

Pregnancy Associated Primary Liposarcoma of Breast: A Case Report and Review of Literature

Naila Atif and Bilquis A. Suleman

Department of Histopathology, Shaikh Zayed Hospital, Lahore

SUMMARY

Primary sarcomas of breast are extremely rare and pregnancy associated liposarcomas are even rarer. We report a case of 22 years old female at 32 weeks of gestation who presented with primary liposarcoma of left breast. The patient presented with a fibrous hard mass measuring 30cm in circumference. Aspiration breast cytology revealed histiocytic like atypical cells with nuclear cellular pleomorphism. Trucut biopsy again revealed atypical round to oval pleomorphic cells, containing hyperchromatic nuclei and eosinophilic cytoplasm with intra cytoplasmic vacuoles and highly suspicious of malignancy. Mastectomy was done. The tumour was diagnosed histologically as primary liposarcoma of breast and it was confirmed on immunostains. The patient was discharged and postoperative recovery was uneventful.

INTRODUCTION

Liposarcoma is a lipogenic tumour of large deep seated connective tissue spaces¹. Primary sarcomas of breast are extremely rare with less than 0.1% of all malignant tumours of breast². Liposarcoma of breast represents 3-24% of the primary breast sarcomas³. Liposarcoma of breast associated with pregnancy is rarest and may follow an aggressive course⁴.

CASE REPORT

A 22 years old female presented with complain of pain left breast since three months. The left breast gradually increased in size and became more tender. Physical examination revealed young pale emaciated afebrile lady with no significant other abnormality. Examination of the lump revealed rounded mass measuring 30 cm in circumference, firm in consistency with few bosselations on surface. Areola and nipple were normal with no nipple discharge. Systemic examination revealed no other significant pathology.

FNAC of the lump was done which revealed groups and sheets of histiocytic like cells against a bubbly protenaceous background. Some of these

cells revealed nuclear cellular pleomorphism (Figs. 1-2). Incisional or excisional biopsy was suggested.

Trucut biopsy of the lump revealed atypical round to oval pleomorphic cells containing hyperchromatic nuclei and eosinophilic cytoplasm with intracytoplasmic vacuoles (Fig. 3). Decision of mastectomy was done on the basis of these findings.

Gross examination revealed left mastectomy specimen measuring 13x12x7 cm. Serial sectioning revealed a gray white encapsulated tumour situated 1 cm from the nearest resection margin. The cut surface of the tumour was pale nodular homogenous. Multiple sections were taken from the tumour with surrounding normal looking breast parenchyma.

Microscopic examination revealed well encapsulated cellular neoplasm. The neoplasm consisted of sheets of pleomorphic round to oval malignant cells with round to irregular nuclei and one or two nucleoli. Intracytoplasmic vacuolations were seen in many tumour cells (Fig. 4). Scattered mononuclear and multinucleated giant cells with lipoblast like morphology were seen (Fig. 5). Extensive areas of necrosis were present. Surrounding breast tissue revealed secretory changes due to pregnancy.

The case was diagnosed as liposarcoma of breast.

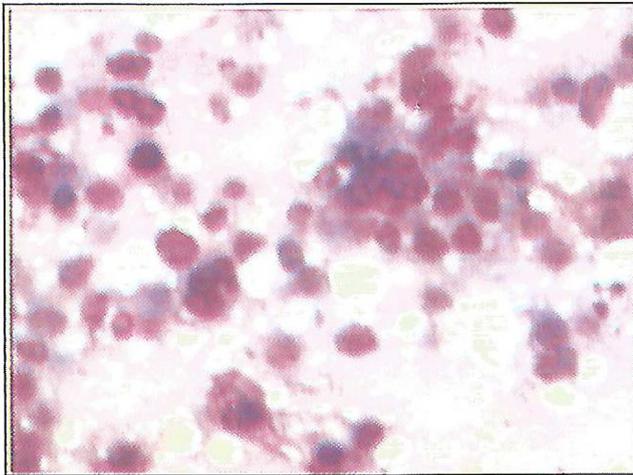


Fig. 1. FNAC of the lump pleomorphic malignant cells (x40 PAP stain).

