

# PHYLLODESTUMOR OF THE BREAST: A CASE SERIES

## ABSTRACT

**Background:** Phyllodes tumor is a rare fibroepithelial tumor of the breast comprising less than 1% of all breast tumors. Most of these tumors are benign but some have malignant potential. The aim of the study was to evaluate the clinical characteristics, treatment and post operative complications in patients with phyllodes tumor.

**Methods:** This retrospective study was conducted at Assam Medical College and Hospital, Dibrugarh for a duration of 1 year (May 2022 to May 2023). Total 12 histologically confirmed cases of phyllodes tumor were included in the study from hospital records of the institution.

**Result:** The median age of diagnosis at the time of admission was 36 years with a range from 13 to 49 years. 11 out of 12 cases were benign, whereas 1 was found to be of borderline malignancy. All patients underwent operative interventions - excision of the tumor in 8 patients, simple mastectomy in 3 patients and MRM in one patient. No postoperative complications or recurrence were observed during the period of followup.

**Conclusion:** Local excision of the tumor is adequate in all the benign phyllodes tumors, whereas borderline phyllodes and malignant tumors were best treated by simple mastectomy.

Comment [MA1]: tumor

**Keywords:** Phyllodes, Mastectomy, Breast

## 1. INTRODUCTION

Phyllodes tumor is a rare tumor of the breast in comparison to other histologic subtypes, however itself is not a rare tumor, accounting for <1% of all breast malignancies<sup>(1,2)</sup>, and has an incidence of about 2.1 per million. Most of these tumors are benign, but some have a malignant potential. These tumors commonly occur in females during the 4th or 5th decade of life. They can grow rapidly and the associated symptoms can mimic other types of breast carcinoma, particularly if the mass ulcerates and bleeds. Phyllodes tumor usually compresses the surrounding tissue from which it is usually well demarcated. The bulk of this tumor is connective tissue with mixed gelatinous cystic and solid areas<sup>(3)</sup>, the number of mitoses may help in the diagnosis of the malignant subtype<sup>(4-6)</sup>. The only treatment option for these tumors is surgical removal<sup>(3)</sup>. Phyllodes tumors often present a diagnostic and treatment dilemma. The phyllodes tumors are classified into benign, borderline, and malignant categories based on the degree of stromal cellular atypia, mitotic activity, degree of stromal overgrowth, tumor necrosis, and margin appearance. Borderline tumors have the greatest tendency for local recurrence<sup>(6,7)</sup>. All forms of phyllodes tumors have malignant potential<sup>(5)</sup>. A five-year survival rate was observed in almost 100% of patients with benign tumors, 98% with borderline, and about 88% with malignant<sup>(6)</sup>. Depending on malignant potential, bulky tumor, recurrence, and status of resection margins, the treatment may vary between wide local excision with 1 cm breast tissue or radiotherapy<sup>(10)</sup>. Revision surgery may be required for a high percentage of tumors with inadequate margin removal, and radiotherapy after breast surgery may significantly reduce the local recurrence rate for borderline and malignant tumors<sup>(9,11)</sup>.

Comment [MA2]: Lesions or tumors

## 2. CASE PRESENTATION :

A total of 12 cases were evaluated retrospectively from hospital register of Assam Medical College & Hospital, who were clinicopathologically diagnosed as phyllodes tumors. The duration of study was 1 year, from May '22 to April '23. All cases had a palpable mass in the affected breast but no palpable axillary (except one case) or supraclavicular lymphadenopathy at the time of presentation. Ultrasonography and chest x-ray radiography were performed in all the cases prior to surgery. Abdominal computed tomography (CT) scan was performed post-operatively for the borderline lesion to rule out any metastatic disease. Appropriate surgical plans were formulated depending on the findings. Treatment modalities were excision of the tumor, simple mastectomy and modified radical mastectomy

(MRM) for one case on clinical suspicion of malignancy. No postoperative complications or recurrences were observed in the follow-up notes of the patients.

