International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 8; Issue 06 (E); June 2019; Page No.19310-19312
DOI: http://dx.doi.org/10.24327/ijcar.2019.19312.3719

Case Report

# PRIMARY CHONDROSARCOMA OF THE BREAST: A RARE CASE REPORT

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**A R T I C L E I N F O**

***Article History:***
Received 10th March, 2019
Received in revised form 2nd April, 2019
Accepted 26th April, 2019
Published online 28th June, 2019

***Key words:***
Chondrosarcoma , Phylloides tumor

**A B S T R A C T**

**Introduction:** Pure sarcomas are very uncommon tumours of the breast accounts for < 1% of all malignant breast tumours. They are a heterogenous group of malignant neoplasm arising from mammary stroma. It is important that these tumors are recognised as a separate entity from the more common breast carcinoma for planning therapy. This case report describe a case of primary breast chondrosarcoma which was treated by simple mastectomy.

**Case Report:** A 30 year female presented with progressive and painless left breast lump measuring 28 X 25cm, not fixed to underlying chest wall. Overlying skin was unremarkable except few prominent veins. Simple Mastectomy was done considering a clinical diagnosis of Phylloides tumor. On histopathological examination, external surface was nodular and firm in consistency. On C/s entire breast tissue was replaced by multilobulated homogenous fleshy grey white tumor mass. Microsections examined revealed oval to spindle shaped tumour cells with atypia in a chondromyxoid background. Immunohistochemistry confirmed the diagnosis of Extraskel *et al* Chondrosarcoma.

**Conclusion:**
Clinical diagnosis of Chondrosarcoma is often challenging, it needs to be differentiated from phylloides tumour which has benign epithelial component. IHC plays an important role in diagnosis by excluding it from metaplastic carcinoma and malignant phylloides tumor. Patients having a high index of suspicion should undergo focused diagnostic approach to establish the early diagnosis.

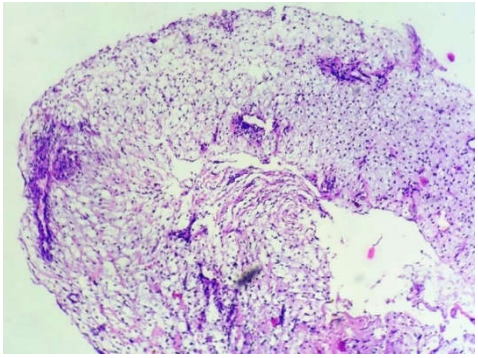


## INTRODUCTION

Breast sarcomas are primary nonepithelial malignancies, accounting for less than 1% of all breast tumors.[1,2] They arise from mesenchymal tissue of the mammary gland. Breast sarcomas can arise de novo, secondary to radiation therapy or from lymphedema after treatment of other malignancies. Of these, pure chondrosarcomas are even rarer.[1] They should be considered as separate entity and should be differentiated from metaplastic breast carcinoma with chondrosarcomatous differentiation and cystosarcomaphylloides. We report a case of a 30 year old female in whom histopathological examination following mastectomy confirmed the diagnosis of Primary Chondrosarcoma.

### *Case Report*

A 30yearold female presented in the Surgery outpatient department at Pt. B.D. Sharma, PGIMS, Rohtak with a painful and progressively increasing left breast lump for the last 3 months. There was neither anypersonal or family history of cancer nor any history of trauma or exposure to radiation. On Examination, a firm, nodular lump in left breast measuring 25X23X8 cm was noted. It was not fixed to the underlying chest wall. There were prominent veins on the overlying skin. Nipple areola complex was normal. There was no ipsilateral axillary lymphadenopathy. The contralateral breast and axilla were normal on examination. Radiological Imaging (sonography) revealed presence of hypoechoic lobulated lesion occupying whole of left breast. On FNA only few stromal fragments were found which were inadequate for any opinion. Trucut biopsy performed revealed oval to spindle cells with elongated nuclei showing mild anisonucleosis (Fig 1). On IHC vimentin was positive and CK was negative (Fig 2). Therefore, the biopsy was reported as a mesenchymal lesion favouring phylloides tumor.



