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## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/18759

DOI URL: <http://dx.doi.org/10.21474/IJAR01/18759>



### RESEARCH ARTICLE

#### LOCALLY RECURRENT BREAST PHYLLODES TUMORS: ABOUT TWO CASES AND LITERATURE REVIEW

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#### Manuscript Info

##### Manuscript History

Received: 20 March 2024

Final Accepted: 27 April 2024

Published: May 2024

#### Abstract

Phyllodes tumors of the breast, rare fibroepithelial lesions, present unique challenges due to their potential for local recurrence and metastasis. While surgical excision is the primary treatment modality, achieving clear margins does not always guarantee prevention of recurrence. Factors such as tumor histology and pathologic features influence recurrence rates, with borderline and malignant tumors being at higher risk. Adjuvant therapies, particularly radiotherapy, show promise in improving local control, but their efficacy remains under investigation. Continued research is essential to identify predictive factors for recurrence and to refine treatment strategies for recurrent phyllodes, ultimately minimizing their impact on patients and healthcare professionals. This article presents two cases of recurrent phyllodes tumors and underscores the need for further exploration into the management of recurrent phyllodes tumors and highlights the ongoing challenges in mitigating their recurrence and improving patient outcomes.

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#### Introduction:-

Phyllodes tumors of the breast represent a relatively infrequent pathology, constituting 2.5% of all fibroepithelial lesions and 0.3% to 1% of the entire spectrum of mammary tumor pathologies. This condition predominantly afflicts women aged between 35 and 50 years. [1]

Classification of breast phyllodes tumors encompasses three distinct categories: benign, borderline, and malignant, based on histopathological features, including margin characteristics, stromal cellularity, disproportionate stromal element proliferation, tumor necrosis, and mitotic activity. Benign phyllodes tumors are the most prevalent, comprising 60% of cases. [2]

The potential for local or regional recurrence, or metastasis, is contingent upon the histological grade of the tumor. Rates of local recurrence vary from 10% to 17% for benign tumors, 14% to 25% for borderline tumors, and 23% to 30% for malignant tumors. Through our cases, we identify risk factors for locoregional recurrence and therapeutic management adopted in such cases. [3]

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## Cases Report

### Case 1 :

A 38-year-old unmarried, nulligravid patient underwent surgery in 2018 for a borderline phyllodes tumor of the left breast. Following lumpectomy, histopathological examination of the operative specimen revealed a borderline phyllodes tumor measuring 3 cm, located 1 mm from the resection margins. One year later, the patient was referred to our department for local recurrence of the phyllodes tumor. Clinical examination revealed a large, palpable, irregularly shaped mass in the left breast encompassing the entire breast and measuring 25 cm in diameter. The contralateral breast was unaffected. Figure (1). The therapeutic decision was to perform a left mastectomy with potential dorsal flap reconstruction to address the tissue loss.

