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Phyllodes Tumor of the Breast: A Case Report and Literature Review

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Abstract: ***Malignant phyllodes tumor (MPT) of the breast is a rare fibroepithelial neoplasm characterized by rapid growth, high local postoperative recurrence rate, potential distant metastasis, and the absence of a unified treatment protocol. Giant malignant phyllodes tumor is frequently accompanied by thin skin, dilated blood vessels, and rapid volume increase in a short period, leading to considerable clinical management difficulty. Based on one typical case, this study summarizes the clinical manifestations, imaging features, pathological characteristics, key surgical treatments, and perioperative nursing strategies of giant malignant phyllodes tumor, and explores clinical diagnosis and treatment regimens through literature review. The results demonstrate that complete surgical resection with adequate negative margins is the cornerstone of treatment; individualized perioperative nursing can effectively reduce the incidence of postoperative complications. A multidisciplinary team (MDT) model is recommended for giant malignant phyllodes tumor to improve tumor resection rate, lower recurrence risk, and enhance patients' quality of life.***

Keywords: Malignant phyllodes tumor of the breast, Giant breast tumor, Surgical treatment, Perioperative nursing.

1. Introduction

Phyllodes tumor (PT) accounts for approximately 0.3%–1.0% of all breast tumors and is histologically classified into benign, borderline, and malignant subtypes [1]. Malignant phyllodes tumor (MPT) is highly aggressive, with a local recurrence rate of 18%–65% and a distant metastasis rate of 5%–30% [2-3]. Distant metastasis occurs mainly via hematogenous route to the lung, bone, liver, and other organs, whereas lymph node metastasis is relatively rare. Clinically, a tumor with a maximum diameter >10 cm is defined as a giant malignant phyllodes tumor. Such tumors often enlarge rapidly within a short time and may present with thin skin, dilated subcutaneous vessels, local pain, and limited limb movement, which significantly impair patients' physical and psychological well-being.

Owing to the low incidence and limited clinical cases, no standardized diagnostic and therapeutic guidelines have been established. The disease is usually managed according to the treatment principles of soft tissue sarcomas. In recent years, advances in precise surgical techniques and refined perioperative care have provided more feasible options for the safe and effective treatment of giant malignant phyllodes tumor. This paper reports the diagnosis and treatment of one case of giant malignant phyllodes tumor of the breast and reviews the relevant literature to provide a reference for clinical practice.

2. Case Presentation

A 45-year-old female patient was admitted to our hospital on March 23, 2026, due to "a mass in the right breast for half a year". She had received no prior treatment. The patient had a history of appendectomy for acute appendicitis in 2008; she was allergic to penicillin, cephalosporins, and pineapple; there was no family history of malignant tumors.

2.1 Physical Examination

Breast asymmetry was observed, with the right breast markedly larger than the left, measuring approximately 30.0 cm×28.0 cm×20.0 cm. The skin of the right breast was thin with locally dilated subcutaneous vessels showing purplish red discoloration; no dimpling or peau d'orange was detected. Bilateral nipples were symmetric without inversion, retraction, or discharge. An irregular mass measuring about 30.0 cm×25.0 cm×20 cm was palpable in the right breast, hard in consistency, ill-defined, uneven in surface, and poorly mobile with no obvious tenderness. No obvious mass was felt in the left breast. No enlarged lymph nodes were detected in bilateral axillary or supraclavicular regions. A skin tag of approximately 3.0 cm×2.0 cm×2.0 cm was noted in the right axilla (Figure 1).

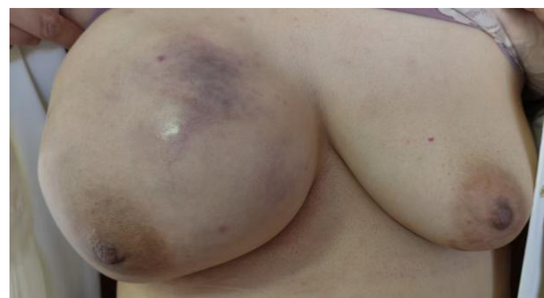

Figure 1

2.2 Imaging Examinations

1) Breast ultrasound (2026-03-16): Cystic nodule in the left breast, BI-RADS 2; solid lesion in the right breast, BI-RADS 5, with enlarged right axillary lymph nodes.

2) Breast ultrasound (The Second Affiliated Hospital of Harbin Medical University, 2026-03-17): Giant hypoechoic mass in the right breast, BI-RADS 4a, phyllodes tumor not excluded; hypoechoic lesion in the left breast, BI-RADS 3.

3) Chest CT (2026-03-23) (Figure 2): Space-occupying lesion in the right breast; bronchitis, emphysema, bronchiectasis with infection in the left lower lobe, multiple nodules in both lungs and pleura, bilateral pleural thickening.

