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Case Report

LIPOSARCOMA OF MALE BREAST: A RARE CASE REPORT

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A B S T R A C T

Primary liposarcoma of the male breast are very rare. The incidence of sarcoma of the breast is less than 1% of all breast malignancies. We describe a 72 years male patient who presented with a mass in his right breast which was slowly growing for 6 months. Fine needle aspiration raised the suspicion of sarcoma which was followed by a CT scan and metastatic workup which found to be negative. He underwent wide local excision of the mass. Received specimen was a 18.5x16x11 cm composed of lipoblasts along with large fibrotic areas, atypical spindle shaped stromal cells and mature fat suggestive of well differentiated liposarcoma. The deep resected margin was inadequate and the patient was planned for adjuvant radiotherapy to the chest wall.

INTRODUCTION

Breast cancer is one of the commonest tumours in women; however rarely seen in male cancer patients. Only 1% of all breast cancers occur in men as compared with 23% in women. (Sasco *et al* 1993) Sarcoma of the breast constitutes less than 1% of all malignant breast tumors and liposarcoma has a reported incidence of 0.3% of all breast sarcomas. (Parik BC *et al*) Liposarcoma is one of the most common soft tissue sarcomas in adults usually seen in extremities, trunk and retroperitoneum, but its occurrence in the breast is very uncommon. Here we report a rare case of liposarcoma of breast in a 72 year old male patient.

Case

A 72 years male patient presented with complaints of swelling in right breast for the last 5-6 months. The swelling was painless, slowly growing without any nipple discharge and itching. There was no family history, no history of any co-morbidities or any addiction. On clinical examination a 12x10 cm diffuse lump was palpable mainly involving outer upper and lower quadrant. It was nontender, fixed to pectoralis muscle but not fixed to the skin. Nipple areoa complex was normal. No axillary lymph node was palpable. Contralateral breast, axilla and supraclavicular fossa was normal clinically.
CT scan [Fig. 1] revealed a 16.3x13.2x11.6 cm sized well defined large mass with fat and nodular soft tissue component in right chest wall between pectoralis major and minor muscle. The mass involved the right pectoralis major muscle with thinning and stretching of pectoralis minor muscle. Few enlarged subcentimetric right lower paratracheal, mediastinal, carinal, right hilar lymph node, likely to be reactive were also present. Fine needle aspiration cytology from the mass was suggestive of carcinoma likely of mesenchymal origin. This was followed by a wide local excision of the mass which was done on January'17 [Fig. 2]. Post operative period was uneventful. The histopathological report [Fig. 3] of the surgical specimen showed tumor measuring 18.5x16x11 cm composed of lipoblasts along with large fibrotic areas, atypical spindle shaped stromal cells and mature fat suggestive of well differentiated liposarcoma. The deep resected surgical margin was involved. The Immunohisto chemistry examination was positive for Vimentin, CD34, patchy positivity for SMA, Ki-67 was <0.1%, S-100 highlighted lipoblasts and lipocytes which confirmed the diagnosis of well differentiated liposarcoma, FNLCLCC grade 1/3. In view of deep resected margin being involved by the tumor adjuvant radiotherapy was planned. [Fig.4]

DISCUSSION

Sarcomas are malignant tumours arising in mesenchymal tissues and constitutes less than 10% of all malignancies.[3] They can occur anywhere in the body, but mostly originate in the extremity (59%), trunk (19%), retroperitoneum (15%) and, head and neck (9%), Breast is one of the rare sites involved by sarcoma comprising less than 1% of all such cases. (BC parik e al, Cormier *et al*) Liposarcoma is the most common soft tissue sarcoma and accounts for approximately 20% of all mesenchymal malignancies. (Dei Tos AP *et al*) The classification suggested by WHO (Enzinger *et al*) in 1969 contains following five main groups; a) well differentiated; b) myxoid (embryonal); c) round cell; d) pleomorphic (poorly differentiated); and e) mixed.[6] Most of the reported cases have been found to be of well differentiated type as was seen in our case. These tumors usually arise from the primitive mesenchymal tissue in the deep soft tissue, such as intermuscular, fascial planes and deep-seated vascular

structures. The most common site of occurence are lower limbs, popliteal fossa, adductor canal, medial thigh, shoulder, retroperitoneal, perirenal, and mesenteric regions. (Sezer A et al.) They can be found in rarer locations such as the spermatic cord, peritoneal cavity, axilla, vulva, and the breast; liposarcomas represent 0.3% of all mammary sarcomas. (Whitsell et al.) Sarcoma usually starts as a painless mass which grows slowly, at times it may be painful as has been reported in about 5% of the cases. (Tarricone et al.) Our patient had a similar presentation with a history of 5 to 6 months.

