Annals of Case Reports
Shick C and Kuzmiak CM. Ann Case Rep: 11: 102656
www.doi.org/10.29011/2574-7754.102656
www.gavinpublishers.com

OPEN ACCESS

Case Report

GAVIN PUBLISHERS

Malignant Phyllodes with Recurrent Metastasis: A Case Report

Collin Shick[1], Cherie M Kuzmiak[2*]

[1]School of Medicine, University of North Carolina, Chapel Hill, NC, USA

[2]Department of Radiology, University of North Carolina, Chapel Hill, NC, USA

[*]**Corresponding author**: Cherie M Kuzmiak, Department of Radiology, Chapel Hill, NC, USA

Citation: Shick C, Kuzmiak CM (2026) Malignant Phyllodes with Recurrent Metastasis: A Case Report. Ann Case Report. 11: 2656. DOI: 10.29011/2574-7754.102656

Received: 04 August 2026; **Accepted:** 10 August 2026; **Published:** 12 August 2026

Abstract

Malignant phyllodes tumors are rare fibroepithelial breast neoplasms with the potential for aggressive local recurrence and distant metastasis. We report the case of a 46-year-old woman with a rapidly enlarging malignant phyllodes tumor who developed widespread metastatic disease, including a recurrent osteosarcomatous skull metastasis, despite definitive surgical treatment. This case demonstrates the aggressive clinical course of a malignant phyllodes tumor with adverse histopathologic features and underscores the potential for rapid hematogenous dissemination, recurrence at unusual anatomic sites, and progression despite appropriate local management.

Keywords: Malignant phyllodes tumor; Osteosarcomatous; Hematogenous metastasis; Skull metastasis

Introduction

Phyllodes tumors (PTs) are rare fibroepithelial breast neoplasms, accounting for only 0.3-1% of breast tumors. [1-4] They occur most commonly in women between 40 and 50 years of age. [5] PTs are classified histologically as benign, borderline, or malignant, with malignant phyllodes tumors (MPTs) comprising approximately 10-20% of cases. [2, 3, 6] Approximately 9-27% of MPTs develop distant metastatic disease, most commonly involving the lungs, bones, and brain [1, 3, 6].

Case Presentation

A 46-year-old female presented to the emergency department with a painful, palpable left breast lump and spontaneous ipsilateral bloody discharge. The patient reports that the mass began to rapidly enlarge two months ago at the same time the discharge appeared. She has a >15-year history of a benign left breast needle biopsy for a 1 cm mass that resulted in a fibroepithelial on histopathology. On physical examination, there was a firm 9 cm mass involving the entire left breast. A diagnostic bilateral mammogram (Figure 1) followed by a targeted left breast ultrasound (Figure 2) was performed.

Imaging Findings

Mammogram of the left breast showed a 9 cm, round to oval, predominantly circumscribed, high-density, noncalcified mass involving the entire left breast (Figure 1). A cylinder-shaped marker clip from her remote biopsy is noted along the supralateral aspect of the mass. The right breast was normal. US of the left breast demonstrated an 8.6 cm, round to oval, heterogenous mass with internal blood flow (Figure 2). MR showed a 9.1 cm, round to oval, heterogenous enhancing mass with heterogenous T2-hyperintense signal (Figure 3). There was no involvement with the chest wall. No axillary nor internal mammary adenopathy were present. The left breast mass was assessed as a BI-RADS 4 lesion. An ultrasound-guided core biopsy of the mass was then performed.

