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A Case Report on Liposarcoma of Breast

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Background: Liposarcoma of the breast is a rare entity accounting for 0.3% of breast sarcomas which in turn are responsible for less than 1% of breast malignancies. We present this case for rarity and for its being a histological surprise.

Case Summary: We are reporting a case of 60 years female presenting with painless, progressively increasing lump in the right breast for 4 months. Examination revealed a 6*5 cm, firm, nontender, mobile, lump with smooth surface and clear margins in the right upper outer quadrant. Ultrasonography of breasts and mammography were suggestive of BIRADS III lesion. Trucut biopsy was suggestive of fibroepithelial lesion with cellular stroma. Keeping in view the age of the patient and size of the lump, excision biopsy was done. Histopathology report revealed liposarcoma arising in the fibrocellular stroma. Completion surgery with re-excision of the margins was done in the 2nd stage. Patient was asymptomatic with no evidence of recurrence after 1.5 years of follow up.

Discussion: Most of the liposarcomas have been found to arise in malignant phyllodes tumors, as opposed to primary liposarcomas of the breast which arise de novo from fibrocellular stroma. Our case was liposarcoma of breast which was identified on histopathology after excisional biopsy and was managed well with re-excision of the margins as per NCCN guidelines.

Conclusion: Liposarcoma of breast is rare. It can present as a benign lesion clinically. Treatment is by wide local excision with tumour-free margins or re-resection of margins in case of a histological surprise.

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Keywords: Liposarcoma; phyllodes; breast sarcoma; WHOOPS tumour; fibroepithelial lesion.

1. INTRODUCTION

Liposarcoma of breast are rare tumors. Less than 1% of breast malignancies are sarcomas of which only 0.3% are liposarcomas. Soft tissue sarcomas (STS), as such, amount to only less than 1% of all malignant tumors with an incidence estimated at 2-5 cases per 100,000 [1]. There are over 50 subtypes of STS. Liposarcoma comes under adipocytic group (WHO classification) [2] and the exact diagnosis of STS or Liposarcoma may pose a significant challenge. Primary liposarcomas of the breast arise de novo from fibro-cellular stroma. However most of the liposarcomas are seen to arise in malignant phyllodes tumors. Because of the rarity of the disease, there are no randomized trials specifically addressing treatment modalities in breast sarcoma. The largest series of 20 cases of breast liposarcomas was published by Austin and Dupree [3] in 1986. The treatment guidelines are thus based on data from non-breast soft tissue sarcoma trials. We present a case of breast lump which threw a histopathological surprise of liposarcoma after excision.

2. CASE PRESENTATION

2.1 Patient Information

A 60 years old post-menopausal lady presented with painless, progressively increasing lump in the right breast for 4 months. There was no history of nipple discharge or any other swelling. She was multipara with cumulative breastfeeding of 2yrs. There was no high risk factor.

2.2 Clinical Findings

Examination of breasts revealed a nontender, firm, ovoid, 6*5 cm mobile lump with smooth surface and regular margins in the right upper outer quadrant. There were no dilated veins. Bilateral Nipple Areolar Complex and Axillae were normal.

2.3 Investigations

a) Ultrasonography of Bilateral breasts revealed 5.7*3.4*5.4 cm well marginated, solid mass lesion in right breast at 8 to 10 O'clock position with heterogeneous echotexture, mild internal vascularity and no calcification as shown in Figs. 2 and 3. Axillary lymph nodes were unremarkable (Fig. 1).
b) Bilateral mammography showed 5.5*3*4 cm well defined homogeneous opacity in upper outer quadrant of right breast with lobulated contour with no calcification in the breast parenchyma A prominent vessel was seen in its vicinity with no evidence of any internal calcification, likely BIRADS III (Figs. 2 and 3).
c) Trucut biopsy was suggestive of fibroepithelial lesion with cellular stroma.
d) X-ray Chest and Ultrasonography of abdomen were normal.

2.4 Treatment

a) Keeping in view the age of the patient, size of the lump and discordance between imaging and histopathological findings, excisional biopsy of the lump was done after appropriate informed consent. A fragile mass of size around 5*5*4cm was excised. To our surprise the histopathological report came out as lesion suggestive of liposarcoma arising in fibro-cellular stroma of phyllodes tumor. There was a predominant stromal component with hypercellularity and abrupt foci of well differentiated liposarcoma, showing focal areas of bizarre multinucleated lipoblasts (Fig. 4). MDM2 expression was seen in the lipoblasts.
b) There was no residual lump in the breast on clinical examination or imaging. But in view of the histopathology report of Liposarcoma, a revision surgery was done excising the scar and 2cm area around it. Histopathological examination of this specimen showed a tiny residual lesion comprising of spindle cell proliferation. The IHC was performed and was S100, SMA, Pan CK negative, ruling out neural and myogenic differentiation as well as metaplastic carcinoma. The proliferative marker Ki67 showed a very high expression, These cells showed MDM2 expression, confirming Dedifferentiated Liposarcoma.
c) At 1.5 years of follow up, there is no evidence of recurrence.