4) Other examinations: Gynecologic ultrasound indicated cervical Nabothian cysts; abdominal ultrasound suggested fatty liver, hepatic cyst, and cholecystitis; ECG showed sinus rhythm, roughly normal.

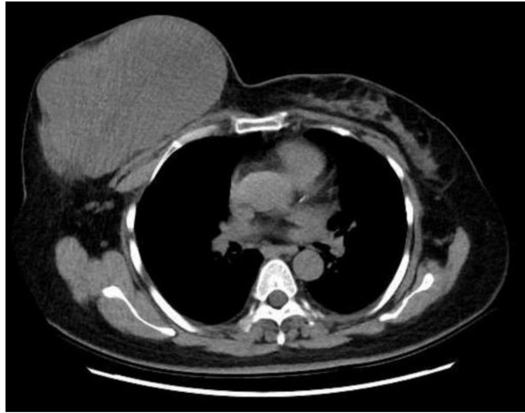

Figure 2

2.3 Laboratory Examinations

Blood routine: WBC 7.26×10⁹/L, Hb 134 g/L, PLT 346×10⁹/L. Coagulation function: Fibrinogen 4.97 g/L, D-dimer 0.66 mg/L FEU. Liver and renal function, urine routine, and other tests showed no obvious abnormalities.

2.4 Preoperative Diagnosis

1) Right breast mass (phyllodes tumor, malignancy not excluded); 2) Left breast cystic lesion; 3) Right axillary skin tag.

3. Treatment Process

3.1 Preoperative Evaluation and Preparation

The patient had a huge rapidly growing breast mass with thin skin and vascular dilation, a large surgical wound, and a risk of bleeding; she also had underlying pulmonary diseases requiring preoperative respiratory function assessment. Preoperative management included:

1) Completion of blood tests, chest CT, cardiac ultrasound, and other examinations to exclude surgical contraindications;

2) Respiratory care: Avoiding cold exposure and strenuous exercise, monitoring pulmonary infection markers, and oxygen support if needed;

3) Routine preparation: Skin preparation, fasting, indwelling catheter, and general anesthesia plan;

4) Informed consent: Detailed explanation of the condition, surgical plan, and risks to the patient and family.

3.2 Surgical Procedure

Under general anesthesia, simple right mastectomy was performed at 10:20 on March 25, 2026.

Intraoperative exploration revealed a right breast mass of about 25.0 cm×25.0 cm×20.0 cm, hard and irregular. The nipple-areolar skin was thin and tightly adherent to the mass. Sharp dissection was performed along the tumor capsule from two fingers below the clavicle superiorly, to the inframammary fold inferiorly, parasternal region medially, and anterior axillary line laterally. The right breast tissue and part of the adherent pectoralis major fascia were completely removed. Intraoperative blood loss was about 80 mL without transfusion. Hemostasis was achieved, one negative pressure drain was placed at the inner edge of the serratus anterior muscle, and the incision was closed in layers with moderate compression dressing. The specimen was sent for pathological examination (Figure 3).

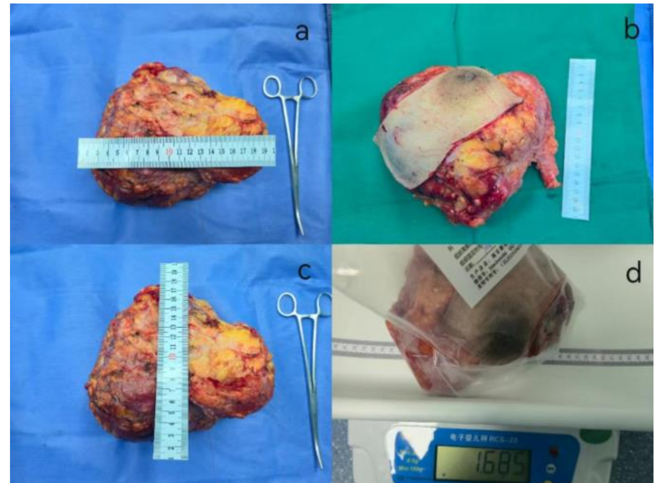

Figure 3: Specimen resected during surgery (a: The long diameter of the specimen is approximately 20cm; b: The skin surface side of the specimen; c: The short diameter of the specimen is approximately 17cm; d: The weight of the specimen is 1.685kg)

3.3 Postoperative Pathology

Pathological consultation (Peking University Cancer Hospital): (Right breast mass) Malignant phyllodes tumor of the breast; no tumor involvement in the nipple (Figure 4).

