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Osteosarcoma of Breast – A Case Report

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Sarcoma of breast is usually of the spindle cell variety. They arise from intracellular fibroadenoma or follow previous radiotherapy. Unusal bone forming sarcoma are rare entity especially osteosarcoma in pure form is seldom seen. We are reporting a case of osteosarcoma of the breast. The patient underwent radical modified mastectomy and received post operative adjuvant chemotherapy. She is presently disease free with a follow up of 5 months.

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Epidemiologically it has been seen that non-epithelial cancers of breast are rare tumours. They represent less than 1% of all primary breast malignancies. Clinico-pathologically they usually compromise of liposarcoma, fibrosarcoma, neurogenic sarcoma, soft tissue sarcoma, fibrosarcoma, leiomyosarcoma and osteosarcoma to name few of them. Although sarcoma of breast is a rare tumour but with the advent of fine needle aspirate cytology and trucut biopsy accurate diagnosis is often possible nowadays. With an increasing trend in all world centers towards conservative breast surgery, it is important that sarcomas should be recognized as separate entity from common epithelium breast cancer and differences in the behavior between the two tumours must be kept in mind while planning and executing the treatment modality. Osteosarcoma in the pure form is seldom seen. We report a rare case of pure osteosarcoma of breast.

THE CASE

Fifty five year old female presented in our radiotherapy out patient clinic with a history of a lump in the left breast for the past 2 months. There was no history of nipple discharge, bleeding or any systemic symptoms. On examination a hard lump of 4.5 x 4.5cm in upper outer quadrant of left breast was palpable. The borders were irregular and nipple retraction was seen. No evidence of peau de'orange, skin, chest or nodal involvement was seen. FNAC of the lump revealed presence of malignant cells

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compatible with carcinoma. Ultrasound of abdomen and pelvis, chest x-ray, bone scan, haematological and biochemical parameters were within normal limits. Other breast was normal on examination. Gynaecological examination was also within normal limits.

The patient underwent left sided radical modified mastectomy in the surgical unit at the All India Institute of Medical Sciences, New Delhi, India. The tumour was 4.5cm in diameter in the left upper quadrant. Multiple sections from the tumor showed spindling, giant cells, large area of malignant osteoid, necrosis in some foci and prominent vascular invasion (Fig. 1).

Figure 1. Histopathology of osteosarcoma breast showing osteiod islands and osteoblasts.

Extensive sampling revealed well marked positive osteoid reaction and negative reaction for epithelial component. Histopathologically features were compatible with osteogenic sarcoma. Immunohistochemistry for cytokeratin was negative. Overlying skin, margin and specimen of axillary tail, apical node, interneural tissue were free of tumor and the rest of the breast had fibrocystic changes in it. Patient's postoperative period was uneventful. She was planned for adjuvant chemotherapy with CAMP regimen for six cycles at 3 week intervals.

Inj. Cyclophosphamide 540mg/m^2 D_1
Inj. Doxorubicin 20mg/m^2 D_1
Inj. Methotrexate 170mg/ m^2 D_1
Inj. Cisplatin 100mg/ m^2 D_1-D_3
Inj. Leucovorin 15mg IV b.d D_2-D_5

Patient has completed six cycles of chemotherapy and is now on follow up with disease free interval of 5 months.

DISCUSSION

The unusual bone forming sarcoma is thought to arise from stroma of long standing fibroadenoma or from mastopathy as progression of osseous metaplasia. The first report of malignant mammary neoplasm of bone and cartilage is of Bonet[1] in 1700. Jernstorm[2] observed one osteosarcoma in 3319 cases of mammary carcinoma in period of 18 years. The tumour is usually made of pleomorphic, osteoblastic tissue, bone, cartilage, giant cell of osteoclastic type. It produces a mass that is smooth, mobile or cystic, radio-

graphically bone formation is seen[3] and dimensions as seen on x-ray correspond to clinical and pathological measurement[4]. No separate staging, prognostic factor or grading has been formulated. Haematogenous spread to lung is the rule. Prognosis is related to tumour size, extent, grade and metastatic potential .The disposition of sarcomas toward extensive local infiltration often well beyond what appears grossly normal and their inclination towards metastasis via blood vessels rather than lymphatic emphasizes the fact that optimal treatment has to involve a wide local margin of resection to take care of local control and adjuvant treatment therapy for control of metastasis. The rarity of tumor precludes prospective trials and much of our knowledge is anecdotal. In the series of Pollard et al[5], 11 of 19 patients having wide local excision had local recurrence and all but one died of metastases. Chemotherapy has been tried and there has been improvement in loco-regional control and overall survival especially in advanced diseases[6]. These tumors do not appear to display hormone receptors. Thus estrogen antagonist therapy has no role[7].

CONCLUSION

Since breast sarcoma is a rare entity the important focus is on role of various prognostic factors related to tumour size and anatomical extent. The prediliction towards extensive local infiltration and potential for systemic dissemination via blood vessels support treatment with a wide margin surgery and use of adjuvant chemotherapy to take care of distant metastasis[8]. In order to answer all related queries regarding optimal treatment of sarcomas we need to carry prospective trials and more research work. Radiotherapy has little to offer as primary or adjuvant therapy although some reports in pallative setting has been claimed[9].

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