ISSN No:-2456-2165

Chondrosarcoma of Breast - A Case Report

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Abstract:- Chondrosarcoma of breast is one of the rarest types of sarcomas of the breast. Diagnosis of mammary chondrosarcoma can be established only after excluding metaplastic carcinomas and malignant phyllodes by extensive sampling for evidence of in-situ or invasive carcinoma. Here we report here a case of chondrosarcoma of breast in a 50 –year-old woman.

I. INTRODUCTION

- Pure sarcomas are very uncommon tumours of the breast, representing about 0.5% of all mammary tumours.
- They represent a diverse and heterogeneous group of neoplasms. Pure sarcomas of breast lack epithelial component.
- Pure, primary and denova chondrosarcoma features as one of the rarer types of sarcomas of breast.
- A pre operative clinical and cytological diagnosis though possible in a few cases is usually not reached both due to marked similarily in clinical behavior and low index of suspicion.[1]
- Only fifteen cases have been reported in literature at the best of our knowledge.[2-8]
- We report a new case of chondrosarcoma of breast in a fifty year -old women.

II. CASE REPORT

- A 45 year- old postmenopausal woman presented with a lump in the right breast that had been gradually increasing in size over past 10 months. There was no history of nipple discharge or any other breast problem. Patient was married with two children. There was no family history of breast cancer. There was no history of exposure to radiation.
- On examination , a firm, large, ovoid, painless , mobile lump measuring 6 x 3 cms was noted in the upper and outer quadrant of right breast . It was not attached to underlying structures and overlying skin was unremarkable. Right axilla was clinically negative. Contralateral breast and axilla were normal on clinical examination. A clinical diagnosis of carcinoma breast was proposed. Ultrasound showed normal echo texture of glandular and adipose tissue and a large lobulated hypoechoic mass measuring 6 x 3 x 3 cms in the upper and outer quadrant extending into subareolar space between 9 ‘O’ clock and 11 ‘O’ clock positions.
- FNAC done elsewhere was reported as phyllodes tumour. The mass was excised and sent for histopathological examination. On gross examination mass was lobulated gray white and yellowish measured 8 x 5 x 3cms (Fig 1a). A bit of skin was present over the mass measuring 2x1cms (Fig 1b). On cross section the tumour was firm and gray white (Fig 2). There were no gritty, glistening or necrotic areas seen. Microscopically, a well differentiated chondrosarcoma was diagnosed (Fig. 3,4,5,6). A lobular tumour was seen with multiple chondroblasts in single lacunae. The chondroblasts were frequently multinucleated with plump nuclei. Frequent mitosis were seen . The tumour cells were surrounded by breast ducts lined by normal looking epithelial cells. The specimen was further extensively sampled to look for any other malignant stromal or epithelial component. None was found. The tumour cells were negative for hormone receptors (Fig 7) .A final diagnosis of primary chondrosarcoma of breast was made.
- After the diagnosis of chondrosarcoma, a modified radical mastectomy was done with level I axillary dissection. On histopathological examination no residual malignant cells were seen in the mastectomy specimen. The excised lymph nodes were free of metastasis.
- After the diagnosis of breast chondrosarcoma, other foci of cartilaginous tumour were searched in the entire body by proton emission tomography (PET) scan which did not show other foci of malignancy.
- Patient did not develop any post operative complications. She had been on regular follow-up for over a year now with no complaints what so ever.

III. DISCUSSION

- Primary breast sarcomas are a highly heterogeneous group of tumours . Majority of these are malignant fibrous histiocytoma, fibrosarcoma, liposarcoma and less commonly angiosarcoma, rhabdomyosarcoma, dermatomyosarcoma, desmoids tumours etc. Previous radiotherapy to the breast increases the risk of angiosarcoma of the breast. True stromal sarcomas are still rare. Extra skeletal chondrosarcoma and osteogenic sarcoma are still rare tumours. Most of the extraskeletal chondrosarcomas fit into the category of myxoid chondrosarcomas and occur in the extremities of adult patients. Primary chondrosarcomas occurring in breast is extremely rare. It contains chondrosarcomatous areas throughout the tumour and arises from the breast itself rather than from underlying bone or cartilage [1]. Only fifteen cases of pure and primary chondrosarcoma of breast have been reported so far. Kennedy and Biggart reported first case in 1967 and the last case has been reported by Badyal RK et al. in March 2012 [1-8].

- These tumours are usually large in size and occur in women more than 40 years old. Regional lymphadenopathy is expected in 14-20% of these cases, most of which are reactive hyperplasia [9]. The present case substantiates the clinical findings of previously reported cases. These tumours do not invade the overlying skin [1], as in the present case.
- Microscopically the tumour shows chondroid areas with cellular atypia and pleomorphism. This has to be clearly differentiated from matrix producing metaplastic carcinoma [10] and also from malignant phyllodes with chondroid differentiation [11].
- Differentiation from metaplastic carcinoma is possible by absence of direct transition between carcinomatous and mesenchymal component in the former. Further the sarcoma like elements in metaplastic carcinoma though acquire vimentin positivity, still retain the epithelial markers [12].
- Differentiation from malignant phyllodes with predominant chondrosarcomatoid component can be extremely difficult. Benign ductal elements interspersed among sarcomatoid areas should be taken as evidence of former whereas the present case displayed clear cut demarcation between the two elements. Most mammary tumours with areas of chondroid metaplasia show benign histological appearance. Malignant phyllodes displaying a chondrosarcomatous element is very rare [1].
- Surgery remains the mainstay of treatment for most sarcomatoid tumours [13]. Multimodality treatment may decrease local and systemic recurrence rates of somatic sarcomas, but results are inconclusive in patients with breast sarcomas [14]. As only fifteen cases of primary chondrosarcoma of breast have been reported so far, role of radiotherapy or chemotherapy in this particular breast sarcoma is difficult to assess.
- The tumour was negative for hormonal receptors. This supports the theory that adjuvant therapy with estrogen antagonists and other hormone manipulations have no role in treatment of mammary sarcomas.

IV. CONCLUSION

- Chondrosarcoma of the breast is a rare tumour. Histologically extensive sectioning of the tumor is very essential to rule out metaplastic carcinoma and malignant phyllodes tumor. Even tiny foci of ductal component should strongly question the diagnosis. Careful search for ductal epithelial component and features of metaplastic carcinoma and malignant phyllodes is mandatory to confirm chondrosarcoma of breast.

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