Determination of the histologic type and degree of differentiation is crucial for prognosis and surgical planning of liposarcomas. Liposarcomas have to be differentiated from benign entities such as a true lipoma.[12] In evaluation of a patient with a breast mass suspicious for sarcoma, the diagnosis can be made via tru-cut biopsy or fine needle aspiration. Liposarcomas are fast growing in compared to lipoma and are composed of denser than normal adipose tissue. Diagnosis is done by clinical findings, confirmed with tissue pathology. The use of mammography, ultrasonography, CT scan, and MRI are used to provide an exact preoperative assessment of tumor extension.[13] The images of CT or MRI correlates with the morphological relationship between the areas of fat and non-fat components and can identify the histological subtype of liposarcomas. Thick connective septa (>2mm) inside of a poorly vascularized fat tumor are suggestive of the diagnosis of well–differentiated liposarcoma.[14]

The mainstay of treatment is surgical removal of the tumor with negative margins. The axillary dissection is only done when the axillary lymph nodes are found clinically involved.[8] These tumors do not appear to express hormone receptors, and adjuvant therapy with estrogen antagonists has no role in the treatment.[15] Well-differentiated tumors have dramatically different biological behavior from their intermediate- and high-grade counterparts. Patients with well-differentiated histology have a much lower chances of developing distant metastasis and dying from disease. The role of adjuvant radiation therapy is to control local recurrence.[16] As per the National Comprehensive Cancer Network (NCCN) guidelines tumors less than 5cm should be treated with surgery alone regardless of depth, consideration may be given for Radiotherapy if margins are inadequate, which is defined by the NCCN as margin less than 1 cm. Low grade tumors greater than 5 cm should be treated with surgery and RT for all patients whose margins are inadequate.[17] As our patient had a large tumour, deep resected margin was positive, so adjuvant radiation was given to the patient.

The prognosis of liposarcoma of the breast is difficult to predict because of the small number of reported cases. The main prognostic factors are the size and the grade of the tumor. (Cormier et al) The metastatic potentials for soft tissue sarcomas by grade are as follows: 5% to 10% for low-grade lesions, 25% to 30% for intermediate-grade lesions, and 50% to 60% for high-grade tumors.[4] Well–differentiated liposarcoma have no metastatic potential unless dedifferentiated, but they may have local recurrences,[10] chances of recurrence is high when tumor is located deep in the tissue. Metastasis mainly occurs hematogenously and lymphatic spread was said to be between 1 to 3%.[11]