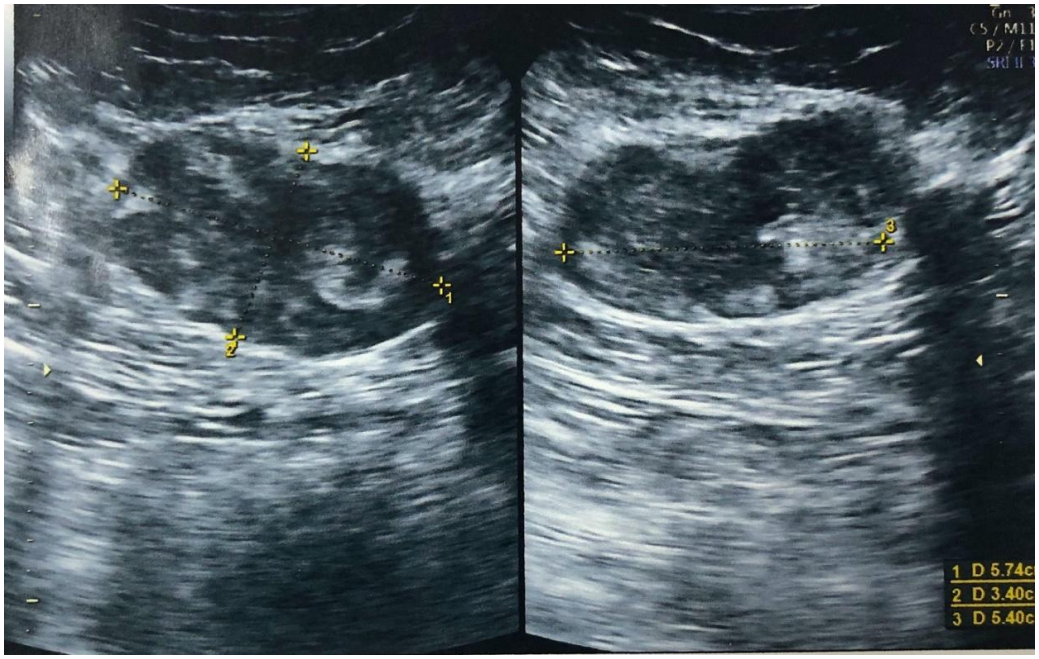

Fig. 1. Ultrasound picture of the right breast

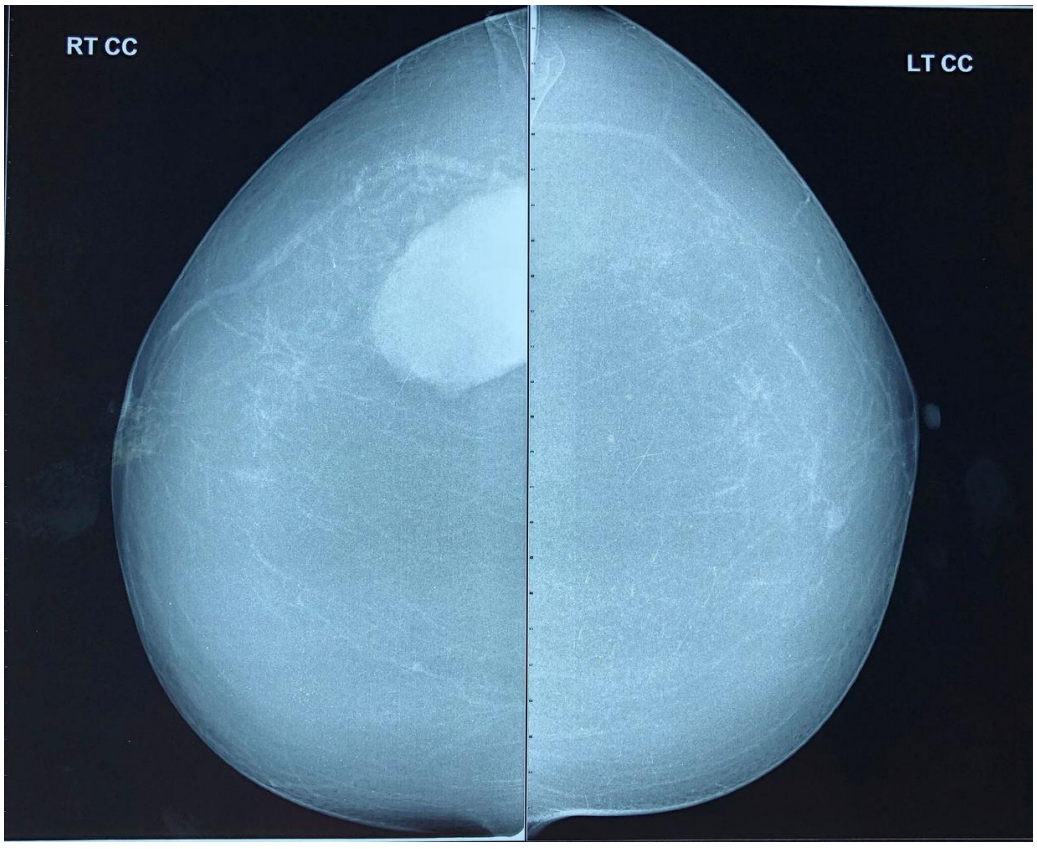

