www.directivepublications.org

The Journal of Clinical Oncology

ISSN 3064-7002

Case Report

Phylloid Breast Tumor With Osteocondroid Component: A Clinical Case.

Nunzio Di Naro[1], Marta Meloni[1], Francesca Ledda[1], Chiara Floris[1], Eleonora Noto[1], Giovanni Antonio Tolu[1,2].

1. Pathological Anatomy Unit, San Martino Hospital, Oristano, Italy.

2. Director of the Pathological Anatomy Unit, San Martino Hospital, Oristano, Italy.

Abstract

Malignant phyllodes tumors account for 0.18% of all malignant breast tumors, and of these, tumors with heterologous differentiation of osteosarcoma and chondrosarcoma are rare, accounting for 1.3% of all phyllodes tumors. We report a case of malignant phylloid tumor with atypical heterologous osteochondroid component, which arrived at our Pathological Anatomy Unit.

Keywords : Osteochondroid differentiation, malignant phylloid, breast cancer, thoracic oncology.

INTRODUCTION

Phyllodes tumors (PT) are neoplasms composed of a dual epithelial and stromal cell population [1] and account for less than 1% of breast tumors.

The World Health Organization has divided PTs into three categories: benign, borderline, or malignant, based on five histological parameters: stromal cellularity, stromal atypia, tumor margins, mitotic activity, and stromal hyperplasia [2, 3].

The category of malignant phyllodes tumors (MPTs) accounts for 8-20% of all PTs [4]. MPTs are characterized by marked stromal cellularity, nuclear atypia, increased mitotic activity (≥10 x 10HPF), and infiltrative tumor margins [5].

In addition, heterologous sarcomatous elements such as osteosarcoma, chondrosarcoma, or liposarcoma have often been observed within the tumor [6] and show a rare incidence [7].

Finally, all types of phyllodes tumors can recur locally [8].

OUR CLINICAL CASE

A middle-aged woman with no significant medical history showed a nodular area on the upper outer quadrant of her right breast on screening radiology.

The biopsy performed on this nodule revealed a phyllodes tumor with histological features of atypia (B4) and indicated complete excision of the lesion for a precise diagnostic classification.

Subsequently, our Pathological Anatomy Unit received the entire lesion, described as a fragment of breast parenchyma measuring 4 x 4 x 2 cm with reference threads on the upper, lower, and retroareolar margins.

Macroscopic

On the cut, a seemingly well-circumscribed neoplasm was found, measuring 3.8 cm in maximum diameter, with increased consistency and a whitish color.

Microscopic

Microscopic observation revealed fibroepithelial proliferation, characterized by marked and diffuse hypercellularity of the stromal elements with nuclear atypia (**figs. 1, 2**) and frequent mitotic figures (**fig. 3**) equal to 10x10 HPF, areas of necrosis, and poor representation of the ductal component.

This proliferation also included an abundant atypical heterologous osteochondroid component (**fig. 4**).

***Corresponding Author:** **Marta Meloni**, Pathological Anatomy Unit, San Martino Hospital, Oristano, Italy. **Email:** martameloni1981@libero.it.

Received: 30-October-2025, Manuscript No. TJOCO-5221 **; Editor Assigned:** 31-October-2025 **; Reviewed:** 22-November-2025, QC No. TJOCO-5221 **;**
Published: 03-December-2025, DOI: 10.52338/tjoco.2025.5221.
Citation: **Marta Meloni**. Phylloid Breast Tumor With Osteocondroid Component: A Clinical Case. The Journal of Clinical Oncology. 2025 December; 14(1). doi: 10.52338/tjoco.2025.5221.

Copyright © 2025 **Marta Meloni**. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Figure 1.

