



Metaplastic Carcinoma of Breast - A rare case

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Abstract

Metaplastic carcinoma is a rare type of invasive breast cancer accounting for 0.2 to 1 % of invasive breast carcinoma. It is rapidly growing tumor with less overall survival compared to invasive ductal carcinoma. Immunohistochemistry profile of this tumor is triple negative and CK 5/6 or as well as P63 positive.

We present a rare case of metaplastic carcinoma of breast in a 58 years old female patient to highlight its clinical presentation and histopathological features.

Keywords: Breast cancer, Immuno histochemistry, Metaplastic carcinoma.

Introduction

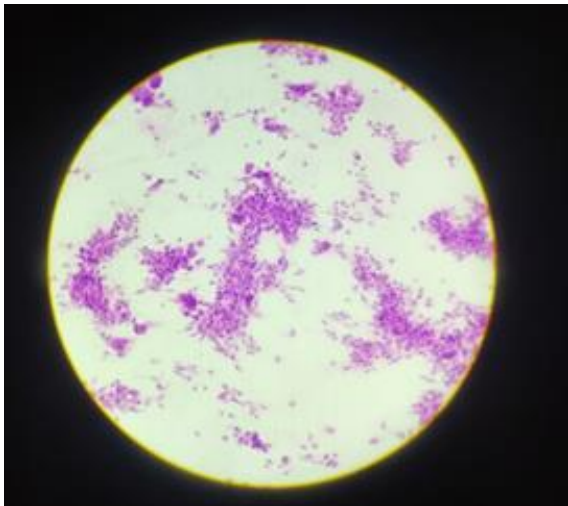
Metaplastic breast carcinoma is a rare type of invasive breast cancer that was first discovered in 1973 by Huvas et al as a breast carcinoma with mixture of epithelial and

sarcomatoid components [1,2]. There is controversy about the origin of the tumor. Some scholars believe that it originates from a single cell line while others believe it is to arise from myoepithelial cells. The evidence for that is these tumors show high expression of P63 [3]. We present a rare case of metaplastic breast carcinoma in a 58 years old female patient came with complaint of rapidly increasing lump in left breast.

Case report

A 58 years old female patient, presented with lump in left breast since 2 months. Lump was painless and increased rapidly in size. Sono mammo graphy revealed heteroechoic lesion with annulations measuring 5 x 4 x 3.3 cm in left breast at upper inner quadrant – BIRADS IV C.

Figure 1



Cellular smears showing spindle shaped neoplastic cells with bizarre atypical nuclei arranged in sheets with osteoclastic giant cells. (A 400x Lishman stain)

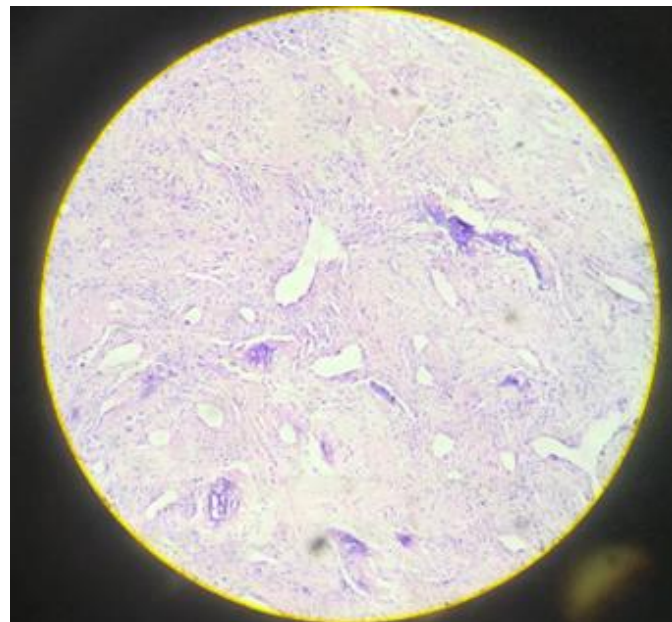
- Fine needle aspiration cytology from lump was positive for breast carcinoma. X-Ray chest and USG abdomen revealed no significant findings.
- Left Modified Radical Mastectomy done with left axillary clearance and specimen was sent for histopathological examination. Gross examination revealed a specimen of left modified radical mastectomy, which showed a firm tumor measuring 6.5 x 6 x 5 cm in upper inner quadrant.

