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## Case Report

# A Rare Encounter: Massive Phyllodes Tumor of the Breast - A Case Report and Comprehensive Review

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## ABSTRACT

Phyllodes tumors of the breast, rare fibroepithelial neoplasms, present diagnostic and management challenges due to their diverse presentation and unpredictable behavior. This case report discusses a 47-year-old female presenting with a large right breast mass, initially managed with alternative therapies. Examination revealed a 20x10x10 cm mass, diagnosed as a phyllodes tumor via core needle biopsy. A simple mastectomy was performed, with histological analysis confirming a benign phyllodes tumor. The patient recovered uneventfully and was monitored regularly for six months. This case underscores the importance of differentiating phyllodes tumors from fibroadenomas, advocating for core needle biopsy for accurate diagnosis. Surgical excision with negative margins remains the cornerstone of treatment to mitigate recurrence risks. Comprehensive understanding of the tumor's histopathology, epidemiology, and clinical outcomes is essential for effective management and improved patient prognosis.

**Keywords:** Phyllodes tumors, breast neoplasms, core needle biopsy, surgical management, fibroepithelial neoplasms

## INTRODUCTION

Phyllodes tumors of the breast represent a unique subset of fibroepithelial neoplasms characterized by their distinct histological features and clinical behavior, with prevalence ranging from 0.3% to 1% (1) (2). In 1981 the World Health Organization adopted the term phyllodestumor and subclassified them histologically as benign, borderline, or malignant. The majority of phyllodestumors have been described as benign (35% to 64%), with the remainder divided between the borderline and malignant subtypes (3). Despite their rarity, these tumors pose diagnostic and management challenges due to their variable presentation and unpredictable biological behavior. Although it can occur at any age from adolescents to elderly, in most of the cases occurs between 35 and 55 yrs of age. Understanding the epidemiology, histopathology, molecular characteristics, and clinical outcomes of phyllodestumors is essential for improving diagnostic accuracy, treatment strategies, and patient outcomes. They share morphological similarities with intracanalicularfibroadenomas, particularly at the benign end of the spectrum, but exhibit higher stromal cellularity and a leaf-like structure. These tumors are categorized into benign, borderline, and malignant grades based on various histological characteristics, including stromal, cellularity and atypia, mitotic count, stromal overgrowth, and tumor border characteristics (4). In this research article, we provide a case report of phyllodestumor with comprehensive review of the current knowledge surrounding phyllodestumors of the breast, highlighting recent advances in research and clinical management.

## CASE REPORT:

**Clinical presentation:**

A 47-year-old female presented to the outpatient department (OPD) with a progressively enlarging lump in her right breast over the past 7 months. Before visiting our institution, she had been undergoing alternative medical therapy, specifically ayurvedic treatment, for 5 months. There was no reported family history of similar conditions. Examination revealed a substantial mass measuring 20 × 10 × 10 cm, occupying the entire right breast, without adherence to the overlying skin or underlying muscle. Two areas of pressure necrosis were noted on the skin overlaying the inferior aspect of the breast. No additional palpable masses or signs of axillary lymphadenopathy were detected.

**Laboratory and imaging findings:**

All hematological investigations yielded results within the normal range. Fine needle aspiration cytology indicated features consistent with a complex fibroadenoma. Subsequently, a core needle biopsy was performed, revealing a diagnosis of phyllodes tumor.

**Operative findings:**

Macroscopic examination revealed a tumor measuring the specimen measured 17x12x10 cm, overlying skin measured 20x7 cm and weighing 1.5 kg. Subsequently, the patient underwent a simple mastectomy. (Figure 1,2)

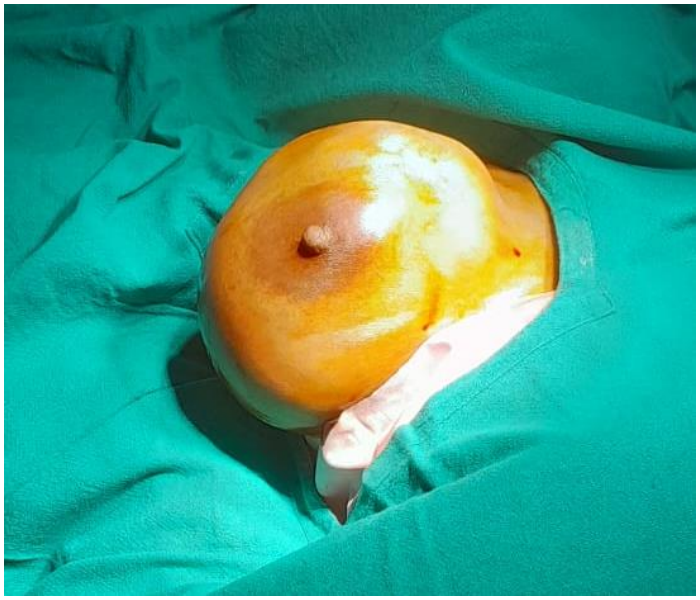

Figure 1: Image depicting a breast mass involving the entire right breast.