A

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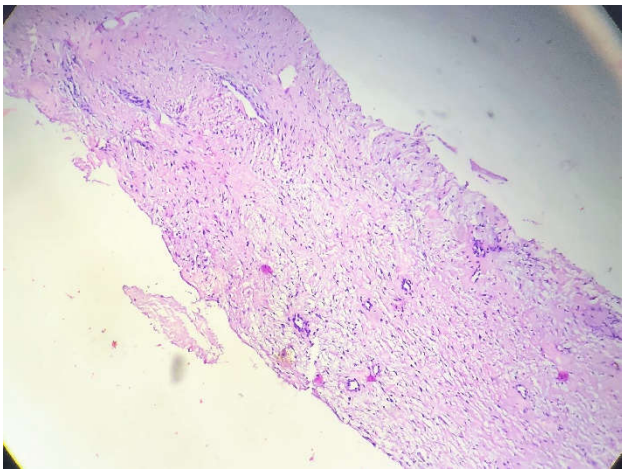

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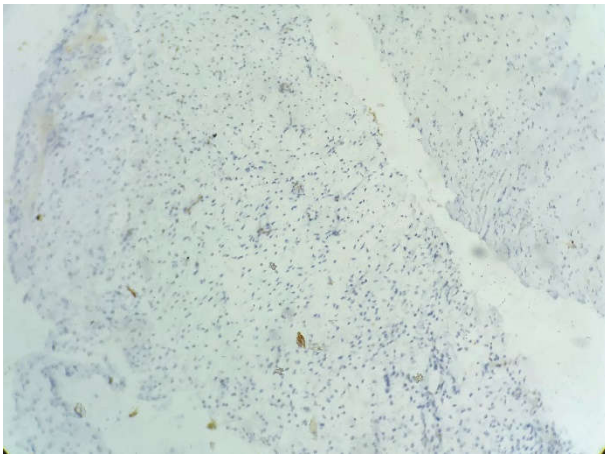
**Fig 1** Trucut biopsy-showing oval to spindle shaped cells (A)H&E 400X (B)H&E 100X



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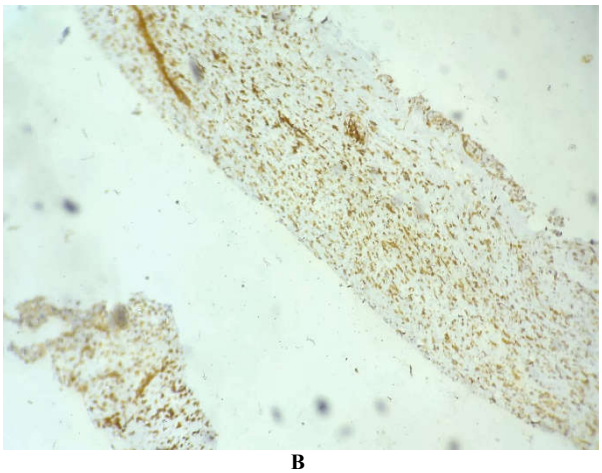

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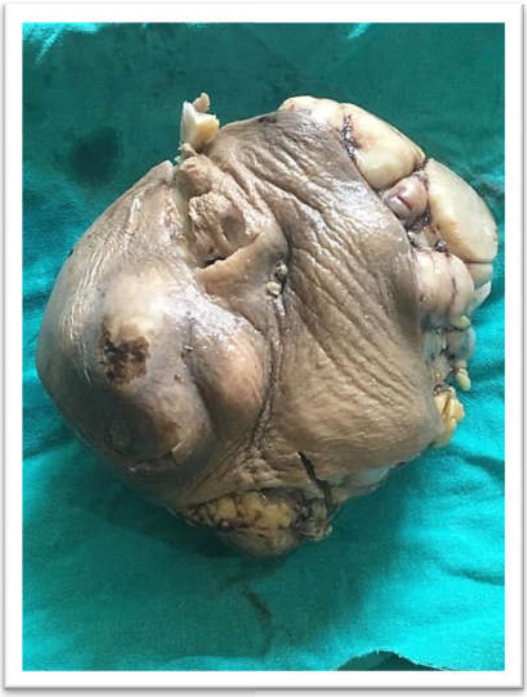
**Fig 2** IHC on Trucut biopsy- (A) CK negative, (B) Vimentin positive