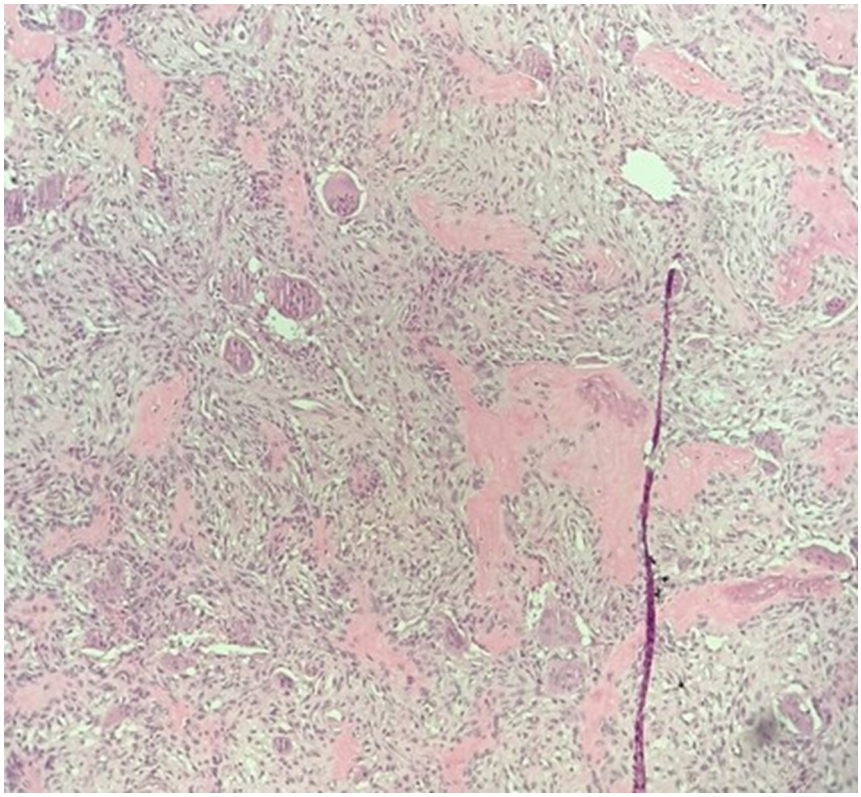


Figure 2.

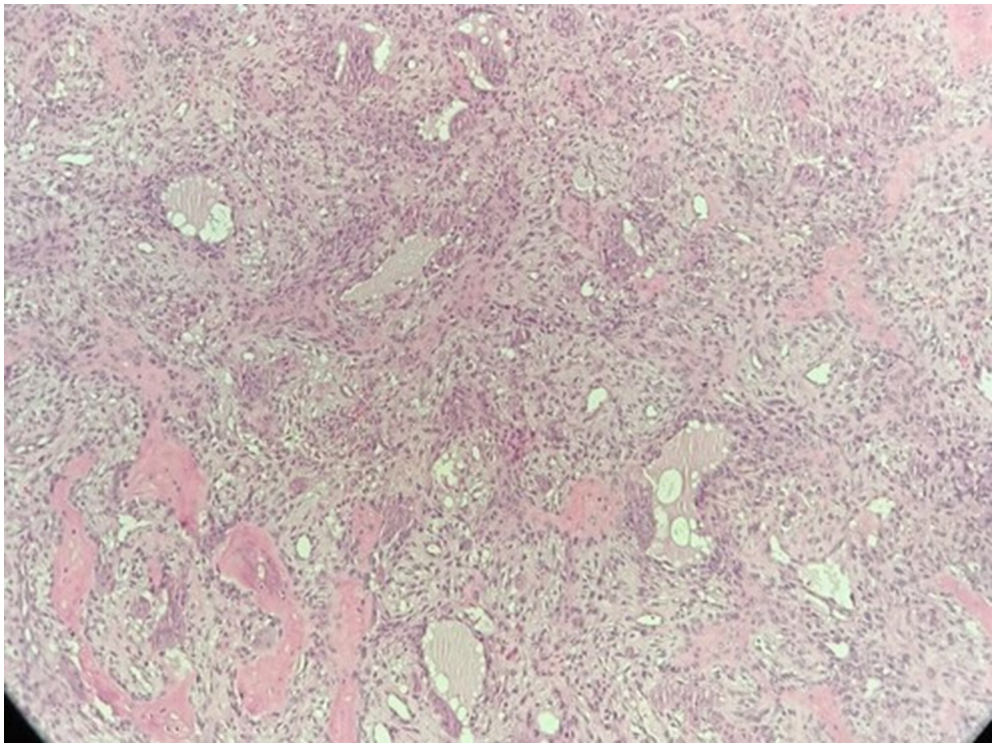


Figure 3.