Figure 2



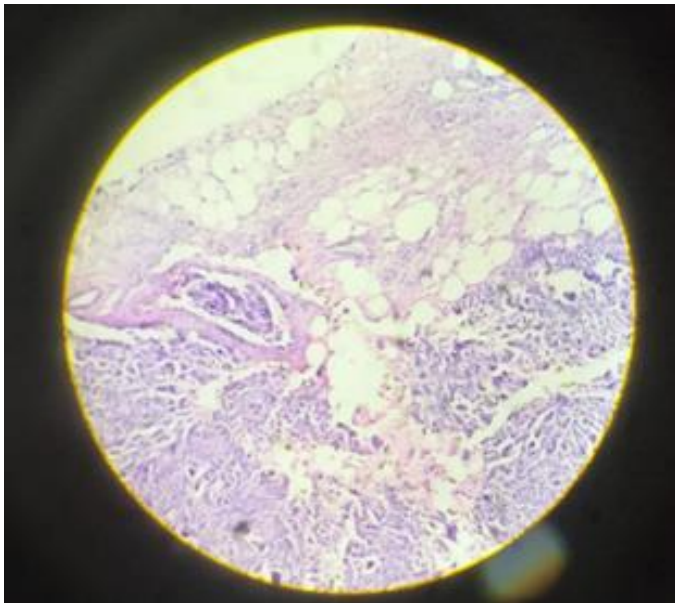
- Cut section of tumor was grey white, fleshy with variegated appearance, cystic degeneration, hemorrhage and tumor necrosis.
- Microscopy of tumor revealed a breast carcinoma with differentiation of epithelial component into mesenchymal elements. Carcinomatous component was solid comedo and cribriform ductal carcinoma in situ. Mesenchymal elements revealed spindle shaped neoplastic cells arranged in follicles with nuclear atypia. At places areas of chondrosarcoma and osteosarcoma were noted.
- There was gradual transition from carcinomatous to sarcomatous component with numerous osteoclasts like giant cells. Tumor necrosis and tumor emboli were seen. All the axillary lymph nodes were free from tumor.
- ER/PR, Her 2 status of tumor were triple negative.
- Considering these features diagnosis was given as metaplastic carcinoma with mesenchymal differentiation arising from left breast.

Figure 3



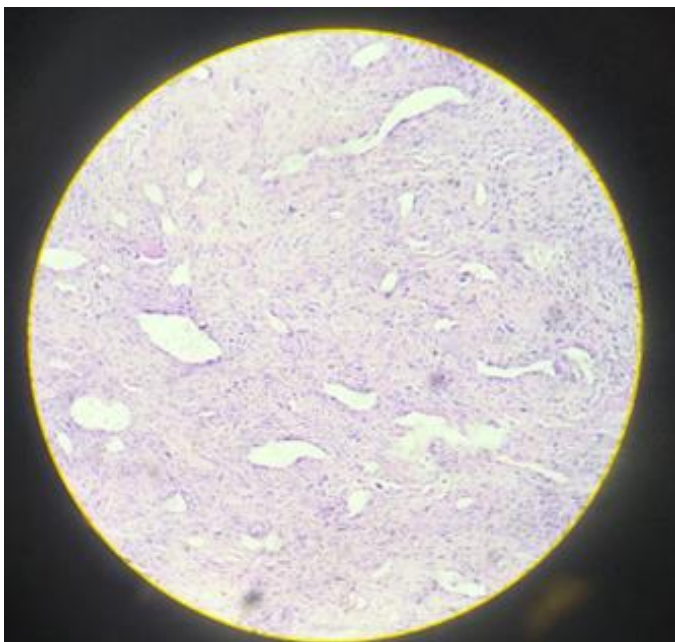
Osteoid and chondroid differentiation in metaplastic carcinoma (100x H and E)