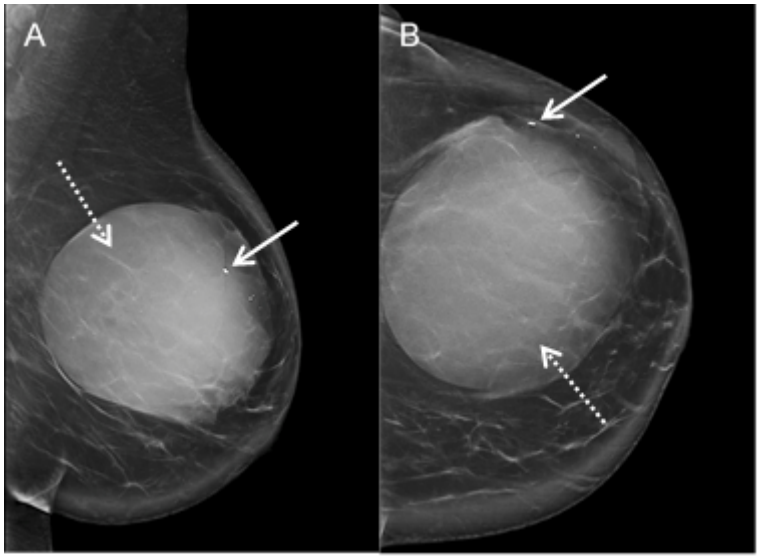


Figure 1: Mammographic images of a 46-year-old female with a painful palpable left breast lump. Mediolateral oblique (A) and craniocaudal (B) views show a 9 cm, round to oval, predominantly circumscribed, high-density, non-calcified mass (dotted arrow) involving the entire left breast. A cylinder-shaped marker clip from her remote biopsy (solid arrow) is noted along the supralateral aspect of the mass. The right breast was normal (not shown).

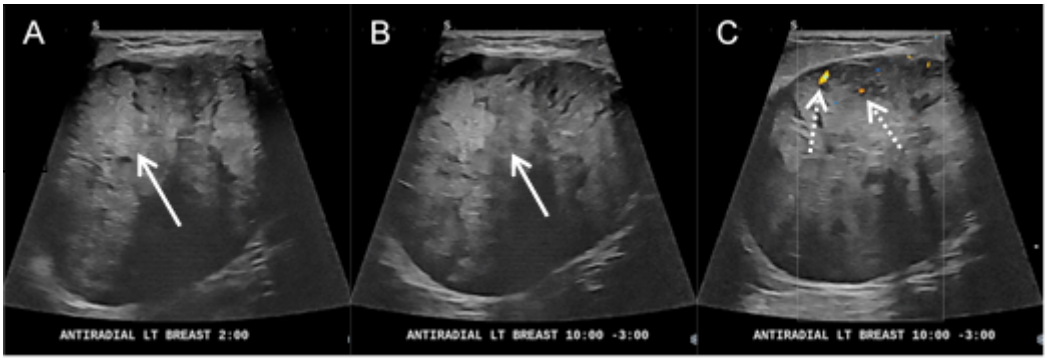


Figure 2: US images of a 46-year-old female with a painful palpable left breast lump. Orthogonal views (A, B) of the left breast show an 8.6 cm, oval, heterogenous solid mass (solid arrow) with minimal internal vascularity (dotted arrow, C).



Figure 3: Breast MRI images of a 46-year-old female with a painful palpable left breast lump. Axial T1 (A), axial T1 FS pre-contrast (B), axial T1 FS post contrast (C), and axial STIR (D) show a 9.1 cm, round to oval, heterogenous enhancing mass (solid arrow) with heterogenous T2-hyperintense signal.

Differential

The differential for a non-calcified, round to oval circumscribed mass in the breast of a female patient commonly includes fibroadenoma and invasive ductal carcinoma (high-grade) with less common etiologies including phyllodes tumor, intraductal papilloma, papillary carcinoma, mucinous carcinoma, medullary carcinoma, and metaplastic carcinoma. [1, 6, 7] In the appropriate clinical setting, hematoma and abscess should also be considered. Among rapidly enlarging breast masses, phyllodes tumor and metaplastic carcinoma are differentiated histologically by the epithelial component where metaplastic carcinomas demonstrate malignant epithelial differentiation. [2, 6] Whereas mucinous and papillary carcinomas tend to be slower growing lesions and usually present in postmenopausal women. When histopathology reveals a fibroepithelial lesion, the primary differential is fibroadenoma versus phyllodes tumor. [2, 5, 6, 8-10] These lesions can look very similar on imaging. [2, 5-7] Phyllodes tend to be larger, exhibit more rapid growth, occur at later ages, and appear denser on mammogram when compared with fibroadenomas. [1, 5-7] Clinical pain has also been reported as a potential differentiating feature with fibroadenomas typically being asymptomatic [5].

Pathology

Pathology results of the US-guided core needle biopsy (CNB) of the enlarging left breast mass revealed a fibroepithelial lesion with a mild increase in stromal cellularity. Excision was recommended due to the large size of the mass. However, prior to definitive surgical excision, a second US-guided CNB was performed for further definitive histopathologic characterization. The second site biopsy showed sections of a spindle cell neoplasm with nuclear atypia and approximately 21 mitoses per 10 high-power fields, favoring a malignant phyllodes tumor. Stains for CD34, cytokeratin AE1/AE3, p63, GATA3, ER, and HER2 were all negative. The stain for high-molecular weight cytokeratin (CK5/6)

was focally positive. The patient underwent a simple mastectomy with a final pathologic result of a malignant phyllodes tumor with negative margins.