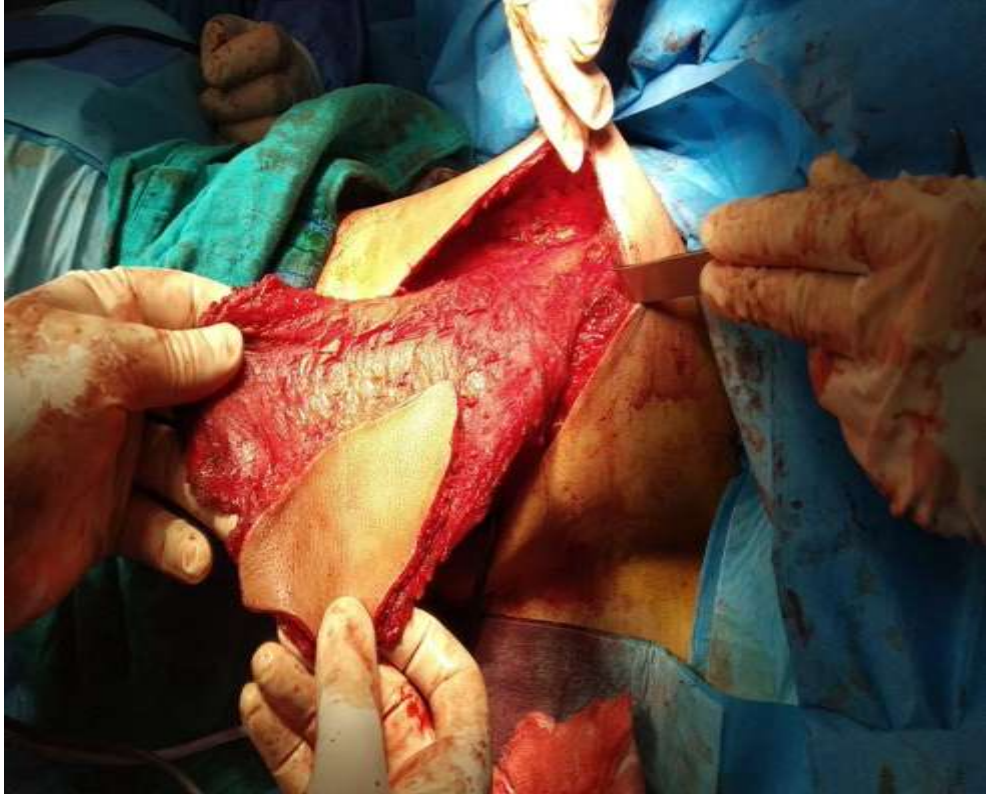
In the operating room, under general anesthesia, an oval peri-mammary incision was made, respecting safety margins. The tumor was excised with partial resection of the pectoralis major muscle due to tumor adhesion. A latissimusdorsi flap was harvested while preserving the vascular pedicle to cover the tissue defect. Figure (2). The flap was secured with separate sutures, and the skin was closed after placement of a suction drain. The specimen was sent for pathological examination, and the postoperative course was uneventful. Figure (3). The final histopathology report indicated a grade II phyllodes tumor with 1.5 cm resection margins and no infiltration of the pectoralis major muscle.

### Case 2:

A 43-year-old divorced woman, G1P1, with a family history of breast cancer in two cousins, underwent surgical treatment in 2015 with lumpectomy for a benign phyllodes tumor of the left breast, measuring 13\*8 mm and located 2 mm from the outer limit of resection. In 2020, she underwent left mastectomy for recurrent phyllodes tumor, involving nearly the entire left breast. Histological examination of the operative specimen revealed a 16 cm borderline phyllodes tumor, with the excision passing close to the tumor depth. Referred to our department for recurrence of a phyllodes tumor three years post-mastectomy, clinical examination revealed an 8 cm mass at the scar site of the left mastectomy, firm, painless, and fixed on both planes. The contralateral breast appeared clinically normal, and axillary lymph nodes were free. Figure (4). Biopsy of the tumor indicated a benign phyllodes tumor histologically. The therapeutic decision was to perform a tumor resection while respecting safety margins. In the operative room, an oval peri-tumoral incision was made with macroscopic margins of at least 1 cm, and the tumor was excised along with partial resection of the pectoralis major muscle due to tumor adhesion. Subsequently, an abdominal advancement flap was performed, facilitating edge approximation. Closure was achieved with an aspirating Redon drain, and the specimen was sent for histopathological examination. Figure (5). Postoperative recovery was uneventful. The final pathology report indicated a grade I phyllodes tumor, located 1 cm from the resection margins.



**Figure (1):-** Image showing recurrent phyllodes tumor after conservative treatment.



**Figure (2):-** Harvesting the latissimusdorsi flap with preservation of its vascular pedicle.



**Figure (3):-** Immediate postoperative patient with good flap vascularization.



Figure (4):- Image showing the recurrent phyllodes tumor after left mastectomy.



Figure (5):- Resected specimen of the recurrent phyllodes tumor (case 2).

