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METAPLASTIC CARCINOMA OF BREAST A RARE ENTITY- TWO CASE REPORTS

Vanishree M.[1], Sunderesh Kamal Chander*[2], Sonti Sulochana[3] and Dr. Dhanya Menon[4]

[1,2]Postgraduate, [3,4]Professor

Department of Pathology, Saveetha Medical College and Hospital,

Saveetha Nagar, Thandalam, Chennai 602105, Tamil Nadu, India.

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***Corresponding Author**
Dr. Sunderesh Kamal Chander
Postgraduate Department of Pathology, Saveetha Medical College and Hospital, Saveetha Nagar, Thandalam, Chennai 602105, Tamil Nadu, India.

ABSTRACT

Metaplastic carcinoma of breast is a rare entity, representing about 0.2 to 5% of invasive carcinomas of breast, usually of poor prognosis with a disease free survival rate being 78.1%. In the present study, we report two cases of metaplastic carcinoma breast, one revealing mesenchymal differentiation-chondroid and osseous differentiation and other revealing mixed epithelial and mesenchymal type showing squamous and pleomorphic spindle cell sarcomatous elements. Both were estrogen receptor, progesterone receptor and Her2neu negative on immunohistochemistry. Early diagnosis of metaplastic carcinomas is of exceeding importance due to the difference in the therapeutic regime and its poor prognosis. Metaplastic carcinomas express HER1/epidermal growth factor receptor (EGFR), and treatment with EGFR inhibitors is effective in few studies.

KEYWORDS: Metaplastic, Breast, Carcinoma, Triple negative, EGFR, EGFR inhibitor.

