Abstract:
Metaplastic carcinomas of breast are rare, yet confusing and interesting neoplasms that comprises less than 5 percent of all breast malignancies. It has been reported that these tumours are more likely to occur in women older than 50 years. Histologically they appear to be both epithelial and mesenchymal in origin. The major criterion for diagnosis of metaplastic carcinomas of breast is the presence of overt carcinomas that are composed largely of squamous and spindle cells, and those with sarcoma-like growth pattern including heterogenous elements such as bone and cartilage. They are also termed as matrix-producing carcinoma, carcinosarcoma, squamous carcinoma of ductal origin and adenosquamous carcinoma. The purpose of this journal is to better characterize the clinical course, treatment and prognostic factors of metaplastic breast carcinomas.

Keyword: METAPLASTIC CARCINOMA

CLINICAL CASE DISCUSSION: A 40 year old daily wage worker from madurai was admitted with chief complaints of lump right breast since 10 days. H/o rapid progression +. H/o constant, throbbing unbearable and non-cyclical pain was present. Fever was present. No opposite breast or axilla lump was there. No history of nipple discharge. History of loss of appetite was present but no history of loss of weight. No symptoms suggesting of chest or brain metastasis. No history of bony intractable pains. She is a non-lactating women who attained menarche at age of 13 years, married at age of 20 years, delivered two children by per vaginal route, breast fed completely both the children upto their ages of 2 years. No abnormal menstrual history either before marriage or after. Regular periods 30 days with 3-5 days flow. No history of pill intake. No other family members are affected with same complaints or died of any medical illness.
On general examination patient was unremarkable with moderate build and nutrition. Local examination of right breast shows 10*10 cm irregular lump palpable in whole of upper quadrants with areas of soft and cystic in some areas to firm and hard in some. Skin appeared to be stretched, shiny, and inflamed, free from underlying lump. No peau-d’orange appearance. There were no ulcer or sinuses or dilated veins. Nipple and areola pushed to right side. Lump was not fixed to chest wall. Right axilla shows 2-4 anterior group of nodes palpable but not hard or matted. Right upper limb was unremarkable. There were no supraclavicular nodes. Her left breast and axilla were normal clinically. Her per vaginal and per rectal examinations were unremarkable. Her biochemical investigations were all within normal limits. Chest x-ray was normal, as so the ultrasonogram of abdomen, bone scan could not be done. Provisionally diagnosis of right breast abscess to rule out malignancy was made. FNAC revealed about 80 ml of non-purulent, non-hemorrhagic, non-milky, serosanguinous material and sent for cytology. Later cytology was positive for malignant cells and patient complained of painful lump in the breast even after aspiration. Hence patient was planned for surgery. In the period of assessment for surgery ultrasound of the right breast was done. It revealed a mixed echogenic lesion of 9cm*8.5cm*6.4cm with surrounding fat stranding. Right axillary node of 1.4cm*1.4cm seen. Reported as ?carcinoma right breast to correlate clinically and histopathologically.

She underwent right side modified radical mastectomy and her post operative period was uneventful. Histopathological report of the specimen showed sections of necrotic area and dilated ducts filled with carcinomatous cells having comedo type necrosis. Also foci of metaplastic squamous cells infiltrating stroma. Spindle shaped sarcomatous area is also seen. Nipple and resected margins were free of tumor cells. All five axillary nodes were negative for tumor invasion. Final report was metaplastic type of infiltrating ductal carcinoma grade III with extensive necrosis and absence of tumour invasion in all five axillary nodes.
DISCUSSION: Metaplastic carcinomas of breast are relatively rapidly growing breast lump lesions with average size at presentation of 8 cm. (10,11). Oberman (1) classified into three types: spindle cell carcinoma, invasive ductal carcinoma with extensive squamous metaplasia and invasive carcinoma with pseudosarcomatous metaplasia. They present usually after 50 years of age. All duration of breast symptoms are less than 3 months. Ultrasonogram of breast is very helpful when compared to usual carcinoma breast. Axillary nodes are usually negative. ER/PR status is also negative in majority of patients suggesting no role for hormonal manipulation or intervention. The prognosis varies with grade of ductal component in these biphasic tumours. Deaths have been reported within 2 years due to lung and bone metastasis, but they are generally of good prognosis Table. 1