Discussion

Phyllodes tumors (PTs) are rare fibroepithelial breast neoplasms, accounting for only 0.3-1% of breast tumors. [1-4, 9] They occur most commonly in women between 40 and 50 years of age. [5] PTs are classified histologically as benign, borderline, or malignant, with malignant phyllodes tumors (MPTs) comprising approximately 10-20% of cases. [2, 3, 6] According to WHO, MPTs are characterized by marked stromal hypercellularity and atypia, stromal overgrowth, infiltrative tumor margins, and elevated mitotic activity (>10 mitoses per 10 HPFs). [1, 6, 10, 11] MPTs may also contain sarcomatous elements: osteosarcoma, chondrosarcoma, and/or liposarcoma. [1, 6] Prognosis varies due to the rarity of these tumors with MPTs demonstrating a higher rate of local recurrent and distant metastasis than benign or borderline PTs. [1-3, 6, 12] Unlike invasive mammary carcinomas of the breast, MPTs metastatic spread is primarily hematogenous rather than local regional. [1, 2, 6] Approximately 9-27% of MPTs develop distant metastatic disease, most commonly involving the lungs, bones, and brain [1, 3, 6]. On mammography, MPTs are often large, round, high-density masses with circumscribed or partially indistinct margins. [5, 13] On ultrasound, the appearance is typically a hypoechoic to heterogeneous mass with partially indistinct or circumscribed margins. [14] MRI features of MPTs are a round to oval, T1 hypointense, T2 hyperintense mass with heterogeneous enhancement. [1, 4, 13] Areas of T1-hyperintense hemorrhage may be visible, and the T2 sequence can show hyperintense fluid in slit/cleft-like spaces with hyperintensity in the surrounding tissue [1, 4, 13].

Surgical wide local excision with negative margins is the primary treatment of MPTs. [1-3, 9] Local recurrences range from 23-30%, exceeding those of benign and borderline PTs. [1-3] Adjuvant radiation and chemotherapy have been associated with improved local control in select patients, although a clear overall survival benefit has not been demonstrated. [1-3, 15] This patient declined adjuvant radiation and chemotherapy.

Disease Progression

Twenty-one months after the left simple mastectomy with reconstruction, the patient presented with a headache, hypertension and a palpable soft tissue scalp mass on the posterior aspect of her head. A CT of the head without contrast was performed (Figure 4). The CT demonstrated a 4.5 cm lentiform soft tissue density in the right parietal scalp with a small cortical defect and lucency in the underlying calvarium. Biopsy of the scalp lesion showed focal osteoid tissues representing the osteosarcomatous component of the breast MPT (Figure 5). Despite wide surgical excision of the scalp/skull lesion, it recurred within two months. The patient underwent a MRI with contrast of her head that demonstrated a 4 cm, heterogenous enhancing mass with intracranial extension, mass effect, and involvement of the superior sagittal and right transverse sinuses (Figure 6). A CT of the chest with contrast was performed due to the patient developing a rapid onset of shortness of breath. The exam showed additional metastatic disease including right lung hypervascular lesions, a large malignant pleural effusion associated with complete collapse of the left lung, and a pathologic left clavicular fracture (Figure 7). A CT of the lumbar spine showed additional bony lesions involving the sacrum (Figure 8). These findings demonstrate the potential for MPTs to disseminate hematogenously, recur rapidly despite surgical management, and involve multiple distant sites.



Figure 4: CT of the head without contrast images of a 46-year-old female with a headache, hypertension, and a scalp lesion. Axial (A), sagittal (B), and axial bone window (C) show a 4.5 cm soft tissue mass involving the posterior calvarium with bony involvement (arrow).