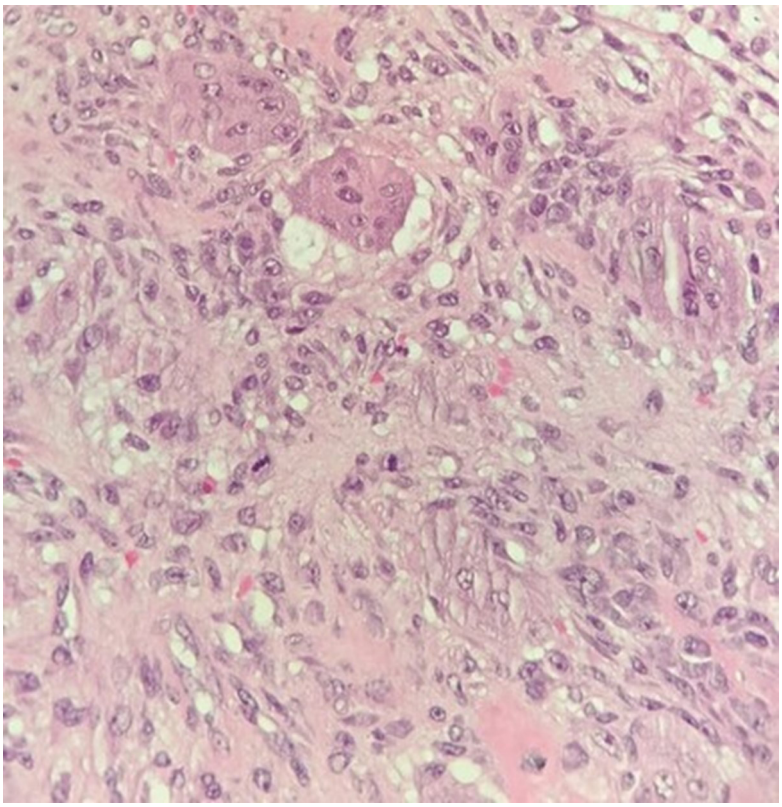
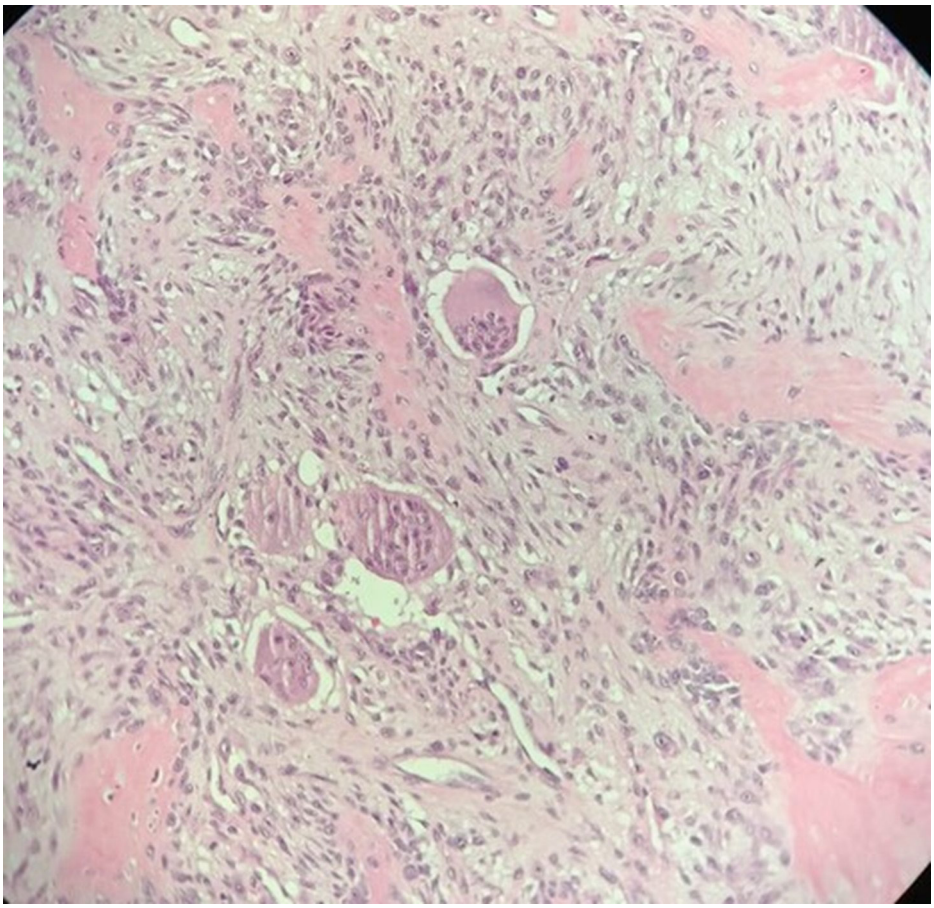