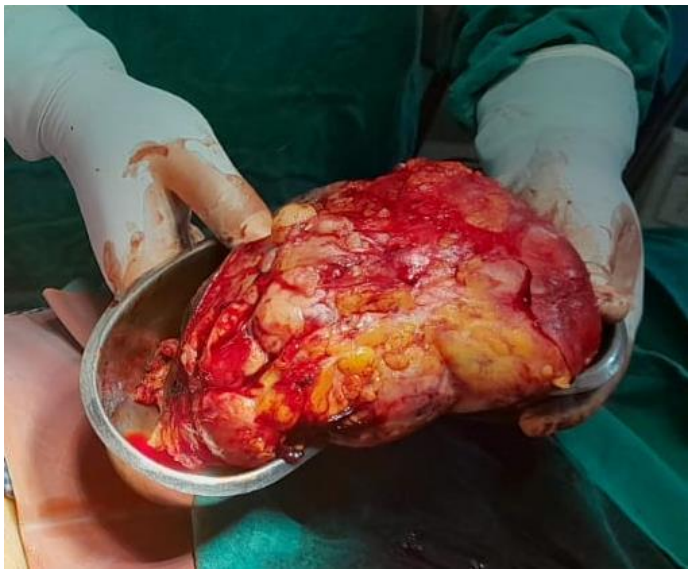

Figure 2: Image displaying the excised specimen of a phyllodestumor mass.

Microscopic findings:

Histological sections stained with Hematoxylin and Eosin (H&E) reveal characteristics consistent with a benign phyllodes tumor. Mitoses are observed (3-4/10 HPF), with no evidence of cytological atypia or atypical mitosis.

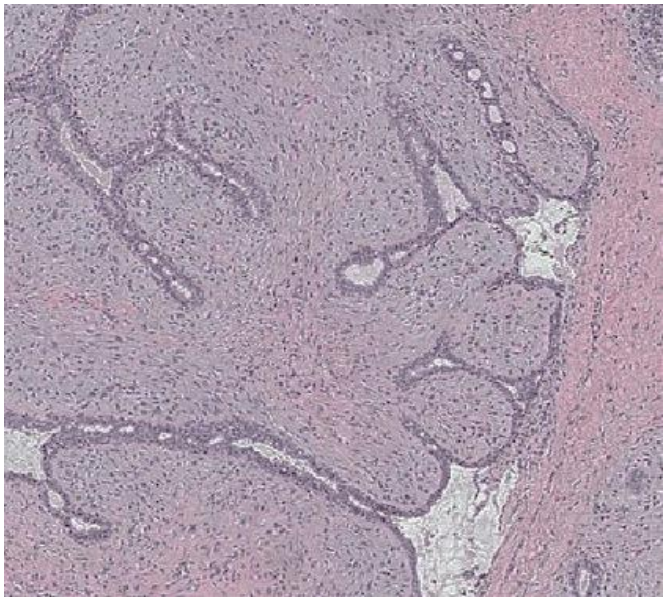

Figure 3: HPE image showing prominent intracanalicular architecture with focal leaf-like structures, increased stromal cellularity, and absence of stromal overgrowth, mitoses, or atypia, indicative of a benign phyllodes tumor.

Follow-up:

The patient had an uneventful recovery after surgery and kept under monthly regular follow-up for 6 months.

## DISCUSSION

Phyllodes tumors, rare fibroepithelial neoplasms, account for approximately 0.5% of breast tumors(5). Their clinical challenges stem from diverse presentations and unpredictable behaviors. Malignant phyllodes tumors remain enigmatic due to their rarity and inherent aggressiveness, comprising both stromal and epithelial components. Classification into benign, borderline, or malignant categories, based on criteria by Salvadori et al. (6) and Azzopardi et al. (7), reveals higher recurrence and metastasis rates

in malignant variants despite their lower prevalence compared to benign tumors.

The most common age range for the development of phyllodes tumors falls between 45 and 49 years old(8). The duration of presentation varies across different countries, possibly influenced by factors such as illiteracy, ignorance, poverty, and hesitation. Despite benign phyllodes tumors being more prevalent than borderline (BL) and malignant variants, they exhibit a lower recurrence rate (9).

Local recurrence rates are notably higher in malignant phyllodes tumors, reported in several series to range from 20% to 40% (5),(10). Similarly, systemic metastasis rates are reported to be between 25% and 40% (11) (12)(13)(14).

Fine needle aspiration cytology (FNAC) exhibits low sensitivity in discerning histological types, as reported at 72%, while core needle biopsy is seldom recommended due to the low clinical suspicion of malignancy (15).

Imaging modalities such as mammography and sonography may encounter challenges in distinguishing phyllodes tumors from fibroadenomas. Therefore, achieving an accurate diagnosis is essential for guiding appropriate surgical interventions (16).

Surgical intervention remains the cornerstone of treatment for all classifications of phyllodes tumors, with the primary objective of achieving a negative margin of at least 1 cm to mitigate local recurrence (5)(17)(18).

The size of the tumor significantly influences the risk of incomplete resection and recurrence. Larger and malignant tumors necessitate more aggressive treatment approaches, with surgical strategies tailored to the tumor's size and pathology. Initial surgical management typically involves wide local excision with negative margins for all phyllodes tumors. Adjuvant therapies such as radiotherapy (RT) and chemotherapy are considerations for recurrent, malignant, and metastatic cases, although their efficacy remains uncertain. The use of adjuvant RT in cases of phyllodes tumors remains controversial, with recommendations varying across studies (19). Some authors advocate for adjuvant RT to reduce the likelihood of local recurrence in borderline and malignant phyllodes tumor patients undergoing breast-conserving surgery, although its impact on overall survival (OS) and disease-free survival (DFS) remains inconclusive (20)(21). Accurate predictors of recurrence and mortality are elusive. Axillary lymph node dissection is rarely needed. Due to their unpredictable behavior and high recurrence rates, long-term follow-up is advised.

## CONCLUSION:

Despite its rarity, physicians should maintain a high suspicion for phyllodestumors in cases of giant fibroadenomas. In such instances, opting for a core needle biopsy over fine needle aspiration cytology is advisable, given its superior accuracy.

## DECLARATIONS

Human subjects: Consent was obtained by the participants in this study.

Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work.

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