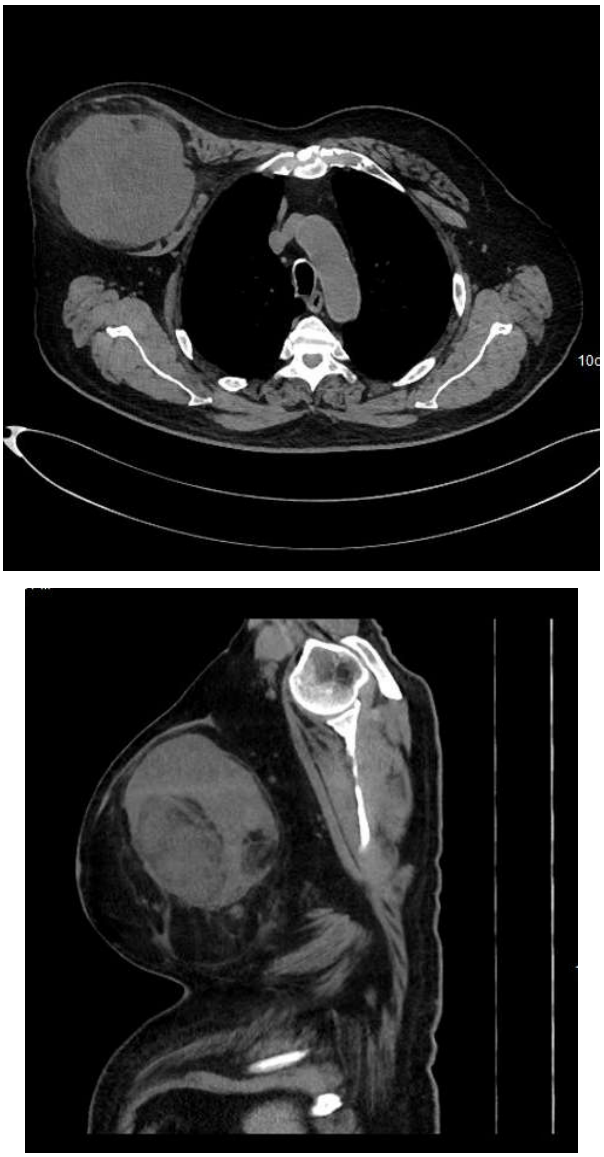

Fig 1 CT scan showing a 16.3x13.2x11.6 cm sized well defined large mas with fat and nodular soft tissue component in right chest wall between pectoralis major and minor muscle.

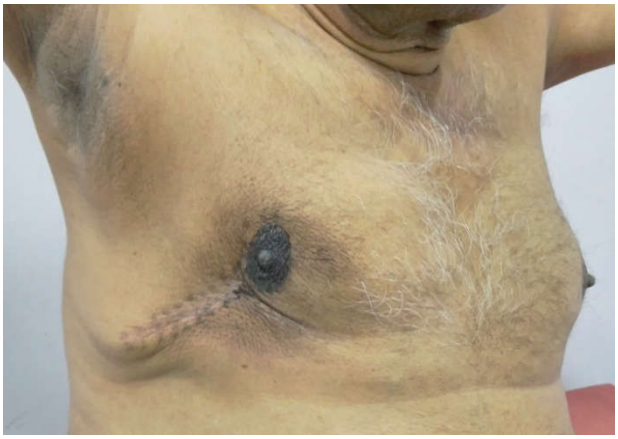

Fig.2 Showing postoperative status.

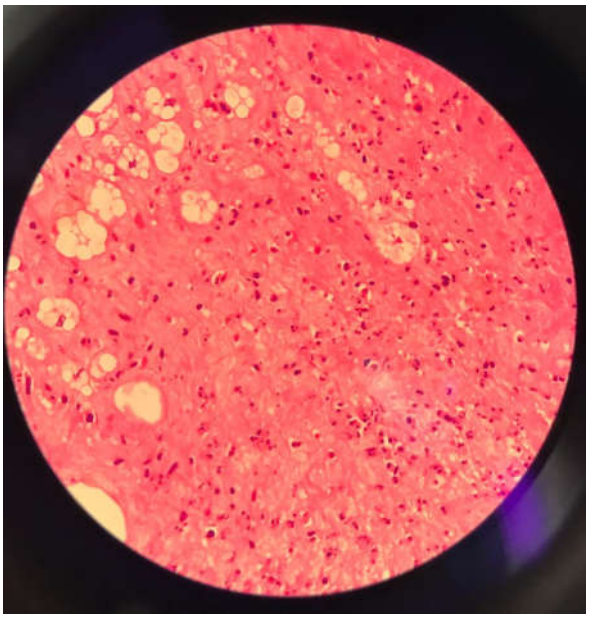

Fig. 3 Lipoblasts along with large fibrotic areas, atypical spindle shaped stromal cells and mature fat suggestive of well differentiated liposarcoma.

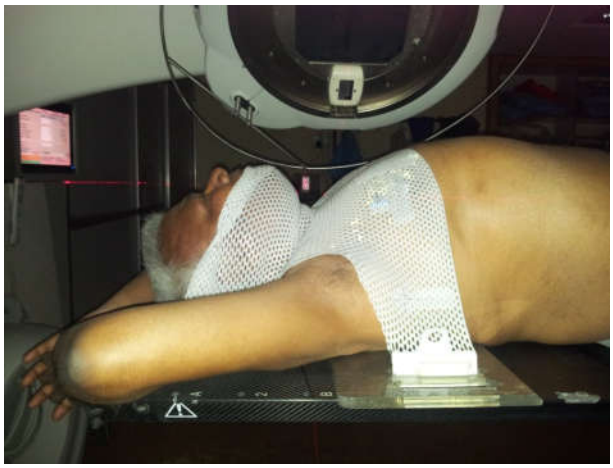

Fig.4 Adjuvant radiation therapy was planned.

Consent

Written informed consent was obtained from the patient for publication of this case report and radiological images.

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