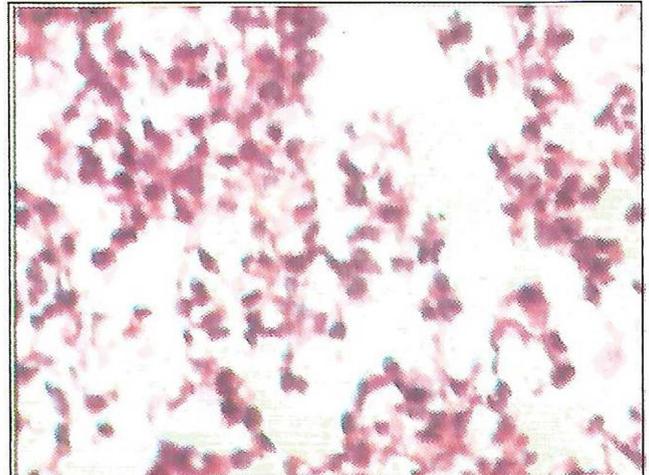


Fig. 3. Tru - cut biopsy - Atypical pleomorphic cells (x10 H & E stain).



Fig. 2. FNAC malignant cells with intracytoplasmic vacuolations (x40 PAP stain).

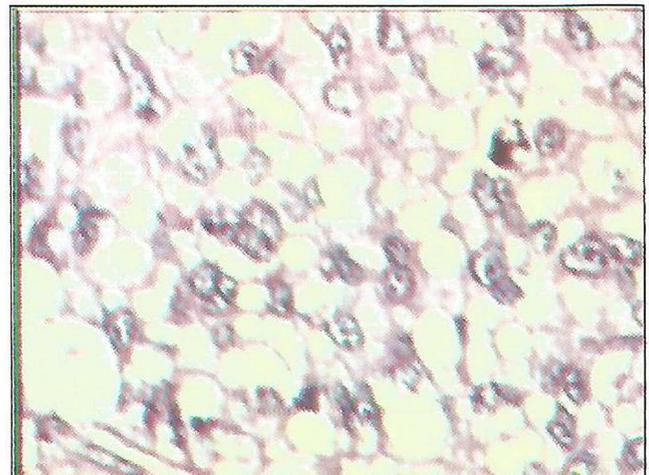


Fig. 4. Histology low power view - cells with intracytoplasmic vacuolations (x40 PAP stain).

Immunostains

Immunostains were done and showed strong positivity for vimentin (Fig. 6) and it was weakly positive for S-100 (Fig. 7). Desmin, CAM5.2, EMA and LCA, MNF-116 were negative (Fig. 8).

DISCUSSION

Liposarcoma is a rare malignant tumour that develops from fat cells⁵. Virchow first described liposarcoma in 1860. Benign and malignant lipomatous tumours are the most common neoplasms of subcutaneous and deep soft tissues in adults⁶. Most liposarcomas arise from deep soft

tissues like retroperitoneum and thigh and less frequently in mediastinum, omentum, breast and axilla.

The coexistence of pregnancy and liposarcoma is rare. Only 12 cases of pregnancy associated liposarcoma have been reported in English language literature. It is usually aggressive when associated with pregnancy⁷. The most recent WHO classification of soft tissue tumours recognizes five categories of liposarcoma.

1. well differentiated liposarcoma which includes adipocytic, sclerosing and inflammatory subtypes.
2. Dedifferentiated liposarcoma

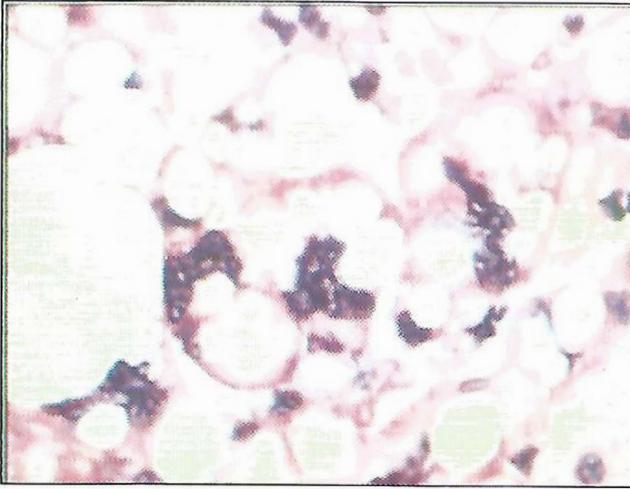


Fig. 5. Histology - Lipoblast (x40 H & E).