**Discussion:-**

Phyllodes tumors (PTs) are infrequent breast tumors, comprising 0.5–2.5% of all breast lumps, with reported local recurrence rates reaching up to 19%. Such recurrences pose challenges for both patients and surgeons, necessitating additional surgeries. Moreover, there exists a risk of benign initial tumors developing malignancy upon recurrence,

underscoring the importance of comprehending the clinicopathological features that contribute to local recurrence. Further research is warranted to enhance our understanding of predictive factors for local recurrence in PT cases. [4], [5]

Inadequate surgical margins have long been considered a primary factor contributing to local recurrence in phyllodes tumors (PTs)[6]. Recommendations typically advise margins of 1–2 cm to encompass potential microscopic extensions left behind after tumor removal[7]. Despite this emphasis on achieving adequate margins, a significant number of patients still experience local recurrence. For instance, even with pathologically negative margins, Chaney and all's study reported a 4% local failure rate. However, the accuracy of margin determination may be compromised by sampling errors, particularly in larger tumors. Interestingly, some patients with involved margins do not develop further local recurrences, suggesting that while negative margins are crucial, other factors may also play a role in recurrence risk.[8]

The NCCN guidelines underwent revisions in 2021, now advocating for surgical excision of benign PT without the necessity of obtaining surgical margins[9]. Nonetheless, recent literature proposes that having a clear margin during the initial surgery could potentially lower the rates of recurrence. [10]

The histological grade of a tumor also influences local recurrence rates, with borderline and malignant tumors showing a higher likelihood of local recurrence after local excision[6]. In a study done by Ern Y Tan in 2006, women with locally recurrent tumors did not specifically aim to compare local recurrence rates among benign, borderline, and malignant tumors, and we observed that tumor histology did not correlate with the frequency of local recurrence, considering that adequate surgical margins were achieved to a similar extent across all tumor types. However, several other pathological features, such as stromal atypia, stromal hypercellularity, and infiltrative tumor margins, have been linked to an increased risk of local recurrence. Notably, the significance of intratumor pseudo angiomatous stromal hyperplasia was highlighted, as its presence was associated with a halved risk of local recurrence. [11]

Recurrent tumors, larger and more frequent, have shown a predilection for malignancy. Nevertheless, no consistent predictive factor has emerged in multivariate analysis. Given the known local recurrence rate of 13%, a new surgical intervention for pathologically negative margins seems unnecessary in 87% of cases. Additionally, reported local failure rates of around 5%, even with pathologically negative margins, raise questions about the necessity of subjecting benign or borderline tumors to further surgery when margins are involved or close.[12]

Malignant tumors have been treated similarly to common breast carcinomas, quickly undergoing reoperation to achieve clear margins. Despite a higher recurrence incidence in breast-conserving surgery than in total mastectomy, both approaches retain acceptable survival outcomes. Extended axillary resection is rarely performed due to the limited frequency of axillary node involvement. [13]

Most practitioners avoid chemotherapy as first-line treatment due to limited available data. To date, only one prospective study involving 28 patients has shown that chemotherapy had little effect on survival.[14]

Regarding local radiotherapy, it has demonstrated better outcomes for patients with borderline phyllodes tumors if margins are close or positive, even after the best surgical resection. A trend toward improved local control has been noted with adjuvant radiotherapy for malignant phyllodes tumors. [15]

### **Conclusion:-**

In conclusion, phyllodes tumors of the breast present a unique challenge due to their rarity and potential for local recurrence. Our cases illustrate the complexities involved in managing recurrent phyllodes tumors, highlighting the importance of thorough histopathological assessment and careful consideration of surgical margins. Despite efforts to achieve clear margins during initial surgery, local recurrence remains a significant concern, particularly for borderline and malignant tumors. The role of adjuvant therapies such as radiotherapy in improving local control warrants further investigation, while the efficacy of chemotherapy as a first-line treatment remains uncertain. Moving forward, continued research is needed to identify reliable predictive factors for local recurrence and to refine treatment strategies aimed at minimizing the burden of recurrent phyllodes tumors on patients and healthcare providers alike.

**Acknowledgements:-**

Thanks for all the gynecology service team of Mohammed VI university hospital center of Tangier.

**Competing interests**

Authors have declared that no competing interests exist.

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