Simple mastectomy was performed in view of phylloides tumor and the specimen was sent to the department of pathology for Histopathological examination.

Grossly the simple mastectomy specimen measured 28x25x12cms. External surface showed multiple nodules which were firm in consistency (Fig 3a). Cut surface showed a multilobulated homogenous fleshy grey white tumor which was grossly reaching upto the base (Fig 3b). Nipple areola complex was not involved. Microscopic examination revealed oval to spindle shaped tumor cells in a chondromyxoid background (Fig 4, 5). Tumor extended upto the base but nipple, areola and the overlying skin were not involved. On IHC, tumor cells were positive for Vimentin, S-100 and negative for P63, CK, SMA and Desmin (Fig 6). Extensive sectioning from the breast specimen was done and it did not show any area of infiltrative ductal carcinoma. A diagnosis of Extraskeletal Chondrosarcoma was made on the basis of morphology and immunohistochemistry.

The patient was however lost to follow up.



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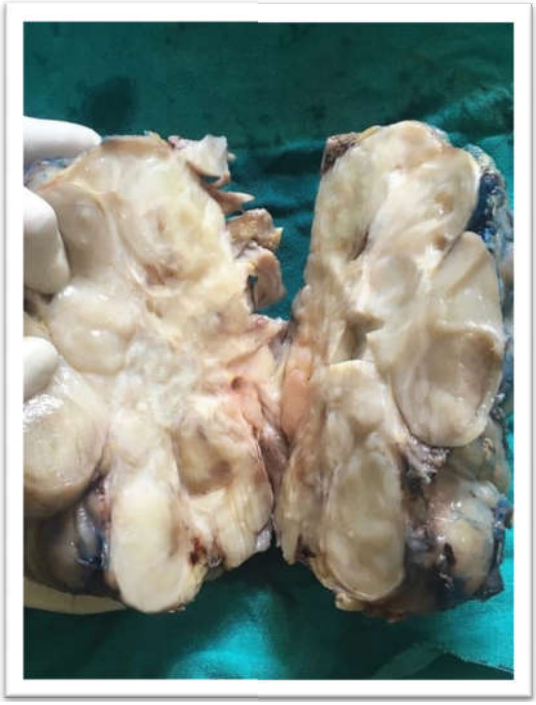


B

**Fig 3** A) Gross: A simple mastectomy specimen with overlying skin. External surface is nodular. B) On cut sectiona multilobulated homogenous fleshy grey white tumor area seen grossly reaching upto the base.