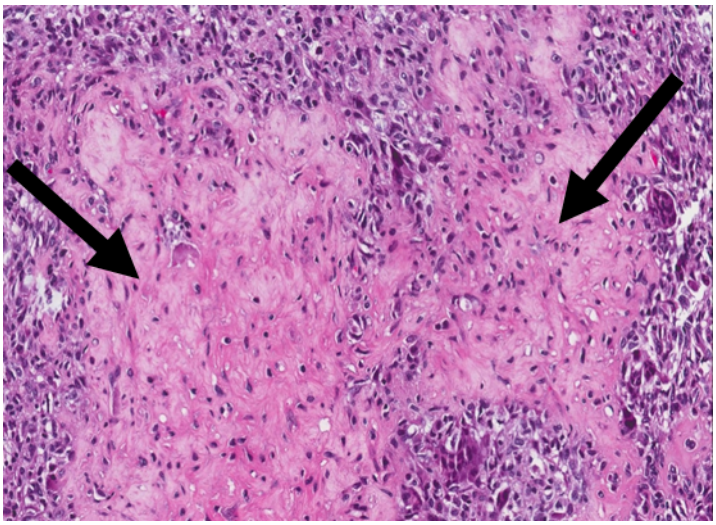


Figure 5: High Power H&E 200x of the right posterior skull lesion shows focal osteoid tissues (arrows) representing the osteosarcomatous component of the breast MPT.

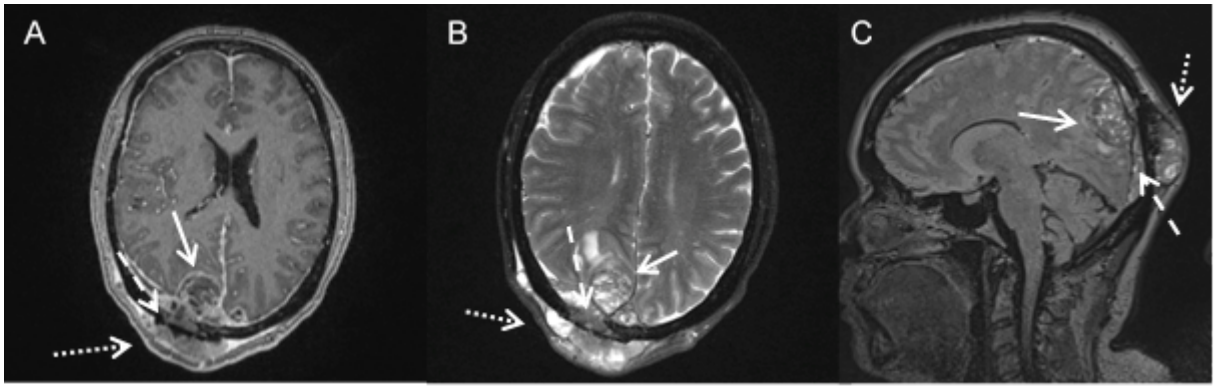


Figure 6: MRI of the head with contrast images of a 46-year-old female with a recurrent scalp osteosarcomatous lesion from her malignant phyllodes tumor. Axial T1WI (A), axial T2WI FS (B), and sagittal T2WI FLAIR (C) show a 4 cm, heterogenous mass involving the parieto-occipital prior craniotomy site. The mass has both an intracranial (solid arrow) and extra cranial (dotted arrow). There is also tumoral extension into the dural sinuses with significant involvement of the mid/posterior superior sagittal sinus and proximal right transverse sinus (dashed arrow).



Figure 7: Chest CT with contrast images of a 46-year-old female with shortness of breath. Axial (A), coronal (B), and coronal bone window (C) show a large pleural effusion occupying the near entirety of the left hemithorax with complete collapse of the left lung with mediastinal shift to the right (solid arrow). The thoracentesis showed the large pleural effusion was malignant secondary to her malignant phyllodes tumor. A hemorrhagic right lung metastasis is present (arrowhead). A pathologic left clavicular fracture is present (dotted arrow). Note is made of the patient's left breast implant (*).

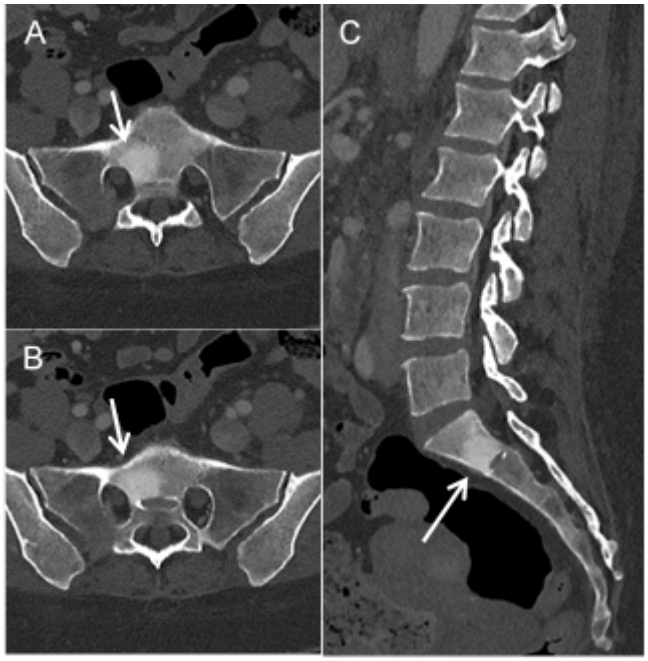


Figure 8: Lumbar spine CT images of a 46-year-old female with low back pain. Axial (A,B) and sagittal (C) images show a focal sclerotic S1 vertebral body lesion (arrow) compatible with metastasis from her malignant phyllodes tumor.