Figure 4.



Immunohistochemistry

Immunohistochemical investigations showed positivity for CD68 (**fig. 5**), SATB2 (**fig. 6**), Vimentin (**Fig. 7**), Smooth muscle actin (**Fig. 8**), focal weak positivity for Actin (clone HHF35) (**Fig. 9**) and P63, negativity for Desmin, Pancytokeratin, Cytokeratin 5/6, estrogen and progestin receptors.

The proliferation index, assessed with Ki67, showed moderate expression in neoplastic cells (**fig. 10**).

The morphological findings were consistent with a phylloid tumor with cytological features of malignancy, with clear surgical resection margins.

Figure 5.

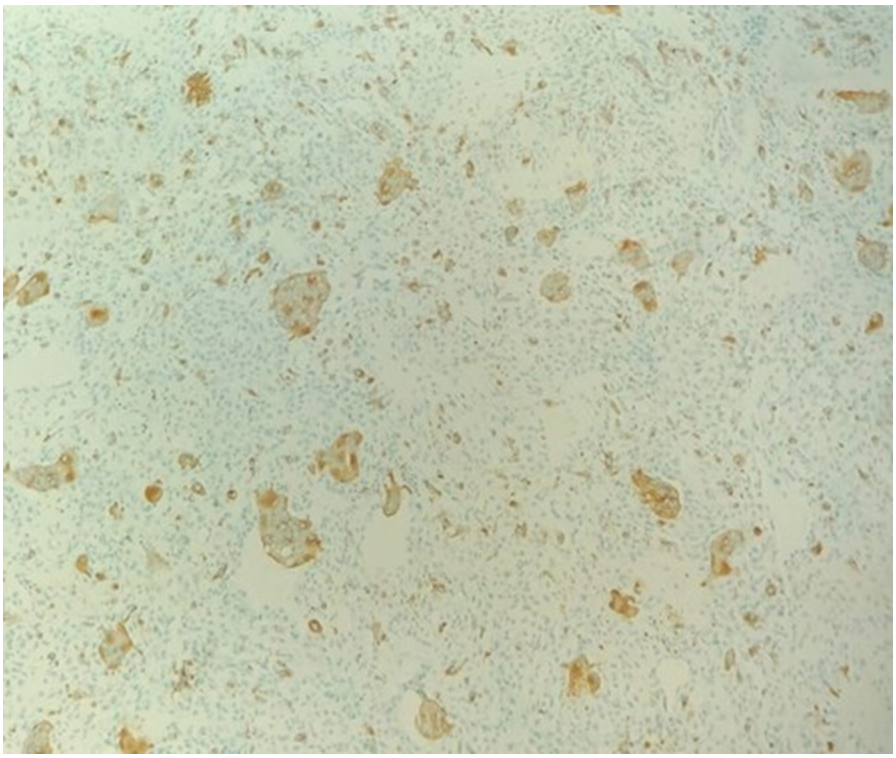


Figure 6.