Fig. 2. Mammography (craniocaudal view)

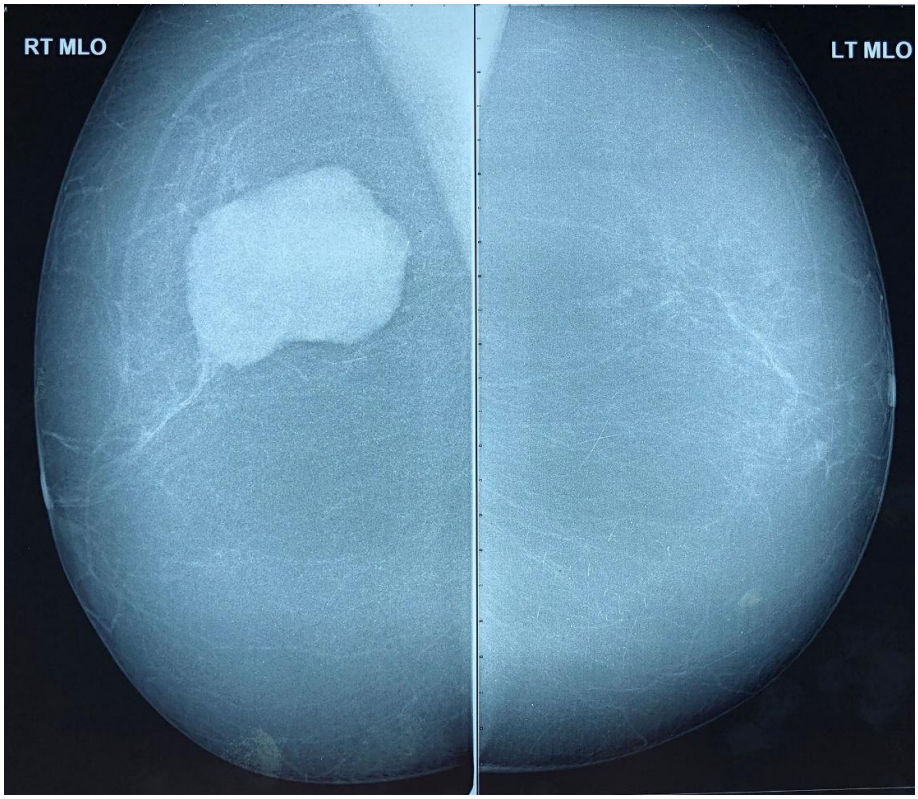

Fig. 3. Mammography (mediolateral-oblique view)

