

Case Report

Low Grade Malignant Phyllodes Tumor of the Breast: A Case Report

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Abstract

Malignant Phyllodes is a rare neoplasm comprising less than 0.5 - 1% of the breast lesions. It is prevalent among females aged between 35 and 55, however, younger and older populations may also be affected. The purpose of this study is to report a low grade malignant phyllodes in a young female. A 30-year-old lady presented with a giant left breast mass. The nipple was not retracted and the mass occupied whole breast. Sonographic findings were of an aggressive tumor with deeper than wider dimensions, internal heterogeneous echogenicity, internal necrosis and cystic areas. Axillary lymph nodes were present but they had preserved hilum, symmetrical cortex and central vascularity. CT chest showed a heterogeneously enhancing mass with suspicious pulmonary nodules. She underwent total mastectomy without axillary dissection. Radiotherapy is being done.

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Introduction

Phyllodes tumor is a rare tumor of the breast in young females.¹ Malignant or borderline phyllodes is rarer as majority of these tumors are benign. These show rapid growth. They can ulcerate and hence mimic other histological types of breast cancer. They have been categorized histologically in to benign, borderline and malignant tumors according to their pleomorphism, mitosis, stromal overgrowth, necrosis and margins. Amongst these all tumors have malignant potential and can show hematogenous metastasis. The treatment is surgical resection with wide margins of resection and adjuvant radiotherapy. However, these tumors pose a diagnostic dilemma as they show similar radiological features as fibroadenomas. The distinction between them is very important as phyllodes tumors require wide resection with negative margins while fibroadenomas can be treated with enucleation.² These tumors show overlap in diagnostic features in mammographic, sonographic, core biopsy, elastographic findings. Magnetic resonance

imaging also shows similar features of phyllodes and fibroadenomas, but presence of cystic components, heterogeneous texture and lobulations favors phyllodes.³ Dynamic contrast enhanced (DCE) MRI with diffusion weighted imaging (DWI) and apparent diffusion coefficient (ADC) mapping can differentiate between the benign and malignant varieties.⁴ ADC is the measure of movement of water molecules within the tissue. The malignant lesions will show decreased ADC values representing restriction and high cellularity.

Case Report

A 30-year-old female presented to the department of plastic surgery for a rapidly growing mass in her left breast in a period of 12 months. The growth had escalated during her gestation. On clinical examination there was a huge lump in the left breast occupying all four quadrants extending up to the infraclavicular fossa measuring approximately 20 x 18 cm.. The overlying skin was stretched showing

dilated veins and multilobulated surface. On palpation the lump was non-tender, soft, well defined and multilobulated with pinchable overlying skin but fixed with the chest wall. No axillary or cervical lymph nodes were palpable. The patient was referred to the radiology department for ultrasound of breast and axilla. USG showed a large heterogenous tumor with necrotic and intramural cystic areas, internal vascularity and posterior acoustic shadowing. The picture closely resembled a giant fibroadenoma, though no definitive appearance in the tumor margins or sonographic features could predict its malignant nature apart from the humongous size. The tumor had lobulated smooth surface which correlated with the encapsulated specimen taken later. Few ipsilateral axillary lymph nodes with preserved hilum and reniform shape were reported to be reactive in nature. USG guided FNAC of the axillary lymph node was performed. The result was inconclusive. Then a true cut biopsy of the mass was done which showed bland spindle cell proliferation. This was followed by incision biopsy which showed fibroepithelial lesion favoring phyllodes but didn't state whether there was any malignant transformation or not. CT chest with contrast was performed which showed a large heterogeneously enhancing mass inseparable from underlying pectoralis muscles, sub centimetric left axillary lymph nodes and with suspicious pulmonary nodules. MRI was prompted but the patient refused.

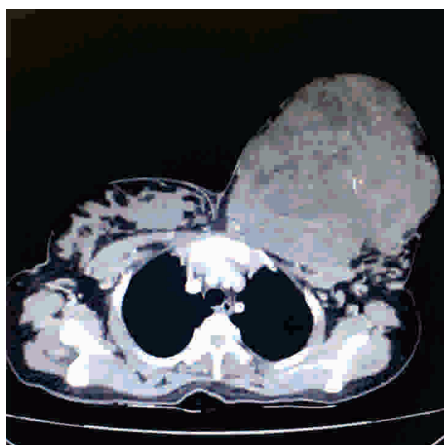


Fig1. Chest Computed Tomography Showing Heterogenous Mass Infiltrating the Left Pectoralis Major.

Total mastectomy without axillary dissection was carried out. The lump was excised along with the nipple areola complex and central ellipse of skin stretched out. The lump was excised as a whole along with pectoralis major muscle with 2 cm tumor free

resection margins all around the lump.

