Abstract:
Metaplastic carcinoma of the breast is a rare malignancy with two distinct cell lines described as a breast carcinoma of ductal type with a sarcoma like component. Metaplastic carcinoma is an aggressive neoplasm. This constitutes about less than 1% of all breast malignancies. A 49 years old female came with recurrent lump in left breast for 20days for whom lumpectomy was done 6 months before. Modified radical mastectomy was performed. The histopathological examination of both specimens revealed metaplastic carcinoma breast. This case is presented for its rarity. 
Keyword: Metaplastic carcinoma, breast, carcinosarcoma.

Case Report:
A 49 years old female was admitted in department of surgery with complaints of recurrent lump in left breast for the 20 days. Past history of lump in left breast 8 months back which progressed slowly over 3 months. Lumpectomy was done with 1cm margin clearance. Patient was not on follow up after discharge. Biopsy revealed metaplastic breast carcinoma. Patient was asymptomatic after surgery for 5 months. Presenting now with recurrent lump associated with pain. Left modified radical mastectomy was performed. Specimen was sent for histopathological examination.

PATHOLOGICAL FINDINGS:
Gross examination:
Specimen of modified radical mastectomy with skin and attached axillary pad of fat measuring 19 X 17 X 10cm. External surface: nipple and areola normal. Cut surface
showed a well circumscribed solid grayish white fleshy mass of size 10.5 X 10 X 9cm with pushing margins lying in central quadrant extending from just beneath the skin to deep resected margin. Deep resected margin grossly involved by tumor. Tumor also shows focal cystic areas (figure 1). Attached axillary pad of fat showed 6 nodes.

**Microscopy:**

Microscopic examination showed breast tissue with infiltrative tumor composed of malignant epithelial cells arranged in solid sheets having scant eosinophilic cytoplasm, large pleomorphic hyperchromatic nuclei separated by thin strands of desmoplastic stroma. Adjacent area shows spindle cells with scant cytoplasm oval pleomorphic nuclei prominent nucleoli admixed with areas of cartilaginous metaplasia (figure2, 3, 4, 5). Hence the histopathological diagnosis of metaplastic carcinoma was made. Further sections were stained with immunohistochemical markers cytokeratin, (figure6, 7) vimentin (figure8). The immunohistochemical markers were supportive of the histopathological diagnosis of metaplastic carcinoma of the breast. Lymph nodes: 6 out of 6 nodes were free of tumor.

**Discussion:**

Metaplastic carcinoma of breast is an aggressive rare neoplasm that has been reported to account 0.08 - 0.2% of all breast malignancies. Carcinosarcoma has been used as generic term for biphasic neoplasm having both malignant epithelial component and malignant stromal component. Carcinosarcoma has been observed in various organs throughout the body including ovary and uterus. It is a type of metaplastic carcinoma. The true definition of metaplastic carcinoma of the breast is a tumor of malignant epithelial tissue mixed with malignant cells of mesenchymal origin with apparent histological and cytological features present on light microscopy and immunohistochemical staining.

Metaplastic carcinoma of breast includes following categories carcinosarcoma, matrix producing carcinomas, spindle cell carcinoma, carcinoma with osteoclast like giant cells, squamous cell carcinoma which overlap considerably with each other. This is also classified as basal like tumors immunophenotypically. Our case shows distinct carcinomatous and sarcomatous areas.

Concurrent presence of usual insitu and invasive carcinoma in many of these tumors and transitions observed from these carcinomatous foci to metaplastic components has led to the conclusion that these neoplasm are derived from mammary glandular epithelial cells. Immunohistochemical studies reveal co-expression of vimentin and cytokeratin in components with epithelial and sarcomatoid phenotype. This has been interpreted as evidence of epithelial origin for both the elements. The present case shows cytokeratin positivity in both carcinomatous and sarcomatous areas.

Vimentin is expressed in sarcomatous areas. This indicates the cell of origin is same. Nodal metastasis is less frequent than adenocarcinoma of the breast. Metaplastic breast carcinoma has a lower incidence of regional lymph nodes and higher rate of systemic disease than ductal carcinomas of the breast. They tend to recur locally because neoplastic cells often extend within the perivascular tissues beyond the capsule of the tumor. Thus the recurrence of metaplastic carcinoma is high and translating into a poor outcome. Adjuvant chemotherapy with the use of standard regimens for adenocarcinoma of the breast may be relatively ineffective for metaplastic breast cancer.
Reference:


5 Aziza Nassar, Nicole Sookhan, Marta Santisteban, Sandra C Bryant, Judy C Boughhey, Tamar Giorgadze Diagnostic utility of snail in metaplastic breast carcinoma. Diagnostic Pathology 2010; 5:76.


Figure 1: Cut surface: well circumscribed grayish white fleshy mass with pushing margin. Glistening, with focal cystic areas.

Figure 2: photomicrograph of tumor shows solid sheets of malignant duct epithelial cells separated by thin strands of desmoplastic stroma.(H&E 10X)
Figure 3: photomicrograph of tumor with carcinomatous areas show cells with scant cytoplasm pleomorphic hyperchromatic nuclei (H&E 40X)

Figure 4: photomicrograph of tumor with sarcomatous areas with cartilaginous metaplasia (H&E 10X)

Figure 5: photomicrograph of tumor shows carcinomatous area with cartilaginous metaplasia (H&E 10X)

Figure 6: photomicrograph of tumor with carcinomatous areas show cytokeratin positivity. (H&E 40X)
Figure 7: photomicrograph of tumor with sarcomatous areas show cytokeratin positivity. (H&E 10X)

Figure 8: photomicrograph of tumor with sarcomatous areas show vimentin positivity. (H&E 40X)