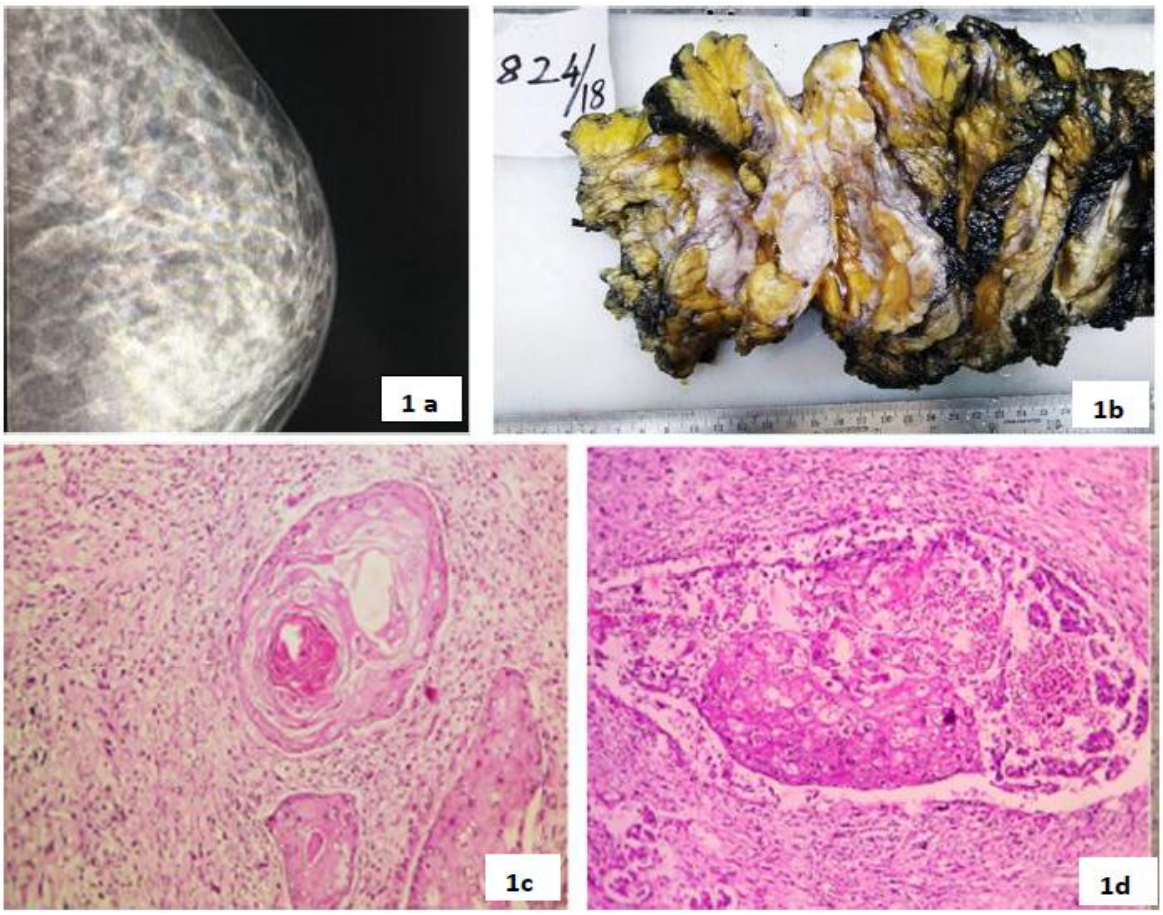
INTRODUCTION

Metaplastic carcinoma encompasses a rare and heterogenous group of neoplasms which is characterized by differentiation of the neoplastic epithelium into squamous and mesenchymal elements, including but not restricted to spindle, chondroid, osseous, and rhabdomyoid cells.[3] These neoplasms account for 0.2 to 5% of all the invasive breast cancers. Thus, we report two interesting cases of metaplastic carcinoma of breast, one revealing mixed epithelial and mesenchymal type and the other revealing mesenchymal differentiation-chondroid and osseous differentiation.

Case report

Case1

A 55-year-old female, presented with a firm, mobile lump of 3×2 cm in upper inner quadrant of left breast for 4 months. Ultrasonography revealed a solid cystic lesion BIRADS category V. Mammography revealed indistinct high-density lesion with a few internal microcalcifications. [Fig.1a] Gross examination of the mastectomy specimen [Fig. 1b] measured 15×17×4 cm. Cut section of the specimen revealed a well-circumscribed grey white growth measuring 3.5×3×3 cm. Ultrasound guided biopsy and histopathological examination revealed bizarre tumor cells arranged in sheets and nests infiltrating into stroma with less than 10% tubule formation. The individual tumor cells were pleomorphic hyperchromatic and had eosinophilic granular cytoplasm with prominent nucleoli . Areas with extensive squamous differentiation and necrosis seen. Section also shows moderately increased mitotic figures. IHC marker ER PR Her2neu are negative. [Fig.5]