### 3. RESULTS

**Table 1 Number of cases with phyllodes tumor**

Sl. No.	Age	Presenting complaint	Side	HPE No.	Size	Operative procedure	anesthesia	Variety	complication
1.	31	Lump	Left	2441/22	14x13x10	MRM	GA	Benign	None
2.	18	Lump	Left	2762/22	5x4x3	Excision	GA	Benign	None
3.	35	Lump	Right	3604/22	15x14.5x11	Excision	GA	Benign	None
4.	45	Rapidly progressing lump	Right	4363/22	12x11x8	Simple mastectomy	GA	Benign	None
5.	23	Lump	Bilateral	747/23	L=2x1.5x1.5 R=2.5x2x2	Excision	GA	Benign	None
6.	49	Lump	Right	1895/23	9x7.5x4	Excision	GA	Benign	None
7.	16	Lump	Right	2341/23	6x4x3	Excision	GA	Benign	None
8.	13	Lump with Pain	Left	2371/23	13x12x6	Simple Mastectomy	GA	Borderline	None
9.	39	Lump	Right	2495/23	6x4x4	Excision	GA	Benign	None
10.	37	Lump	Left	2511/23	10x10x8	Excision	GA	Benign	None
11.	28	Rapidly progressing lump	Left	3151/23	16x16x8	Simple mastectomy	GA	Benign	None
12.	31	Lump	Left	3702/23	3x1.5x1.5	Excision	GA	Benign	None

Comment [MA3]: Stated as in cm

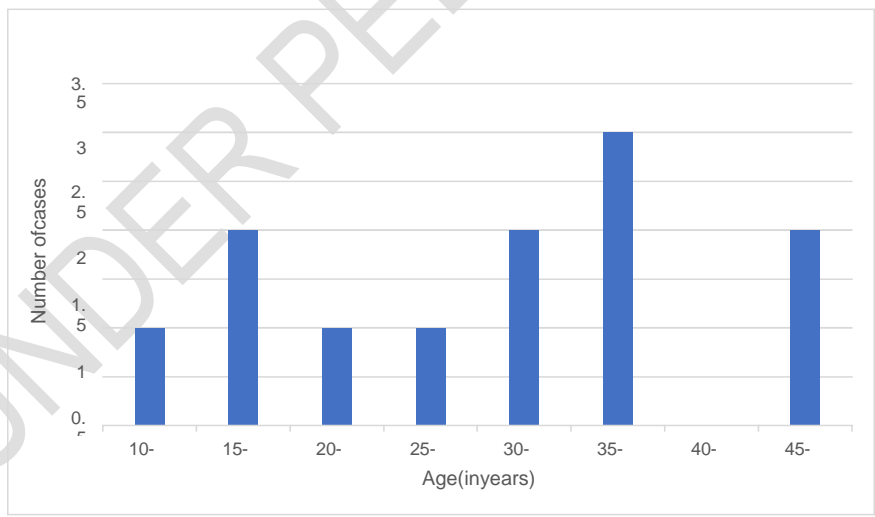
**Table 2 Common presenting complaints with which patient presented to outpatient department (OPD).**

Sl.No.	Presenting symptom	Number of cases	Percentage
1.	Slowly progressing swelling	9	75%
2.	Rapidly progressing swelling	2	17%
3.	Pain	1	8%
4.	Skin changes	0	0

The median age at diagnosis was 36 years (range 13-49 years). 11 (92%) out of 12 tumors were benign and 1 (8%) was borderline. In 6 (50%) of the cases, the tumor was on the left side, 5 (42%) on the right side and 1 (8%) was bilateral. All the cases the patient presented with a breast lump of which only