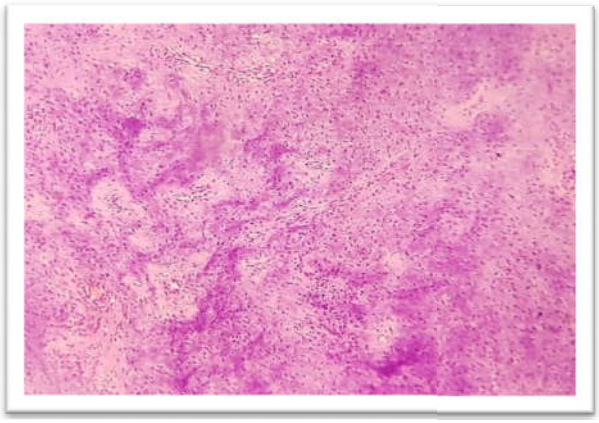


**Fig 4** On microscopic examination oval to spindle shaped tumor cells in a chondromyxoid background. (H&E, 100X)

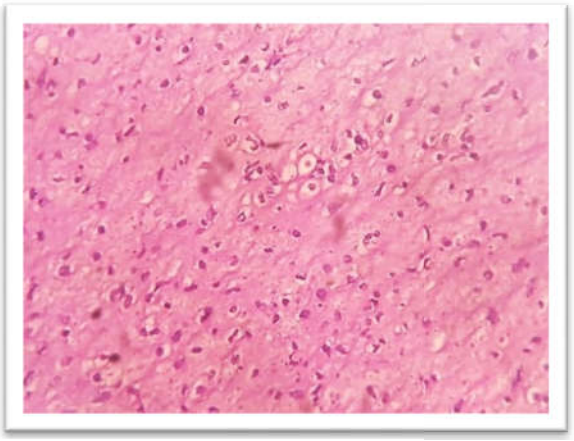
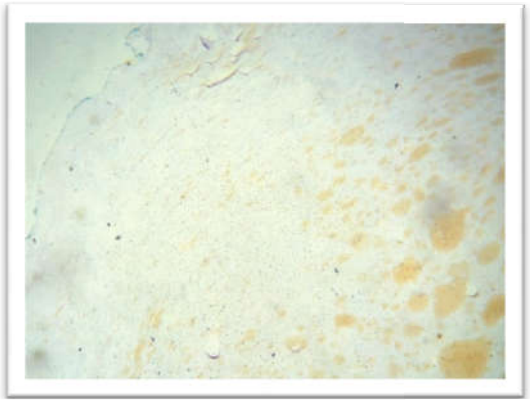


**Fig 5** Microsections revealed chondrocytes at high power.(H&E, 400X)



A

B

**Fig 6 A)** On IHC, tumor cells were negative for CK**. B)** positive for S-100

## DISCUSSION

Primary breast sarcomas are a highly heterogenous group of tumors. A majority of these tumors are malignant fibrous histiocytoma, fibrosarcoma, liposarcoma and less commonly angiosarcoma, rhabdomyosarcoma, dermatofibrosarcoma, desmoids tumors and so on. Out of these, primary and pure chondrosarcoma of the breast is an extremely rare entity. It contains chondrosarcomatoid sectors which arise from mammary tissue.[1,3,4]

Very few case reports on chondrosarcoma of breast are published. In the occasional case reports, these tumors have been found to be large in size, occuring in women over 40 years old. They usually do not invade the overlying skin. Regional lymphadenopathy is expected in 14-29% of these cases, most of which are reactive hyperplasias.[1,4,5] Microscopically the tumor shows chondroid areas with cellular atypia and pleomorphism.This has to be differentiated from metaplastic breast carcinoma and cystosarcoma phylloides with chondroid differentiation.

Immunohistochemistry is helpful for ruling out epithelial component and thus excluding metaplastic carcinoma. Further the sarcoma like elements in metaplastic carcinoma though acquire vimentin positivity, still retain epithelial markers. We can also rule out metaplastic carcinoma by absence of direct transition between carcinomatous and mesenchymal component.

Differentiation from malignant cystosarcoma phyllodes with predominant chondrosarcomatoid component can be extremely difficult. It has been mentioned that benign ductal elements interspersed- among sarcomatoid areas should be taken as evidence of former.[5] Most mammary tumours with areas of chondroid metaplasia show benign histological appearance. Another important differential diagnosis that should be considered in such cases is primary sarcoma of the chest wall metastasizing to the breast. The only method to rule out this possibility is thorough search for lesions in chest wall preoperatively through imaging; and during surgery.

Surgery remains the treatment of choice for most sarcomas. The role of chemotherapy and radiotherapy is not yet established because of the limited number of cases

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