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Pleomorphic Liposarcoma of Breast: A Rare Case Report.

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ABSTRACT

Sarcomas of the breast constitute less than 1% of all malignant tumors of breast. Liposarcoma has an incidence of 0.003% of breast sarcomas. Here we present a rare case of pleomorphic sarcoma of breast in a 47 year old lady with right breast mass with mammography suggestive of a malignant lesion. Fine needle aspiration cytology revealed features suggestive of malignancy with the following possibilities: Malignant phylloides / Metaplastic carcinoma of breast. Simple mastectomy was performed. The tumor was diagnosed histologically as pleomorphic liposarcoma of breast. The patient was discharged and the postoperative period was uneventful.

Keywords: Breast, sarcomas, liposarcoma, pleomorphic

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INTRODUCTION

Liposarcoma of the breast is one of the rarest malignant breast tumors and constitutes 0.003% of all breast[1] tumors. There are only few cases reported in literature.

CASE REPORT

A 47 year old female presented with a rapidly growing lump in the right breast since one year. On examination, there was a lump measuring 10 X 8 cm occupying almost whole of the breast. The tumor was not adherent to the overlying skin. No nodes were palpable.

Mammography revealed a high density mass with marginal irregularity suggestive of malignancy. Ultrasonography of the breast revealed a solid mass. Patient had fine needle aspiration cytology done, which revealed many ovoid to spindle shaped cells with high degree of nuclear pleomorphism and atypia and scant eosinophilic cytoplasm. Features were suggestive of malignancy with the following possibilities: Malignant phylloides / Metaplastic carcinoma of breast.

The patient underwent simple mastectomy. On gross examination, serial sectioning of the mastectomy specimen revealed an apparently circumscribed tumor measuring 14 X 8 X 7 cm, involving all the quadrants of the breast with infiltrative margins. Cut surface revealed grey white to yellow, firm tumor with focal cystic spaces and myxoid areas (Figure 1). The tumor was 4.5cm away from the nipple areola complex and 0.5cm below the overlying skin. The deep margin clearance was less than 0.1 cm. The superior and lateral margins were found to be grossly involved by the tumor. The other margins were free from tumor. No lymph nodes were made out grossly.

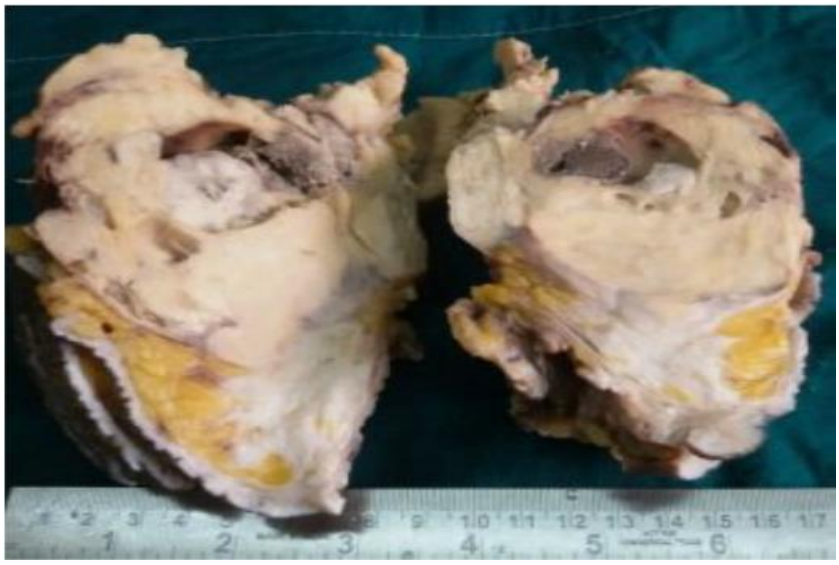

Figure 1: Gross specimen of Pleomorphic Liposarcoma of Breast showing well circumscribed yellow to tan coloured mass with focal cystic change

On microscopic examination:

Multiple sections studied showed a malignant lesion, composed of cells in sheets. Individual cells were ovoid mononuclear cells with pleomorphic nuclei, and vacuolated cytoplasm (FIGURE 2 and 3). Pleomorphic lipoblasts (FIGURE 4) and vascular channels were also noted. Mitotic activity was 1-2 / high power field . No areas of necrosis was noted. The possibility of malignant phylloides was ruled out by studying multiple sections.

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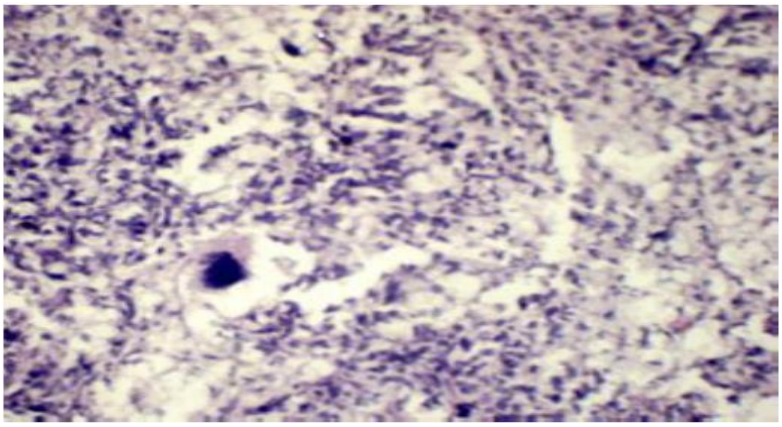