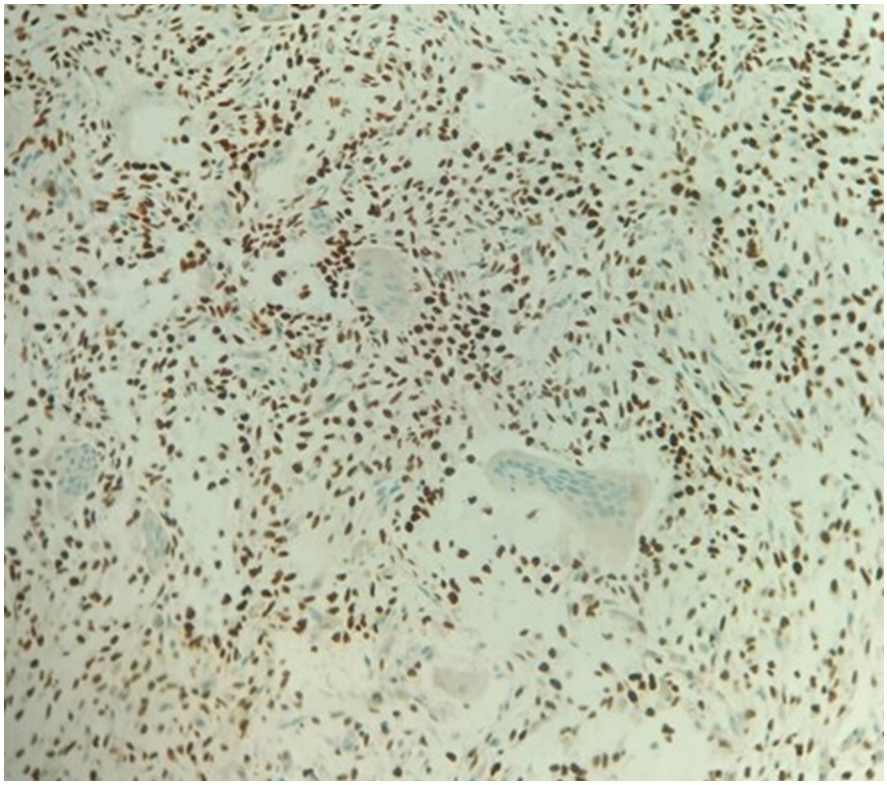


Figure 7.

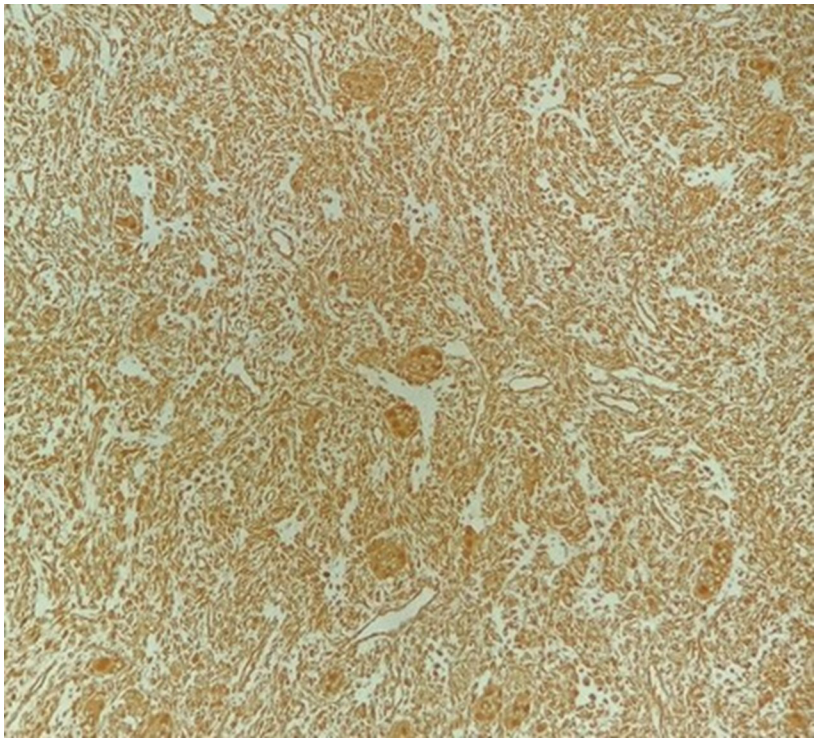


Figure 8.