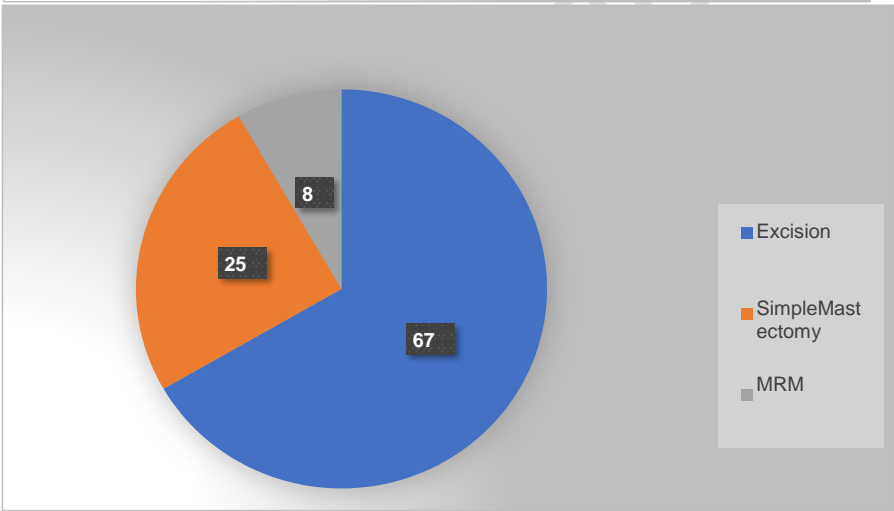
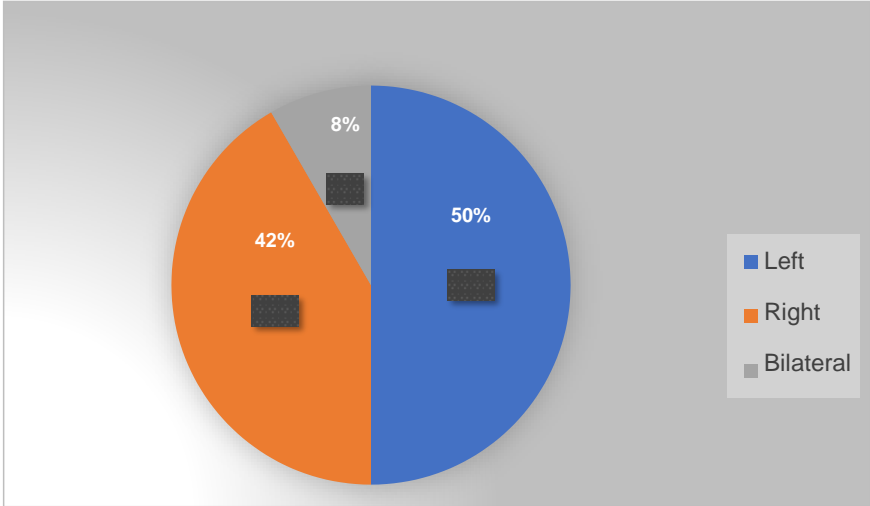
1 (8%) presented with pain over the lump. Rapid growth of the breast lump was noted in 2 (17%) of the cases. Excision of the breast lump was the treatment of choice in 8 (67%) of the cases where as simple mastectomy was performed in 3 (25%) of the cases presenting with rapid growth of the breast lump. In 1 (8%) case modified radical mastectomy (MRM) was performed on the basis of clinical suspicion for malignancy. All interventions (100%) were done under general anesthesia. No post-operative complications were documented in the records.

**FIGURE 1** Pie chart showing Age Distribution



**FIGURE 2** Pie chart showing Side distribution

Comment [MA4]: Column, not pie



**FIGURE 3** Pie chart showing Treatment distribution

#### 4. DISCUSSION

Phyllodes tumors are rare, representing only 0.3% to 0.9% of all breast tumors<sup>(12,13)</sup>. Phyllodes tumors occur at any age, from 10 to 90 years<sup>(13,14,15)</sup>, with a peak incidence between 30 and 40 years (a decade later than the average presentation of fibroadenoma). A breast lump is the most common presenting symptom, representing up to 90% of cases<sup>(16,17)</sup>. It is common for a "fibroadenoma" to be reclassified as a phyllodes tumor after excision of the mass. In the study by Hassouna et al<sup>(46)</sup>, 106 patients with phyllodes tumor were reviewed, retrospectively. They reported only 9 patients with the history of a benign breast lump, and 7 cases were confirmed as fibroadenomas. 37% of the patients with phyllodes tumor had the history of fibroadenoma<sup>(47)</sup>. In our study out of 12 cases, 8 (67%) were preoperatively diagnosed as fibroadenoma and only 4 cases were labeled as phyllodes tumor which includes the borderline phyllode and axillary lymphadenopathy case.

The diagnosis of phyllodes tumor is difficult since the rapid growth and/or large size of apparent fibroadenoma may be the only imaging findings suggestive of phyllodes tumor. Phyllodes tumor often mimics fibroadenoma at mammography<sup>(48,49)</sup>.

In the literature, the tumor size varies between 5 and 270 mm, with a mean size between 50 and 72 mm<sup>(14,19-21)</sup>. Historic tumors with sizes reaching up to 450 mm have been described<sup>(17,22)</sup>.

Phyllodes tumors are unilateral in 96% of cases with very few cases of bilaterality reported<sup>(23-25)</sup>. A few cases of PT arising with ectopic mammary tissue have been reported in the axilla and vulva<sup>(26-28)</sup>. In our study, only 1 case of bilateral PT was found.

In 1996, Liberman et al<sup>(29)</sup> concluded in their study of 51 phyllodes tumors, that a tumor with a mammographic diameter of 30 mm or greater appears to be associated with a higher likelihood of malignancy. Conversely, Jorge Blanco et al<sup>(30)</sup> found in their series of 154 cases that the mean size on mammography was 41 mm and 90 mm in malignant and benign phyllodes tumor, respectively.