Figure 2: Low power view showing pleomorphic spindle cells with scattered lipoblasts (H&E)

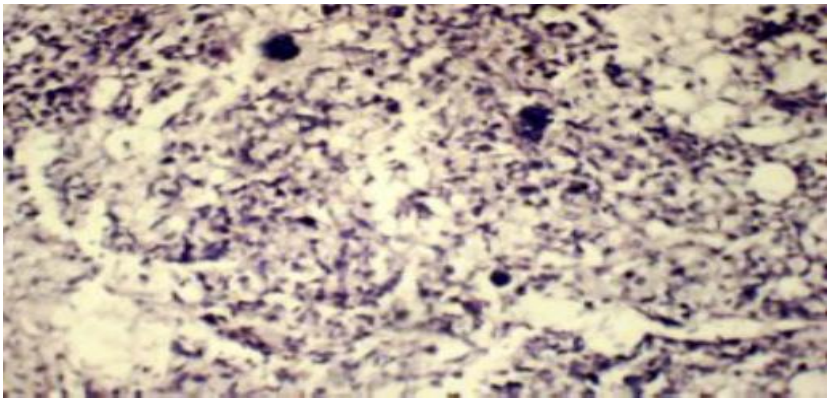

Figure 3: Low power view showing pleomorphic spindle cells with scattered lipoblasts (H&E)

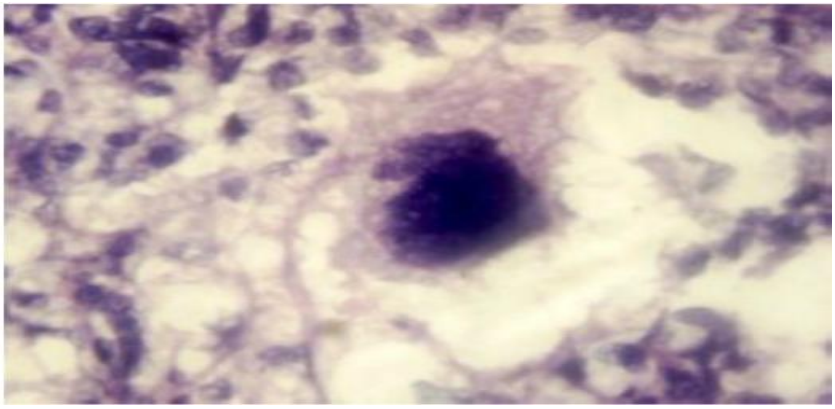

Figure 4: High power view showing pleomorphic lipoblast (H&E)

DISCUSSION

Sarcomas of the breast constitute less than 1% of all malignant breast neoplasms. Primary liposarcoma of the breast is an extremely rare lesion with an incidence of 0.003% of all the breast sarcomas [2]. It is the rarest subtype of liposarcoma and is discriminated from other high grade sarcomas by the presence of pleomorphic lipoblasts [3]. This malignancy may arise either directly from interlobular stromal tissue or it can develop as a component of cystosarcoma phylloides [4,5].

Primary liposarcoma of the breast occurs in patients in the age group from 19- 76 years [6]. Usually these tumors are slow growing painful mass, in contrast to malignant phylloides, which grows rapidly [7]. These neoplasms are generally unilateral in presentation with rare axillary lymph node metastases.

The typical gross appearance of these tumors shows a median size of 8cm in greatest dimension however, tumors larger than 20 cm have also been described [8]. Usually these tumors are well circumscribed, and up to one third of the tumor shows an irregular, infiltrated or lobular pattern of growth. The cut surface may be gelatinous, firm and yellow to tan in colour.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis includes tumors containing vacuolated cells that may be confused with lipoblasts [5,6]. Few tumors that contain vacuolated cells are lipoma with fat necrosis, myxoid malignant fibrous histicytoma, and signet ring cell carcinoma.

Typically, lipoblasts have scalloped irregular, hyperchromatic indented nuclei with sharply defined intracytoplasmic vacuoles with an appropriate histologic background. The distinction from nonlipogenic tumors is based on the demonstration of multivacuolated lipoblasts and occasional positivity for S100 protein in the spindle or poorly differentiated areas. In distinction from poorly differentiated tumors, the positivity of occasional cells for epithelial markers should be kept in mind. Malignant phylloides tumor with focal liposarcomatous differentiation should be ruled out by extensive sampling to exclude the characteristic glandular component.

The recurrent chromosome translocation t(12;16)(q13;p11) is a specific marker for myxoid liposarcoma. Myxoid and round cell liposarcomas share a key genetic defect, the fusion of truncated TLS and CHOP genes. The molecular studies in pleomorphic liposarcoma so far has not been so useful. MDM2 amplification was detected and few cases with TP53 mutations were also identified.

Unlike the sarcomas of the breast, pleomorphic liposarcoma metastasizes to axillary lymph nodes occasionally. If the tumor does not metastasize, classical radical mastectomy is the treatment of choice. When there is evidence of metastatic disease, radiotherapy will have a palliative effect.

CONCLUSION

In conclusion, pleomorphic liposarcoma is a rare tumor occurring in deep soft tissues of the extremities and are extremely rare in the breast. It behaves as a high grade sarcoma frequently metastasizing most commonly to the lungs. This tumor has a wide range of histologic appearances but no clinical or pathologic feature appears to be predictive of a more aggressive clinical course.

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