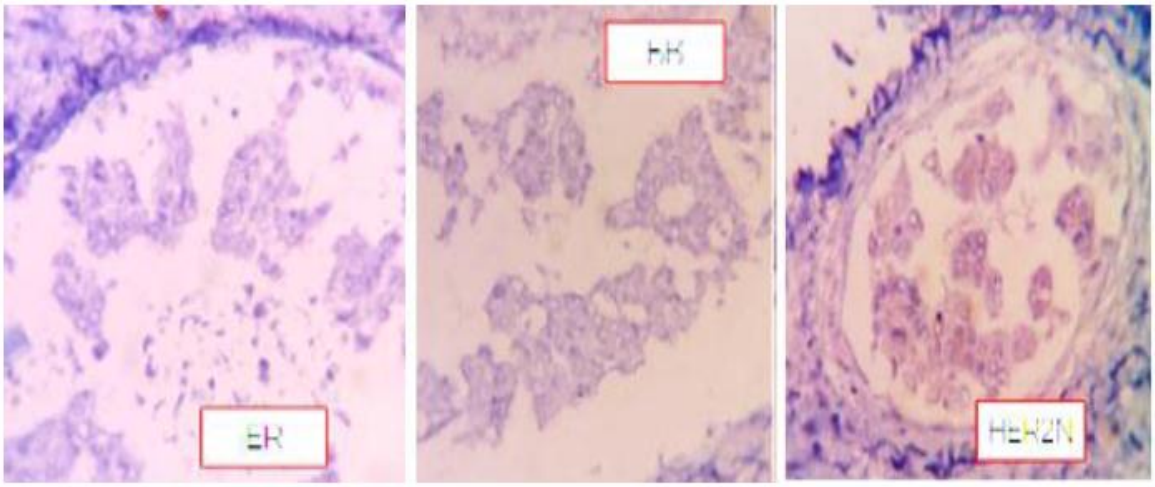
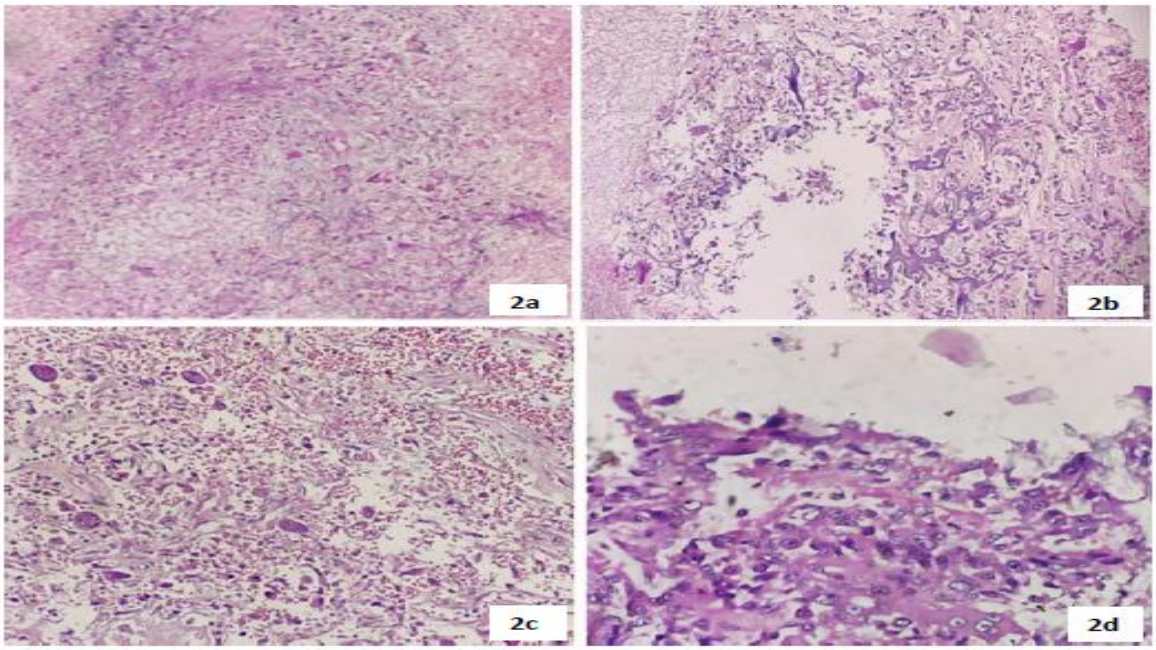


Fig. 1(a): Mammography showing microcalcification. Fig. 1(b): MRM gross with tumor in upper inner quadrant. Fig. 1(c): Squamous cell nests. Fig. 1(d): Glandular arrangement of tumor cells with squamous metaplasia. Fig. 1(e): ER PR and HER2NEU negative.

