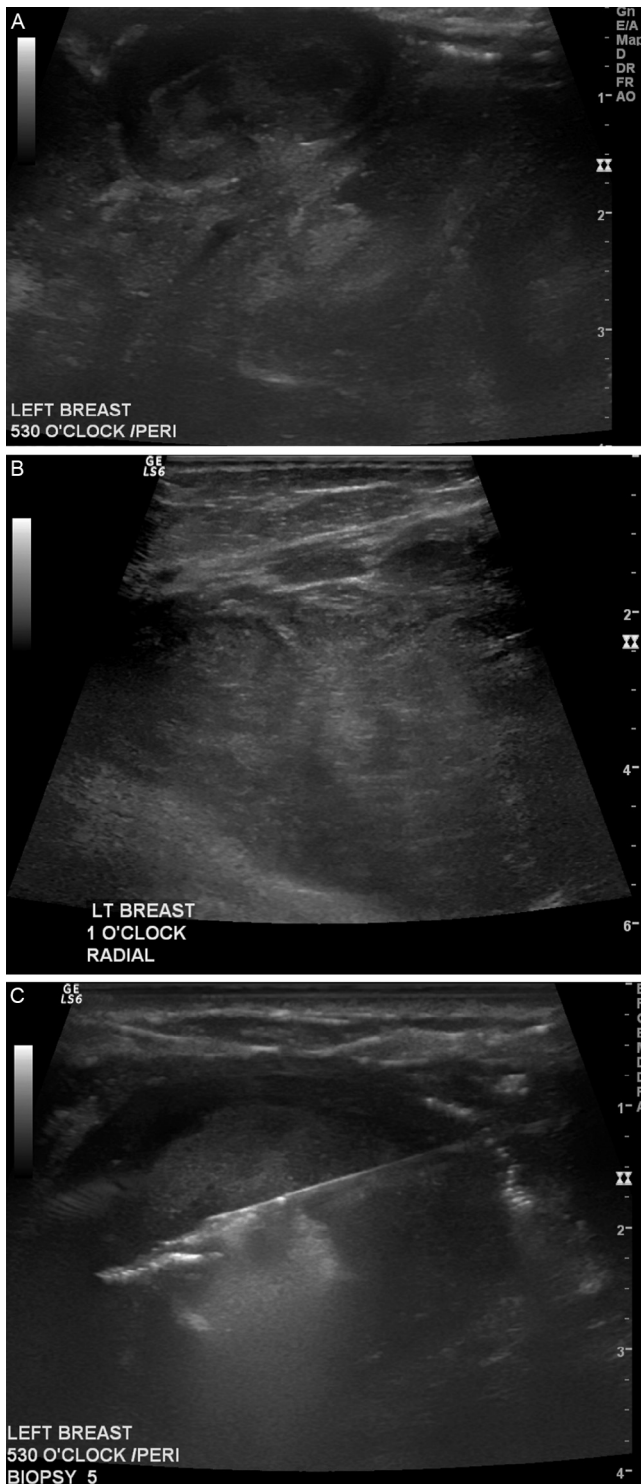


Fig. 3 – (A-C) Ultrasound demonstrated numerous hypoechoic masses, difficult to accurately measure given their extent. Some masses demonstrated peripheral vascularity but did not appear particularly hyperemic given their large size. No definite abnormal axillary lymph nodes were identified. Ultrasound-guided core biopsy was recommended with the differential diagnosis provided at that time of infiltrating ductal carcinoma vs inflammatory breast carcinoma vs infectious or inflammatory etiology given the rapid growth.

Conclusion

Malignant phyllodes tumor is a rare tumor that has an aggressive growth pattern, often leading to a markedly large palpable mass with resultant skin thickening and tenseness of the breast. Treatment is based on the size and extent of the mass with surgical resection with adequate margins extremely important in successful removal.

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