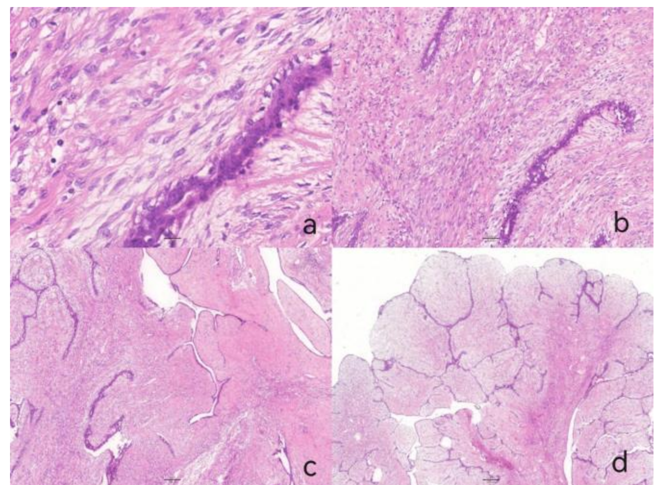

Figure 4: Malignant phyllodes tumor of breast (a: H&E×400; b: H&E×100; c: H&E×40; d: H&E×20)

3.4 Postoperative Management and Nursing

1) Vital signs monitoring;

2) Diet and pain control: Fasting for 6 hours, gradual oral intake; no strong analgesics required;

3) Incision and drain care: Daily observation of bleeding, exudate, and drainage volume;

4) Upper limb protection: Avoid excessive abduction and activity;

5) Complication prevention: Hemorrhage, infection, subcutaneous effusion, flap necrosis.

3.5 Outcomes

The patient recovered uneventfully without complications. The catheter was removed on postoperative day 1; the drain was removed on day 6 when drainage decreased to 6 mL/24 h; the patient was discharged on day 7 with a well-healed incision.

Many studies have confirmed that adjuvant radiotherapy reduces local recurrence but does not improve overall or disease-free survival [4-5]. After multidisciplinary discussion (pathology, radiotherapy, medical oncology), adjuvant radiotherapy was administered. At 1-month follow-up, the patient was in good condition with no local recurrence and normal right upper limb function.

4. Discussion

Giant malignant phyllodes tumor (diameter >10 cm) is a rare and aggressive fibroepithelial neoplasm with rapid growth, skin thinning, vascular dilation, and functional limitation, making diagnosis and treatment challenging [6]. The present case had a tumor diameter of about 20 cm with typical clinical features, providing valuable experience for similar cases.

Etiology remains unclear; risk factors may include prior fibroadenoma, local surgery, and hormonal imbalance. Rapid growth is characteristic of malignant phyllodes tumor, leading to skin atrophy and vascular dilation, consistent with this case.

Imaging findings are nonspecific and may mimic giant fibroadenoma, sarcoma, or breast cancer. Ultrasound shows large solid lesions with heterogeneous echo and rich blood supply. CT delineates tumor size, necrosis, and anatomical relations for surgical planning. Definitive diagnosis depends on histopathology with marked stromal atypia and high mitotic activity [7-9].

Complete surgical resection with negative margins (≥2 cm) is the mainstay treatment. Simple mastectomy is recommended for large tumors with skin or fascial involvement. Axillary lymph node dissection is not routine due to low lymphatic metastasis rate [10].

Medical therapy lacks standard protocols. Most tumors are triple-negative with limited chemosensitivity. Anti-angiogenic agents may be used for downstaging, adjuvant, or palliative purposes. This patient underwent radical surgery without adjuvant medical therapy.

Perioperative management is critical for safety and recovery. Multidisciplinary cooperation and refined care reduce complications and improve quality of life [11-12]. Prognosis is related to histological grade, margin status, tumor size, and mitotic count. Hematogenous metastasis to the lung is common; long-term follow-up with chest CT and breast ultrasound is mandatory [13].

In conclusion, giant malignant phyllodes tumor is rare and complex. Management should include precise evaluation, R0 resection, multidisciplinary collaboration, and refined nursing. Preoperative optimization, complete resection, and long-term follow-up improve outcomes. Further studies are needed to establish standardized guidelines.

5. Conclusion

Giant malignant phyllodes tumor of the breast is rare and clinically challenging. Complete surgical resection (R0 resection) is the core treatment. Individualized perioperative nursing significantly reduces complications and accelerates recovery. A multidisciplinary approach combining preoperative evaluation, precise surgery, wound care, respiratory support, radiotherapy, and long-term follow-up effectively improves prognosis and quality of life.

Ethics Approval and Consent to Participate

Not applicable.

Acknowledgments

Not applicable.

Conflicts of Interest

The authors declare no conflicts of interest.

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