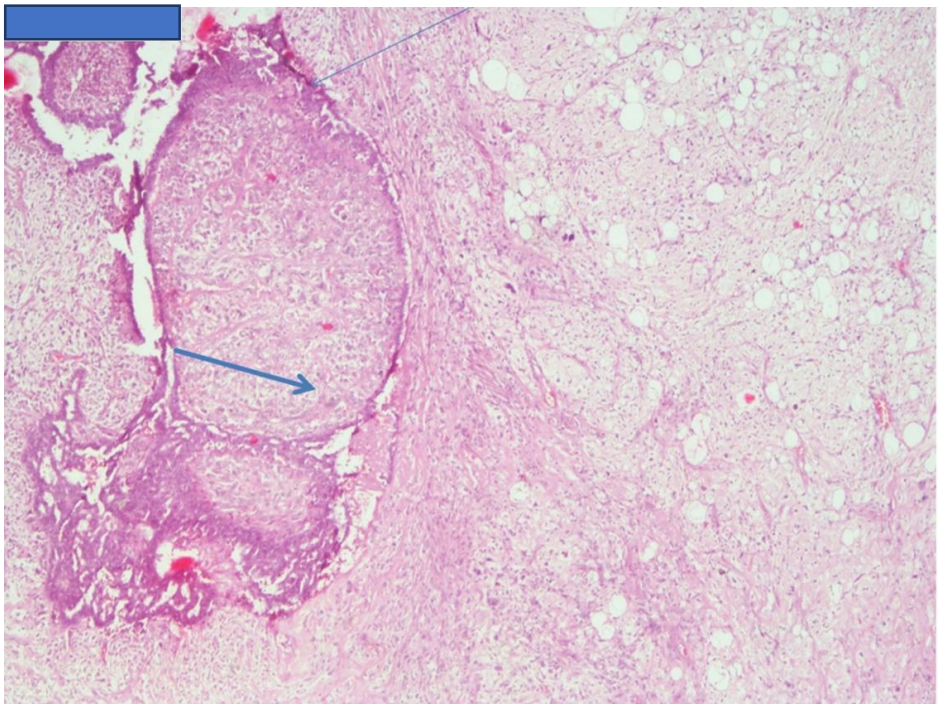

Fig. 4. Histopathological examination (10x) showing liposarcoma arising in fibrocellular stroma of phyllodes tumor

3. DISCUSSION

Liposarcomas of the breast may occur either as pure primary liposarcoma or arise in cystosarcomas phyllodes. STS are often found as histological surprise after surgery [4] as was in our case; and are also termed as WHOOPS tumour because of the unexpected malignancy. MRI done after surgery does not predict residual tumour with sufficient sensitivity and specificity [5]. Given the rarity of the disease, there are no randomized trials specifically addressing treatment modalities in breast liposarcoma or breast sarcomas. Breast liposarcomas are treated on the lines of soft tissue sarcomas of the trunk [6]. As per the NCCN treatment guidelines, surgical resection with appropriately negative margin of 1 cm or more is the standard primary treatment for most soft tissue sarcomas. Complete surgical excision of tumor with tumor-free margins is associated with favorable survival [3,7]. In the largest series with 20 cases of breast liposarcomas published in 1986 by Austin and Dupruee, follow-up data also indicated that complete surgical excision of tumor with tumor-free margins is necessary for long term survival [3]. Axillary lymph node dissection or sentinel node biopsy is not recommended in the absence of clinical evidence of lymph node involvement [8]. If surgical margins are positive on final pathology, re-resection to obtain negative margins should be strongly considered [9]. Re-resection is also indicated in WHOOPS tumor wherein the STS are found as histological surprise after surgery of a benign tumour [4] as the residual tumour is not detected by imaging with sufficient sensitivity and specificity [5]. Our cae was one such example where re-excision resulted in good outcomes. Postoperative RT should be considered following resections with close soft tissue margins (<1 cm) [6]. Chemotherapy has a limited role in resectable soft tissue sarcomas. Patients with high grade tumours may benefit from adjuvant chemotherapy [6]. In addition to the tumour free margins [7], the prognosis of Liposarcoma is strongly influenced by histologic subtype. Dedifferentiated liposarcomas are aggressive tumors with high metastatic potential while well differentiated and myxoid types (like our case) generally have a more favorable outcome [10].

4. CONCLUSION

Liposarcomas of breast are rare. They can appear as benign breast condition clinically and found as histological surprise after surgery. Diagnosis can be confirmed on histopathology and IHC staining for MDM2/CDK4 Protein expression. Treatment is like soft tissue sarcomas of trunk. Complete surgical excision of tumor with tumor-free margins is associated with favourable outcome. Re-resection of margins is indicated if it comes as a histological surprise.

DISCLAIMER

The authors have completed the CARE reporting checklist. All authors declare that there are no conflicts of interest. The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONSENT

All authors declare that “written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editorial office/Chief Editor/Editorial Board members of this journal."

ETHICAL APPROVAL

All procedures performed in the study involving human participants were in accordance with the ethical standards of the institution.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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