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Original Research Article

Incidence of phyllodes tumors of breast at a single centre in Allahabad, Uttar Pradesh, India

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ABSTRACT

Background: Phyllodes tumor of breast is the rare fibro-epithelial tumor of breast constituting <1% of breast neoplasms. They are locally aggressive tumor and suddenly attain a big size. Fine needle aspiration cytology should have both stromal and epithelial component to make the diagnosis. Wide local excision of 1 to 2 cm margin of normal breast is the treatment of choice for tumour of <10 cm in size and simple mastectomy for tumor more than 10 cm. This study was conducted to evaluate the incidence and outcome after surgery for phyllodes tumor at our centre.
Methods: Data of 15 patients at our centre was retrieved retrospectively from January 2011 to April 2016.
Results: Out of these 15, 14 were female and 1 was male. 14 of them undergo wide local excision under general anesthesia while in one of the patients simple mastectomy was done. Based on tumor histology they are divided into 3 histotypes i. e. benign, borderline, and malignant. 12 patients were found to be benign, 3 borderline and none malignant. Out of 3 borderline disease patients 1 developed recurrence 8 months later to initial surgery. Wide local excision was done for total of 10 times and every time histopathology revealed borderline phyllodes but last report revealed sarcomatous changes. Patient also developed lung metastases and so was referred to oncology department and review histopathology revealed low grade spindle cell sarcoma. Full radiotherapy and complete course of MAID chemotherapy regimen was given but patient still developed local recurrence and metastasis to lungs. All patients in benign category were doing well and none of them developed recurrences in due course.
Conclusions: Phyllodes tumor is an interesting entity for both surgeons as well as pathologists because of its rare occurrence and varied histological features. Rapidly growing nature of this tumor does not necessarily indicate malignant disease. No correlation was found between tumor size and recurrence.

Keywords: Breast, Phyllodes tumor, Treatment and prognosis

INTRODUCTION

Phyllodes tumors are very rare tumors of fibro-epithelial components representing less than 1% of all breast neoplasms.[1-3] Johannes Muller first described this tumor in 1938 and gave the term "cystosarcoma phyllodes" a misnomer; because these tumors are benign in course and cystic component is very rare.[4] Now phyllodes tumors are regarded as a spectrum of fibro-epithelial neoplasms rather than a single disease entity. Peak age of presentation of these tumors is 45 years, 20 years later than age for fibroadenomas but can present at any age including adolescence.[5-8] They are locally aggressive tumor and suddenly attains a big size. Fine needle aspiration cytology should have both stromal and epithelial component to make the diagnosis.[9] These tumors are classified into three subtypes benign, borderline and malignant.[10,11] A borderline tumor behaves like benign but malignant phyllodes tumors behaves like sarcoma. Wide local excision of 1 to 2 cm margin of normal breast is the treatment of choice for tumour of <10 cm in size and simple mastectomy for tumor more

than 10 cm. Chemotherapy and radiation therapy is used as palliative therapy for metastatic tumors. Hormonal therapies have no role in the treatment of these patients.

METHODS

Data of 15 patients at our centre was retrieved retrospectively from January 2011 to April 2016. Only patients with diagnosed phyllodes tumor are included in the study.

Table 1: Clinical characteristics of the tumor.

Variable	No. of patients	%
Age (years)		
Range	30-50	100%
Mean	40	--
<40	06	40%
≥40	09	60%
Presenting symptoms		
Lump	11	73.3%
Painful lump	04	26.6%
Symptoms duration		
<6 months	05	33.3%
6 mnths-2 years	07	46.6%
>2 years	01	06.6%
unknown	02	13.3%
Tumor size (mm)		
<20	02	13.3%
20-50	08	53.3%
51-100	04	26.6%
>100	01	06.6%
Palpable lymph nodes		
Yes	00	00%
No	15	100%
Metastasis at diagnosis	00	00%
Surgery		
Wide local excision	14	93.3%
Mastectomy (simple or radical)	01	06.6%
Adjuvant treatment		
None	14	93.3%
Chemotherapy	01	06.6%
Radiation therapy	01	06.6%

Table 2: Azzopardi and Salvadori et al criteria for histological classification of phyllodes tumor.

Criteria	Histological type		
	Benign	Borderline	Malignant
Tumor margins	Pushing	↔	Infiltrative
Stroma cellularity	Low	Moderate	High
Mitotic rate (per 10 hpf)	<5	5-9	>10
Pleomorphism	Mild	Moderate	Severe

Age at the time of presentation was ranged between 30 years to 50 years (mean 40 years). Table 1 shows clinical characteristics of the tumor in all patients included in the study. Data of all 15 patients were analysed, assessed and then divided in 3 main categories based on histopathological characteristics (Table 2, 3).

RESULTS

14 of them undergo wide local excision under general anesthesia while in one of the patients simple mastectomy was done. Based on tumor histology they are divided into 3 histotypes i. e. benign, borderline, and malignant (Table 2 and 3).

Table 3: Histopathological characteristics of the tumor.