Conclusion

This case illustrates the highly aggressive behavior that can occur in MPTs with adverse histopathologic features. In particular, the markedly elevated mitotic rate and sarcomatous elements indicated a substantial risk of recurrence and distant spread. Although distant metastases occur in approximately 9-27% of MPTs, this patient experienced an unusually rapid and extensive metastatic course despite surgical management.

Declarations

Contributors: All authors contributed to planning, literature review and conduct of the review article. All authors have reviewed and agreed on the final manuscript.

Competing interests: None.

Patient consent for publication: Not applicable.

Ethics approval and consent to participate: Not applicable.

Availability of data and materials: Not applicable.

Funding: Not applicable/No Funding.

References

1. Limaiem F, Kashyap S. (2023). Phyllodes Tumor of the Breast. StatPearls. Treasure Island (FL): StatPearls Publishing.
2. Simpson A, Li P, Dietz J. (2021). Diagnosis and management of phyllodes tumors of the breast. Annals of Breast Surgery. 5.
3. Lissidini G, Mulè A, Santoro A, Papa G, Nicosia L, et al. (2022). Malignant phyllodes tumor of the breast: a systematic review. Pathologica. 114: 111-120.
4. Yabuuchi H, Soeda H, Matsuo Y, Okafuji T, Eguchi T, et al. (2006). Phyllodes tumor of the breast: correlation between MR findings and histologic grade. Radiology. 241: 702-709.
5. Wiratkapun C, Piyapan P, Lertsithichai P, Larbcharoensub N. (2014). Fibroadenoma versus phyllodes tumor: distinguishing factors in patients diagnosed with fibroepithelial lesions after a core needle biopsy. Diagn Interv Radiol. 20: 27-33.
6. Zhang Y, Kleer CG. (2016). Phyllodes Tumor of the Breast: Histopathologic Features, Differential Diagnosis, and Molecular/ Genetic Updates. Arch Pathol Lab Med. 140: 665-671.
7. Zhang M, Compton L, Hwang H, Hayes JC. (2022). Radiologic-Pathologic Correlation of Fibroepithelial Lesions: A Pictorial Review. J Breast Imaging. 4: 513-519.
8. Nguyen QD, Krider SO, Roberts JT, Monetto FEP, He J. (2020). Fibroepithelial Lesion Initially Believed to Be Fibroadenoma, but Interval Growth Consistent With Phyllodes Tumor. Cureus. 12: e10363.
9. Tan BY, Acs G, Apple SK, Badve S, Bleiweiss IJ, et al. (2016). Phyllodes tumours of the breast: a consensus review. Histopathology. 68: 5-21.
10. Packer MDC, Lester SC. (2025). Current understanding of phyllodes tumors of the breast: Tumor classification, molecular landscape, and best pathology practice. Hum Pathol. 162: 105863.
11. Tan PH, Ellis I, Allison K, Brogi E, Fox SB, et al. (2020). The 2019 World Health Organization classification of tumours of the breast. Histopathology. 77: 181-185.
12. Yu CY, Huang TW, Tam KW. (2022). Management of phyllodes tumor: A systematic review and meta-analysis of real-world evidence. Int J Surg. 107: 106969.
13. Constante SA, O'Connor S, Jordan SG. (2023). Classic illustrations of benign and malignant phyllodes breast tumors in two patients. Radiol Case Rep. 18: 232-238.
14. Chao TC, Lo YF, Chen SC, Chen MF. (2002). Sonographic features of phyllodes tumors of the breast. Ultrasound Obstet Gynecol. 20: 64-71.
15. Zhuang Z, Yilihamu A, Li Z, Lei R, Li X, et al. (2024). The Impact of Adjuvant Chemotherapy on the Long-Term Prognosis of Breast Malignant Phyllodes Tumors: A Propensity Score-Matched Study. J Natl Compr Canc Netw. 22: e247023.