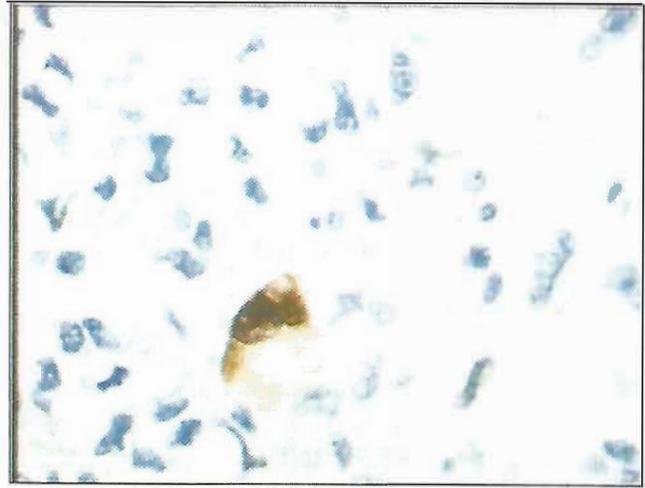


Fig. 7. Immunostain S-100 (x40 immunostain).

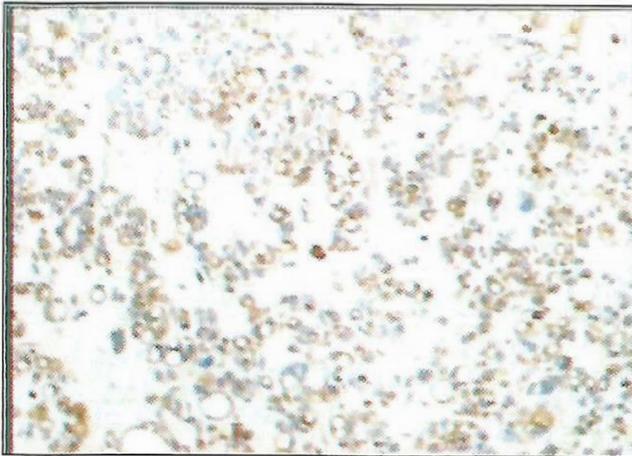


Fig. 6. Immunostain Vimentin strong positivity (x10 immunostain).



Fig. 8. Immunostain MNF-116-negative (x10 immunostain)

3. Myxoid liposarcoma
4. Round cell liposarcoma
5. Pleomorphic liposarcoma⁸

As far as FNAC is concerned hypercellular smears consist of single round to oval cells with scarce cytoplasm and naked nuclei. Myxoid stroma and intracytoplasmic vacuoles are seen. The presence of oval cells, myxoid stroma and intracytoplasmic vacuoles raise this diagnostic possibility of liposarcoma⁹. It is important to consider liposarcoma in the differential diagnosis of aspirates showing isolated polygonal to oval cells with vacuolated cytoplasm and pleomorphism to avoid a misdiagnosis of carcinoma¹⁰.

Histologically lipoblast is the key finding in the diagnosis of liposarcoma¹¹. The intracytoplasmic lipid displaces the nucleus and causes nuclear indentation and scalloping of nuclear membrane.

As this tumour was positive for vimentin and S-100 and negative for epithelial and muscle markers, it supported the diagnosis of a sarcomatous lesion. Two possibilities of sarcomatous lesions in breast were considered.. Either it could be primary liposarcoma of breast or the sarcomatous change in preexisting phylloides tumour. Before impending to a diagnosis of primary liposarcoma of breast careful and thorough sampling of tumour and surrounding area is essential to exclude the cystosarcoma

phylloides. We performed thorough and extensive sampling of the tumour and were unable to find any phylloides component.

On the basis of histology and support of immunohistochemistry a diagnosis of primary liposarcoma was made.

CONCLUSION

It is concluded that although liposarcoma of breast is a rare entity it should be included in differential diagnosis of breast tumours.

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The Authors:

Naila Atif
Trainee Registrar
Department of Histopathology,
Shaikh Zayed Hospital,
Lahore

Bilquis A. Suleman
Professor
Department of Histopathology,
Shaikh Zayed Hospital,
Lahore

Address for Correspondence:

Naila Atif
Trainee Registrar
Department of Histopathology,
Shaikh Zayed Hospital,
Lahore.