Figure 4



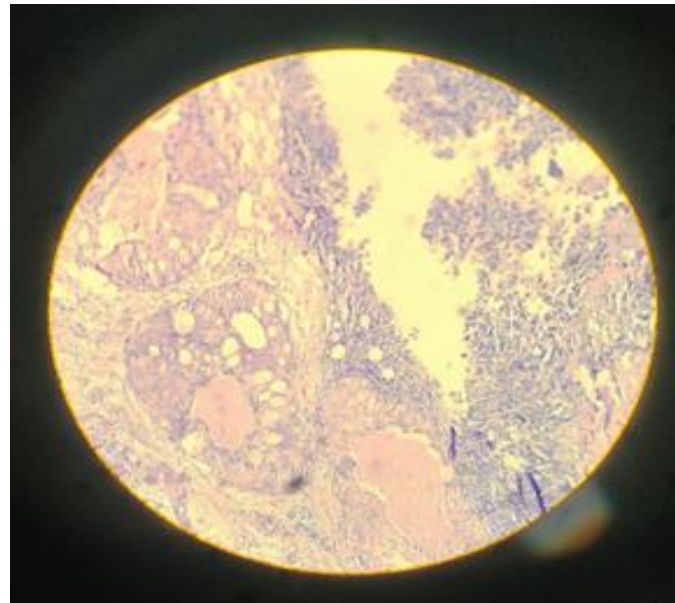
Invasive ductal carcinoma showing tumor emboli (100x H and E).

Figure 5



Sarcomatoid components – spindle shaped neoplastic cells with nuclear atypia (100x H and E)

Figure 6



Ductal carcinoma in situ – cribriform and comedo (40x H and E)

Discussion

- Metaplastic breast carcinoma is a term used for breast carcinoma in which there is a differentiation of epithelial component into non-glandular elements (squamous or mesenchymal).
- World Health Organization (WHO) 2012 has classified metaplastic carcinoma of breast as a special type of breast carcinoma including group of tumors such as low-grade adeno squamous carcinoma, fibromatosis like metaplastic carcinoma, squamous cell carcinoma, spindle cell carcinoma, carcinoma associated with mesenchymal differentiation (chondroid, osseous and other mesenchymal differentiation), mixed metaplastic carcinoma and myoepithelial carcinoma [4].
- In addition to morphology, immunohistochemistry of this tumor is triple negative as seen in our case. High molecular weight, cytokeratin, CK 5/6, CK14 and P63 which participate in cell differentiation and is expressed in myoepithelial cells are positive immunohistochemistry markers for this tumor [5].

- Metaplastic carcinoma of breast has potential of hematological metastasis rather than lymphatic spread [6]. In our case tumor emboli were noted and axillary lymph nodes were free from tumor supporting this statement. Some studies have revealed that metaplastic breast carcinoma occur in older women (>50 years) with a large tumor [7] [8].
- In our case similar findings were noted. Metaplastic carcinoma present as a rapidly growing mass as seen in our case. Tumor larger than 5 cm have poor prognosis [9].
- Although radiological studies are the initial line of diagnosis, metaplastic breast carcinoma has no characteristic radiological features and histopathological examination is needed for definitive diagnosis.
- Differential diagnosis for metaplastic breast carcinoma includes:
 - 1) fibromatosis which are vimentin positive, B-catenin positive and negative expression for P63 and high molecular weight CK [5] [10].
 - 2) Nodular fasciitis are vimentin and SMA positive and negative for epithelial markers [11].
- Survival is less in metaplastic carcinoma compared to invasive ductal carcinoma of breast and other triple negative breast cancers [12] [13].

Conclusion

Metaplastic breast carcinoma is a rare type of breast cancer with poor prognosis.

High degree of suspicion should be kept while investigating breast lump with rapid growth.

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