USG FINDINGS OF METAPLASTIC CARCINOMA BREAST:
1. Oval shapes (round/irregular)
2. Indistinct margins (circumscribed/indistinct)
3. Parallel orientation
4. Echogenic halos.
5. Complex echogenicity.
6. Posterior enhancement
7. Calcifications
8. Metastatic axillary nodes

FIG. 5.
POOR PROGNOSTIC FACTORS
Age less than 50 years.
Tumour size more than 5cm.
Duration of symptoms more than 3 months.
Advanced stage at presentation
Axillary nodal status is of doubtful value in this variant of breast carcinoma.

PATHOLOGY OF METAPLASTIC CARCINOMA:
Pathological assessment included: the type of epithelial and mesenchymal components, the proportion of monophasic to biphasic tumours and the presence of adjacent in-situ carcinoma/atypical epithelial proliferation. The mean age of the patients was 61 years with a median of 64 and range 46±82 years. The mean size of the tumour was 52 mm. None of the patients will have distant metastasis at presentation and only few case will have local lymph node metastasis which had a carcinomatous appearance.

Pathologically 33.3% cases had no or almost undetectable epithelial structures by light microscopy, i.e. `monophasic sarcomatoid carcinoma'. The remaining cases revealed varying proportions of both epithelial and mesenchymal elements, i.e. fig. 7 `biphasic sarcomatoid carcinoma'. Of the epithelial component, 50% tumours have predominantly carcinoma of no special type, one lobular and one tubular carcinoma. The mesenchymal component was fibromatosis/nodular fascitis-like, malignant fibrous histiocytoma-like (MFH), osteosarcoma-like and fibrosarcoma-like in 42%, 33%, 17% and 8% tumours, respectively. In 3/4 monophasic tumours, the mesenchymal component was of a low-grade fibromatosis/nodular fascitis type. In 50% of the cases there was associated in-situ atypical epithelial proliferation ductal carcinoma in situ (DCIS) and less than 10% atypical ductal hyperplasia.

Fig. 8
a. storiform b. lobular c. mucin
Table.2
TREATMENT and FOLLOW-UP:
It is unclear what is the best, or is at least better, treatment for metaplastic carcinomas of the breast. Like most investigators [1–3,6], we performed modified radical mastectomy for this patient. In the study by TZU-CHIEH CHAO, et al. 6 (42.9%) patients underwent postoperative adjuvant chemotherapy. Five of these 6 patients were alive without evidence of disease at 3 years, 3 months to 9 years, 4 months (median 7 years, 4 months) after modified radical mastectomy, and only one patient had metastases to ribs with pleural effusion at 8 months after surgery (Table III). Adjuvant chemotherapy was not administered to some, but chemotherapy with radiation therapy and tamoxifen was given to the patient for metastases to the sternum. These patient was still alive at 10 years, 10 months after the initial therapy. In the study of Pitts et al. [3], 7 of 34 patients underwent chemotherapy, and 4 of them were disease-free at 7 months to 70 months of follow-up. It is not clear whether chemotherapy would improve the prognosis since it has not been possible to assemble a sufficiently large series to assess the responsiveness of metaplastic carcinomas to chemotherapy. A proper assessment of prognosis requires sufficient cases to consider tumor size, histologic type, grade, nodal status, and the form of treatment. This patient has undergone modified radical mastectomy and had completed six cycles of cyclophosphamide, adriamycin and 5-fluorouracil based chemotherapy. She is at present alive and evaluated for distant metastasis and found to be disease free.

Table.3
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13 Correlation1Jung Hee Shin, M.D., Asiry Hwang, M.D., Hye-Young Choi, M.D., Sun Hee Sung, M.D., YooKyung Kim, M.D., Sun Hwa Lee, M.D.