Surgery is the mainstay of treatment for phyllodes tumors, but the extent of surgery remains controversial, particularly for borderline and malignant phyllodes tumor. Regardless of their histology, all phyllodes tumors recur, although the risk of local recurrence is low in benign forms, ranging from 4.7% to 30%, and notably higher in borderline and malignant forms (30%–65%)<sup>(31,32)</sup>. In the literature, most authors agree that the correct procedure for benign phyllodes tumor is a wide local excision allowing a 1 to 2 cm margin in all directions<sup>(32,33)</sup>. On the contrary, Zurrida et al<sup>(34)</sup>, in their largest series, concluded that when benign phyllodes tumor is encountered unexpectedly, a wait-and-see policy is justified because of the low local recurrence rate of benign phyllodes tumor and the rarity of preoperative diagnosis<sup>(35,36)</sup>. In the past, the treatment of choice for borderline and malignant phyllodes tumor was simple or radical mastectomy. Currently, most authors favor conservative surgery because local recurrences do not appear to be related to the systemic spread of the disease<sup>(37)</sup>. Conversely, Barth<sup>(32)</sup> in a large review of the literature found that the recurrence rate was as high as 46% and 65% after local excision for borderline and malignant phyllodes tumor, and these rates remained high even after wide local excision (29% and 36%). In contrast, Asoglu et al<sup>(38)</sup> found no significant difference in terms of local control when wide local excision or mastectomy was performed for benign and malignant forms.

Many authors consider that axillary lymph node dissection is not useful, whereas others prefer to use it only in cases of clinically suspect adenopathy or invasive carcinoma within phyllodes tumor. Matareta<sup>(18)</sup> in 1995 observed 3 cases of lymph node involvement among 9 lymph node clearances, whereas Kapiris et al<sup>(39)</sup> in 2001 showed no lymph node invasion among 21 patients with malignant phyllodes tumor undergoing lymph node dissection. According to Rowell, Cohn, and Norris<sup>(13,40,41)</sup>, of 10% to 15% of patients presenting with clinical axillary adenopathy, less than 1% had pathological nodes. In our series, 1 case had breast mass with axillary lymphadenopathy, for which she was operated by simple mastectomy on clinical suspicion. However, the histopathological examination showed phyllodes tumor with reactionary lymphadenitis of the axillary lymph nodes.

The frequency of local recurrences varies between 0% and 60% according to various series in the literature<sup>(21,33,37,38,42,43)</sup>. According to some authors, malignant phyllodes tumor recur in 24% to 58% of cases, whereas benign phyllodes tumor recur only in 4.3% to 27% of cases<sup>(14,20,33,38)</sup>. Other factors are identified to be risk factors for local recurrences such as surgical margins, nuclear atypia, and stromal overgrowth<sup>(33,37)</sup>. Recurrence histotypes are generally identical to the primary tumor. However, sarcomatous transformation can occur during recurrence after resection of benign or borderline phyllodes tumor<sup>(44)</sup>. Reinfuss et al<sup>(33)</sup> explains this transformation by the existence of malignant foci that might have been missed on pathological examination.

The distant metastases rate varies considerably, from 6.6% to 70%, and most of them occur in lung (84.5%) and bone (39%)<sup>(33,39)</sup>. Moffat et al<sup>(37)</sup> report that patients with local recurrence do not develop distant metastases. On the contrary, Kapiris et al<sup>(39)</sup>, Hajdu et al<sup>(44)</sup>, and West et al<sup>(45)</sup> showed that among patients having metastases, 60% to 85% had already developed local recurrences.

The 5-year disease-free and overall survival varies, according to other series, ranging from 60% to 92%<sup>(32,39)</sup>

In our series, there was no documentation of any recurrence. However, no proper inference can be drawn from this due to short follow-up period of the cases.

## 5. CONCLUSION

Phyllodes tumor represents a heterogeneous group of tumors sharing the same macroscopic features with that of a fibroadenoma. Their prognosis depends on the histological and biological characteristics of the tumors rather than their clinical behaviour. The data concerning the prognostic factors of phyllodes tumor are conflicting, and further studies are warranted. Surgery remains the cornerstone of treatment.

## 6. LIMITATIONS OF THE STUDY

The main limitation of this study are inclusion of small number of cases and short duration of follow up.

## 7. ETHICAL CLEARANCE

Taken from institutional ethics committee.

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