Factor	No. of patients (n=15)	% of patients
Tumor size		
<5cm	10	66.6%
≥5cm	5	33.3%
Surgical stump		
Negative	15	100%
Positive	00	00%
Histology		
Benign	14	93.3%
Borderline	01	06.6%
Malignant	00	00%
Mitotic activity		
Low (<4 per 10 hpf)	10	66.6%
Moderate (4-9 per 10 hpf)	04	26.6%
High (≥10 per 10 hpf)	01	06.6%
Stromal overgrowth		
Absent	14	93.3%
Present	01	06.6%
Stromal cellular atypia		
Mild	12	80%
Marked	03	20%

Figure 1: Resected specimen 6×6 cm.

12 patients were found to be benign, 3 borderline and none malignant. Out of 3 borderline disease patients 1 developed recurrence 8 months later to initial surgery (Table 4).

Table 4: Site distribution of phyllodes tumor.

Site	Benign	Borderline	Malignant	Total
Right	6	0	0	6
Left	8	1	0	9

Wide local excision was done for total of 10 times and every time histopathology revealed borderline phyllodes but last report revealed sarcomatous changes.

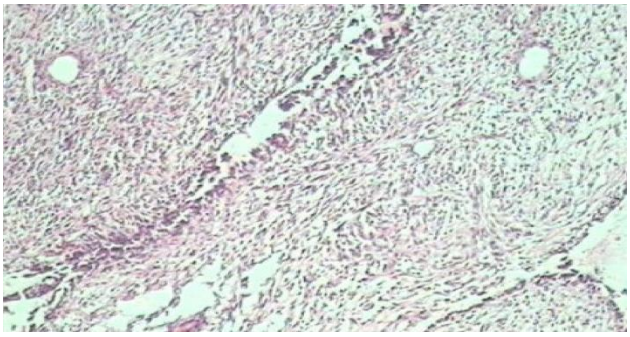

Figure 2: Histopathology showing both stromal and epithelial components.

Patient also developed lung metastases and so was referred to oncology department and review histopathology revealed low grade spindle cell sarcoma. Full radiotherapy and complete course of MAID chemotherapy regimen was given but patient still developed local recurrence and metastasis to lungs. All patients in benign category were doing well and none of them developed recurrences in due course.

Figure 3: Local recurrence.

DISCUSSION

Rapid growth of phyllodes tumor and its size doesn't have any correlation with malignant nature of the tumor. Both surgeon and pathologist should be aware of the fact that fibroadenomas and phyllodes tumors both are fibroepithelial tumors but histologically distinct entity. So both stromal and epithelial components are necessary for the diagnosis. The stromal component of the tumor has the malignant potential, can metastasize and determines the pathological behaviour.[12] Etiological relationship between fibroadenoma and phyllodes tumor is not clearly defined yet but some common features have been identified in some tumors.[13]

Most cases of phyllodes tumor come in benign category in our study and others also, while very small no. of cases comes under malignant category and that's why this category has a very narrow range of ages.[14] Most metastases occurs in malignant and borderline group but can occur in benign also.[15]

Most common mode of presentation is painless mass which is firm, well defined, lobulated and mobile. Because there is no pathognomonic feature of this tumor, the diagnosis is delayed in most of the patients which ultimately leads to giant tumors in very short duration owing to its rapid growth. In one study family history was positive in about 50% of the patients, half of that with maternal first-degree relative affected.[16] Average diameter of benign tumor was 4 cm in this study for benign tumor and 6 cm for malignant (Table 1). In present study no correlation was found between tumor size, recurrence and histology. In this study most of the recurrences have been noted in larger tumors, may be because of incompletely resected margins. A direct correlation was found between tumor size and metastasis as in other studies.[17-19] It was noted in this study that phyllodes tumor has been more common in left breast than right. Its exact cause has not been established yet in different studies.[20]

Surgery for phyllodes tumor is universally accepted as wide local excision with 1 cm margin, if preoperatively diagnosed while wait and watch policy for phyllodes tumor diagnosed after local excision of what appeared to be a fibroadenoma.[21,22] If recurrence is there then wide local excision should be done with proper margin clearance. Sometimes widespread chest wall disease can involve lung parenchyma, however very uncommon but palliation with radiotherapy and chemotherapy is done.[17,23,24] Lymph node metastasis is extremely rare with phyllodes tumor so there is no role of lymph node excision.[25] Estrogen receptors are positive in upto 40% and Progesterone receptors positive in almost all patients but role of hormone therapy has not been extensively studied yet.[26,27]

CONCLUSION

Phyllodes tumor is an interesting entity for both surgeons as well as pathologists because of its rare occurrence and varied histological features. Rapidly growing nature of this tumor does not necessarily indicate malignant disease. No correlation was found between tumor size and recurrence.

In setting of tumor margins with stromal overgrowth, local recurrence was found to be higher in comparison to margin with no stromal overgrowth. So stromal overgrowth may be a factor for local recurrence but has to be studied further.

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