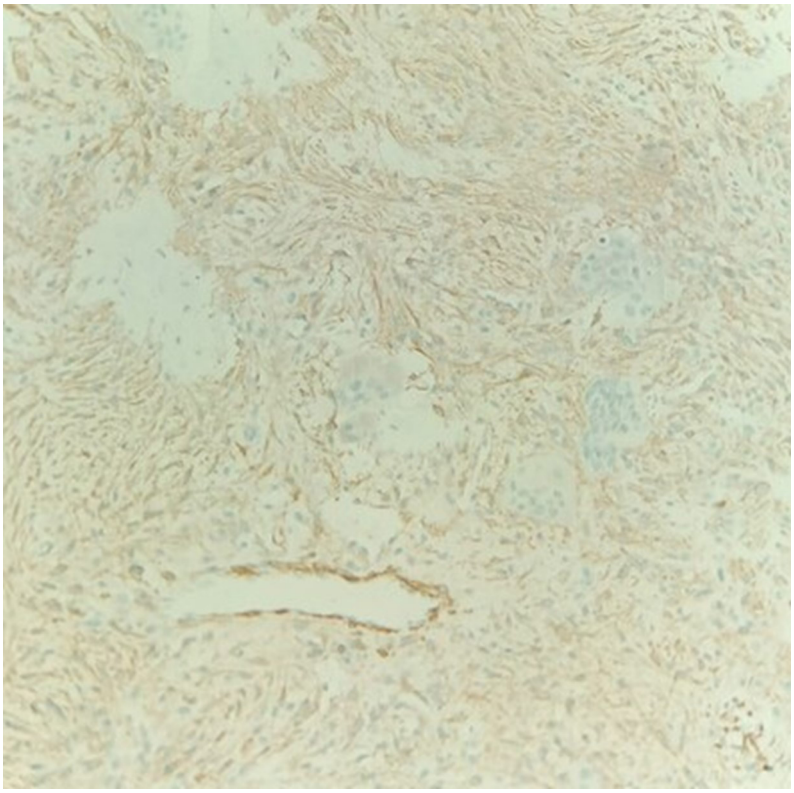


Figure 9.