Case 2

A 57 year old female, presented with a lump measuring 3×3cm in the upper quadrant of the left breast for 3 months. An ultrasound guided biopsy revealed metaplastic breast carcinoma and underwent modified radical mastectomy. The mastectomy specimen of 12×10×3cm revealed a well circumscribed grey white growth. Microscopy showed mesenchymal differentiation -chondroid and osseous differentiation [Fig. 2b] with pathological grade pT4pN0. IHC marker ER, PR Her 2neu are negative. [Fig. 2e]



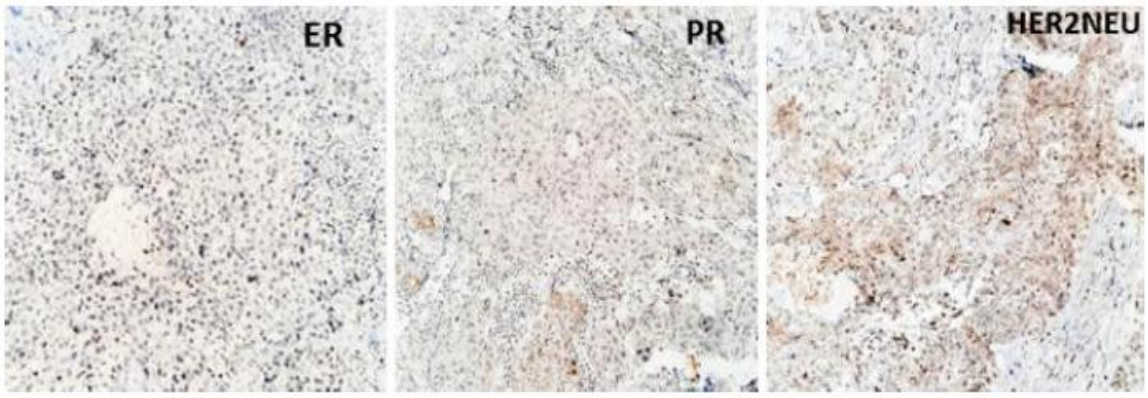


Fig. 2(a): Osseous differentiation in necrotic background, Fig. 2(b): Osseus differentiation, Fig. 2(c): Multinucleated giant cells, Fig. 2(d): Atypical pleomorphic and hyperchromatic cells, Fig. 2(e): ER PR and HER2NEU negative.

DISCUSSION

Metaplastic breast carcinomas are rare forms of invasive carcinomas of the breast. Grossly these tumors can either be well – circumscribed or can have indistinct borders.[1] Metaplastic carcinomas include low grade adenosquamous carcinoma, fibromatosis- like metaplastic carcinoma, squamous cell carcinoma, spindle cell carcinoma, carcinoma with mesenchymal differentiation (mixed metaplastic carcinoma).[3] These tumours are characterized by its triple negativity but they commonly reveal EGFR overexpression which can be used as therapeutic targets.[2] The differential diagnosis of metaplastic carcinoma depends upon the degree of atypia and includes fibromatosis, nodular fascitis, myofibroblastoma, pseudoangiomatous stromal hyperplasia, acute and chronic abscess with fat necrosis, malignant phyllodes tumour and primary or metastatic sarcoma.[2]

A study by Lim *et al*. compared the clinical features and prognosis of triple negative metaplastic carcinomas and non-triple negative metaplastic carcinomas and concluded that non-triple negative metaplastic carcinomas had a poorer prognosis compared to triple negative patients.[4]

Studies have shown that accurate diagnosis for Metaplastic breast carcinoma is very low. Li et al. and Zhang et al. reported that only 11.8% and 20% of the patients in their studies had an accurate diagnosis before mastectomy.

Bae *et al*. reviewed 47 metaplastic breast carcinoma and 1346 infiltrating duct carcinomas. They concluded that metaplastic carcinomas are more common in tumors with larger size,

lower lymph node involvement, higher histological and nuclear grade, high triple negativity, higher p53, CK 5/6 and EGFR expression, worse prognosis with a disease free survival rate being 78.1% in metaplastic breast carcinomas compared to 91% in infiltrating duct carcinomas.[5]

CONCLUSION

Metaplastic tumors are rare tumors but clinically more aggressive as compared to the other forms of triple negative breast cancers. The histopathological diagnosis of metaplastic carcinoma is highly essential as these tumours do not respond to trastuzumab which is normally given as a treatment modality in invasive breast carcinomas and these tumours require EGFR inhibitor therapy.

Conflict of interest

There is no conflict of interest.

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Nil.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published.

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