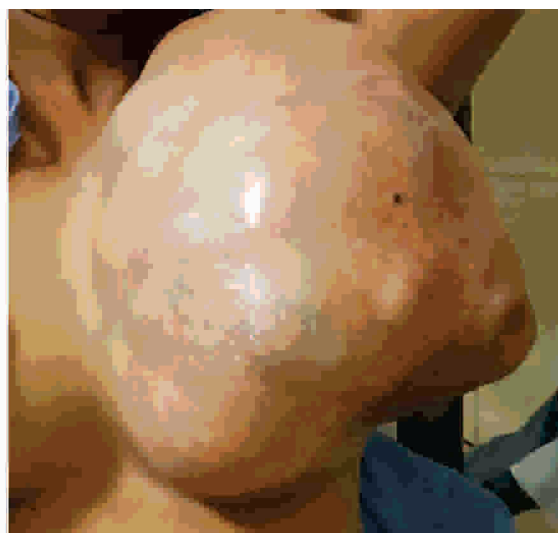


Fig 2. The Left Breast with Humongous Mass and Lobulated Contour.

Specimen was sent to the histopathologist

The gross specimen measured $17 \times 17 \times 16.5$ cm without axilla. Serial slices revealed an intact encapsulated tumor showing solid and cystic cut surface with leaf like areas. Histopathological examination revealed mild pleomorphism and mitosis 9/10 HPF, epithelial and stromal component showing slit like ductal structures with areas of hyalinization and calcification. Skeletal muscle was free of tumor infiltration. No post-operative complications were reported. As a follow up of the pulmonary nodules, CT scan was performed which revealed indeterminate pulmonary nodules and advised follow up after 4 months.

The patient was then referred to oncology department. The oncology team decided to start adjuvant radiation therapy 1 month after the resection. The patient was in good condition and very happy on her recent visit to the department on 08-10-18.

Discussion

Phyllodes tumor (PT) is a rare breast lesion. Malignant transformation is even rarer. It arises from the periductal stroma⁵. The tumor can be classified into benign, low grade malignant (borderline) or malignant according to its biological behavior, mitosis and cell atypia. AS the tumor grows rapidly, it doesn't exhibit any calcification. Local recurrence rate is high due to inadequate excision and leaving behind margins not free of tumor.⁶ The mean age for low grade malignant tumor is 37 years and 41 years for malignant. Our patient was younger than the mean age. Statistics also reveal that PTs are more frequently found in the left breast than the right, as was in our case. Probability of malignancy increases with increase in size of the tumor to more than 3cm.⁷ The

mean size for border line tumors is 10cm, and can grow up to 40 cm in size. The sonographic features of benign and malignant breast lesions show significant overlap. Features of round or oval shape, mildly hypoechoic internal echotexture, smooth borders or a pseudo capsule, homogeneous internal echoes, no central posterior acoustic shadowing, normal surrounding tissue and slight change of shape by probe pressure compression are suggestive of benign masses.⁸ Lesions having irregular shape and margins, are hypoechoic, have a surrounding echogenic rim or halo and posterior acoustic shadowing are predominantly malignant.⁸ Sonography alone is unable to distinguish between malignant, borderline and benign phyllodes tumors.

Axillary nodal involvement is rare. In our case axillary lymph nodes were seen but they were reactive in nature with preserved hilum. This tumor primarily has hematogenous spread, in this case too suspicious nodules were seen in the lungs for which radiotherapy was started.⁹ FNAC has limited value as this is a focal study and heterogeneity of the PT is not represented sufficiently in the material. Core biopsy cannot always differentiate between benign, borderline and malignant PTs.¹⁰ This distinction is important because, unlike fibroadenomas, phyllodes tumors require wide excision with negative margins.¹¹

The diagnostic accuracy of mammography, US and MRI would be 70%, 62.5% and 95.8%, respectively.¹² The tumor size and several US and MRI findings can be used to help preoperatively determine the histologic grade of breast PTs. When a patient presents with a progressively enlarging, painless breast mass, MRI should be recommended first.¹³ MRI coupled with DWI imaging can differentiate between the benign and malignant phyllodes.¹⁴ The malignant tumors will show decreased ADC values that indicate restricted diffusion and high cellularity⁴.

Surgery is the main stay of treatment with total mastectomy superior than breast conservation surgery. Breast conserving surgery may suffice for benign lesions but is contraindicated in patients with giant, multifocal or malignant tumors¹⁵. Radiotherapy is being used to get better local control for borderline PTs and also when surgical margins are close or positive even after best surgical resection⁹.

Our case is distinctive as it showed intramural cysts which is very rare along with suspicious pulmonary nodules.

Follow-up

The patient is on follow up for 1 year to check for tumor relapse and the pulmonary nodules.

Conclusion

Our study has concluded that in border line phyllodes of the breast, FNAC and incisional biopsy have little

value, excision biopsy is diagnostic. Significant overlap in mammographic and sonographic findings is seen. MRI DWI has high specificity to differentiate between the benign and malignant phyllodes. Surgery with total mastectomy and local wide margins free of tumor are the main stay of treatment. Relapses are associated with inadequate local excision. Radiotherapy for pulmonary nodules increases survival rate.

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