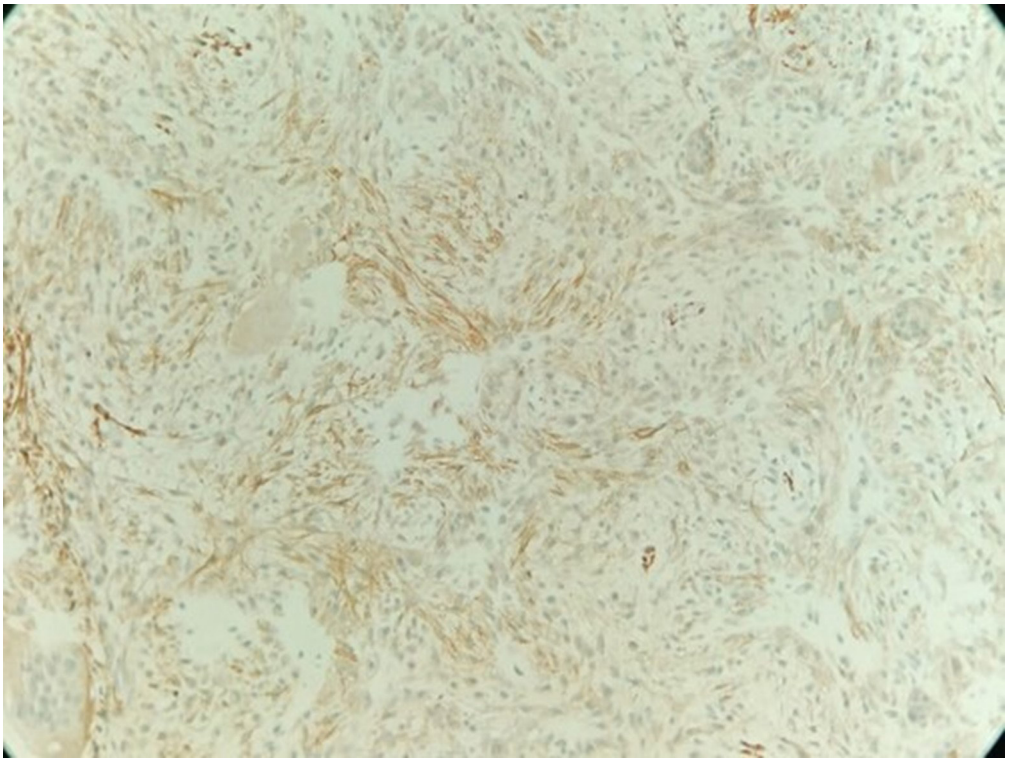
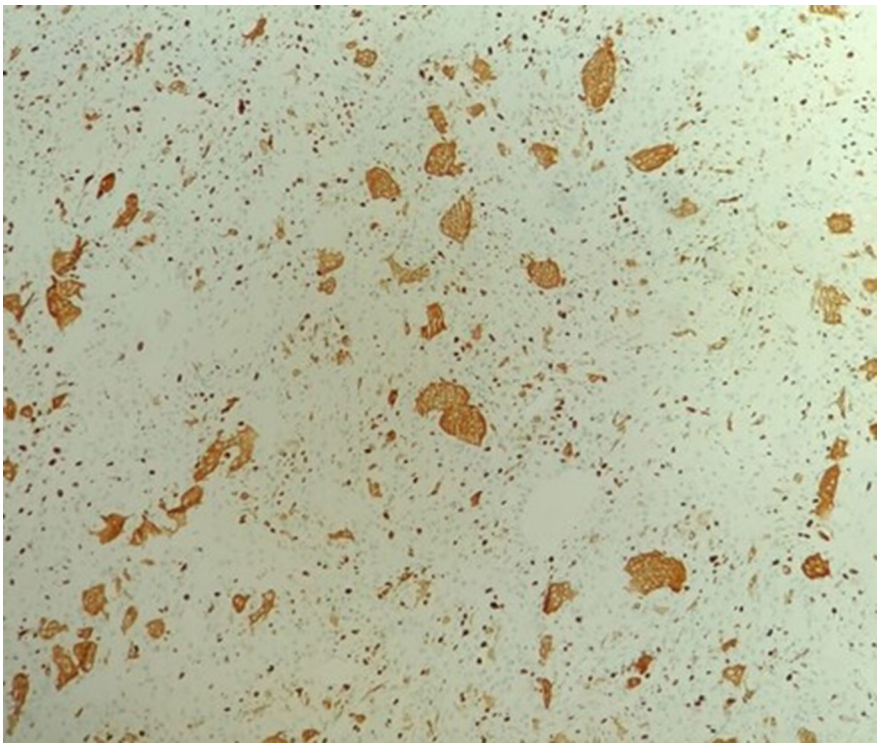


Figure 10.



DISCUSSION

Malignant phyllodes tumors with heterologous differentiation of osteosarcoma and chondrosarcoma are rare and account for 1.3% of all phyllodes tumors.

Breast tumors that show bone and cartilage differentiation and are included in the differential diagnosis are: intraductal papilloma with stromal metaplasia, phyllodes cystosarcoma, and stromal sarcoma.[9]

Further differential diagnoses include primary osteosarcoma of the breast, metaplastic carcinoma, and myositis ossificans[1][10][11].

CONCLUSIONS

Overall, breast sarcomas are biologically aggressive tumors that are rare and require careful study and evaluation of the differential diagnosis, as they are rarely encountered clinically. Pathologists must also consider this rare tumor in their differential diagnosis.

They are characterized by the possibility of local recurrence and hematogenous metastasis; therefore, they require careful follow-up over time.

Availability Of Data

Data supporting the findings of this study are available from the corresponding author upon request.

Conflict Of Interest

The authors declare that there is no conflict of interest with respect to the publication of this study.

REFERENCES

1. Li W, Ou Q, Li Y, Yuan LY. Malignant phyllodes tumor of the breast with predominant osteosarcoma and chondrosarcomatous differentiation: a rare case report and review of literature. Front Oncol. 2024 Apr 19;14:1372710. doi: 10.3389/fonc.2024.1372710. PMID: 38706594; PMCID: PMC11066275.

2. Tan BY, Fox SB, Lakhani SR, Tan PH. Survey of recurrent diagnostic challenges in breast phyllodes tumors. Histopathology. 2023 Jan;82(1):95-105. doi: 10.1111/his.14730. Epub 2022 Dec 5. PMID: 36468287.

3. Lakhani, SR; Ellis, IO; Schnitt, SJ, et al (eds): World Health Organization Classification of Tumours, Volume 2: Breast Tumours (ed 5). Lyon, France, IARC Press,2019

4. Bogach J, Sriskandarajah A, Wright FC, Look Hong N; Canadian Phyllodes Tumor Consensus Panel. Phyllodes Tumors of the Breast: Canadian National Consensus Document Using Modified Delphi Methodology. Ann Surg Oncol. 2023 Oct;30(11):6386- 6397. doi: 10.1245/s10434-023-13912-7. Epub 2023 Aug 9. PMID: 37556009.

5. Sars C, Sackey H, Frisell J, Dickman PW, Karlsson F, Kindts I, Marta GN, Freitas-Junior R, Tvedskov TF, Kassem L, Ali AS, Ihalainen H, Neron M, Kontos M, Kaidar-Person O, Meattini I, Francken AB, van Duijnhoven F, Moberg IO, Marinko T, Kollar A, Ahmed M, Remoundos D, Banks J, Jagsi R, Dossett LA, Lindqvist EK. Current clinical practice in the management of phyllodes tumors of the breast: an international cross-sectional study among surgeons and oncologists. Breast Cancer Res Treat. 2023 Jun;199(2):293-304. doi: 10.1007/s10549-023-06896-1. Epub 2023 Mar 6. PMID: 36879102; PMCID: PMC9988205.

6. Louie AD, Rosenberger LH. Phyllodes Tumors of the Breast: Addressing the Gaps in Consensus Recommendations for Clinical Management. Ann Surg Oncol. 2023 Oct;30(11):6296-6298. doi: 10.1245/s10434-023-14147-2. Epub 2023 Aug 14. PMID: 37580616.

7. Patil Okaly GV, Devadass CW, Metikurke SH. Malignant phyllodes tumor with heterologous differentiation: A rare case report. J Cancer Res Ther. 2015 Jul-Sep;11(3):651. doi: 10.4103/0973-1482.137996. PMID: 26458626.

8. Telli, M. L., Horst, K. C., Guardino, A. E., Dirbas, F. M., & Carlson, R. W. (2007). Phyllodes Tumors of the Breast: Natural History, Diagnosis, and Treatment. Journal of the National Comprehensive Cancer Network, 5(3), 324-330. Retrieved Sep 22, 2025, from https://doi.org/10.6004/jnccn.2007.0027.

9. Patil Okaly GV, Devadass CW, Metikurke SH. Malignant phyllodes tumor with heterologous differentiation: A rare case report. J Cancer Res Ther. 2015 Jul-Sep;11(3):651. doi: 10.4103/0973-1482.137996. PMID: 26458626.

10. Kerkar PB, Daga G. Primary Osteosarcoma of the Breast. Indian J Surg Oncol. 2018 Dec;9(4):578-580. doi: 10.1007/s13193-018-0787-x. Epub 2018 Jul 30. PMID: 30538392; PMCID: PMC6265182.

11. Creger PE, Mount MG, Reinhardt RB Jr. Primary Osteosarcoma of the Breast: A Rare and Aggressive Entity. Am Surg. 2025 Jun 3:31348251346541. doi: 10.1177/00031348251346541. Epub ahead of print. PMID: 40459296.