



CASE REPORT

METAPLASTIC CARCINOMA OF BREAST WITH CHONDROID DIFFERENTIATION: A RARE NEOPLASM

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Abstract

Metaplastic carcinoma of breast denotes a heterogeneous group of rare malignant tumors composed of mixture of both epithelial and mesenchymal elements. The mesenchymal component may show undifferentiated spindle cells, fibroblastic, osteoblastic or chondroid differentiation. Metaplastic carcinoma of breast accounts for less than 0.2% of all invasive breast carcinomas. It is an aggressive malignancy with poor prognosis. We present a case of 45yr old lady who underwent left mastectomy which on histopathological examination showed features of monophasic variant of metaplastic breast carcinoma with chondroid metaplasia. IHC was performed which confirmed the diagnosis.

KEY WORDS: Metaplastic breast carcinoma, monophasic variant, chondroid metaplasia.

INTRODUCTION

The term metaplastic carcinoma of breast was first introduced by Huvos et al [1]. These are uncommon type of mammary cancers and account for less than 0.2% of invasive carcinomas of the breast.^[2]

These biphasic tumours contain in addition to the epithelial component, sarcomatous component which may be composed of spindle cells, bizarre stromal giant cells, cartilage, bone and rarely skeletal muscle.^[3]

The monophasic variants of this tumour are composed of sarcomatous elements only. Grossly these tumors are well circumscribed or irregular masses and can reach large sizes. They can metastasise to any part of the body.

The monophasic spindle cell pattern of metaplastic carcinoma of breast may mimic other breast lesions including pure sarcomas, myoepithelial carcinoma, fibromatosis, nodular fasciitis and myofibroblastoma.^[4]

Since these tumors show cytokeratin positivity in both epithelial and mesenchymal elements, the term metaplastic carcinoma has been designated to them.^[5]



Metastasis to axillary lymph nodes has been shown to be less common as compared to typical adenocarcinoma of breast with incidence ranging from 6-26% ^[6]

The present case is reported for its rarity of multiple differentiation patterns into spindle cells myxoid and chondroid elements.

CASE REPORT:

A 40 year lady presented with a painful lump in the left breast of two years duration. There was no history of nipple discharge. No family history of breast cancer. On examination, a 6x5cms diffuse hard mass, with nodular surface was palpable in the upper outer quadrant of the left breast. Skin over the swelling showed ulceration. It was not fixed to underlying structures. No axillary lymph nodes were palpable.

FNAC was done which was suggestive of malignancy.

Trucut biopsy done from the tumor showed the presence of spindle cells with bizarre nuclei and atypical mitosis. No ducts were seen. A diagnosis of malignant mesenchymal tumor was considered.

Simple mastectomy with axillary clearance was done and specimen was sent for histopathological examination.

Gross examination of the mastectomy specimen which measured 17x8x5cms, on cut section showed an irregular grey white solid mass measuring 7x5cms, extending from the overlying skin up to 0.5cms from the posterior margin. Skin over the tumour showed ulceration.

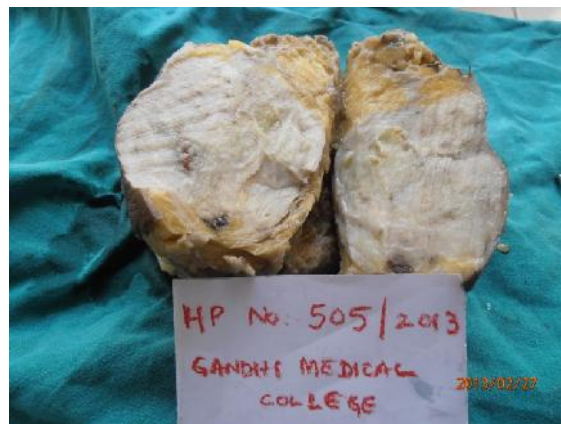


Figure 1 Gross photo of mastectomy specimen showing irregular grey white tumor.

Microscopic examination from the mass revealed an intraparenchymal tumour, which was highly cellular, predominantly composed of malignant spindle cells in sheets. These cells had moderate cytoplasm with pleomorphic hyperchromatic nuclei showing prominent nucleoli. Few scattered bizarre cells, multinucleated giant cells, areas of myxoid stroma and cartilaginous differentiation were observed. Peripheral fibro collagenous stroma showed lymphocytic infiltration.

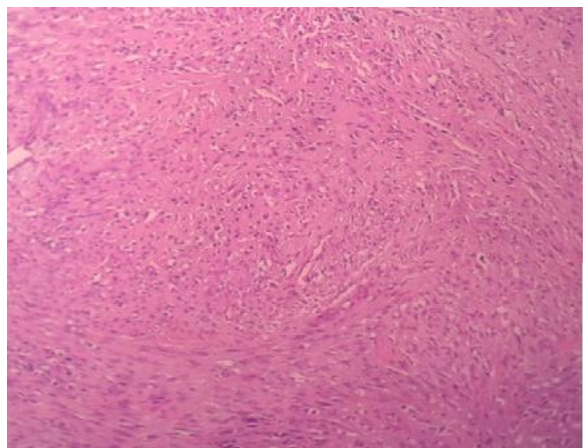


Figure 2 H&E stain(10x ,scanner view) showing tumor composed of mostly spindle cells

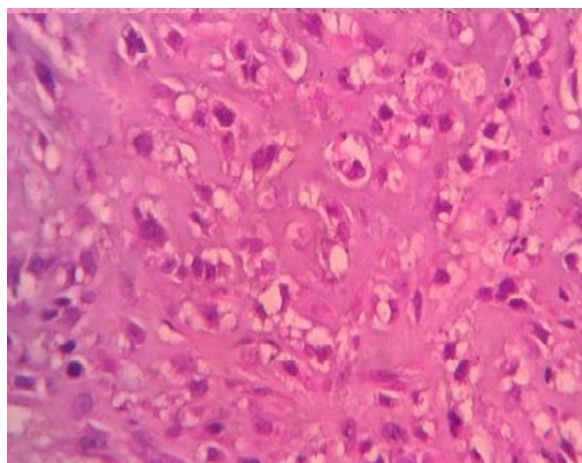


Figure 3 : H&E section(40x view) showing chondroid metaplasia

All the surgical resected margins were free from tumor infiltration.

Single Lymph node dissected showed features of reactive hyperplasia.

A provisional diagnosis of metaplastic carcinoma of breast was considered.

Panel of immune histochemical markers was done. Results are as follows

Cytokeratin- Focal positivity

Vimentin: Positive in spindle cells

S-100: Positive in chondroid areas.

ER/PR: Negative

Her-2neu: Negative

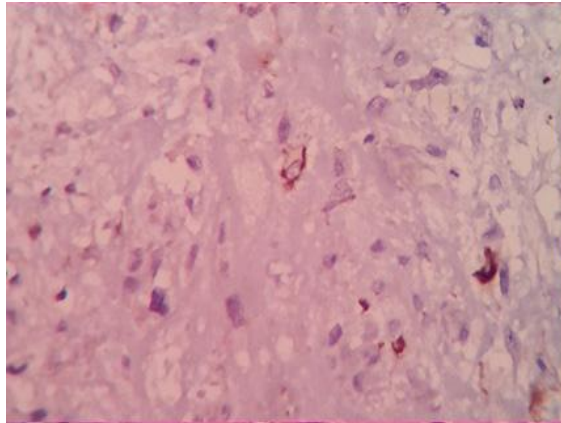


Figure 4: IHC-Cytokeratin stain(40x) showing focal positivity in tumor cells

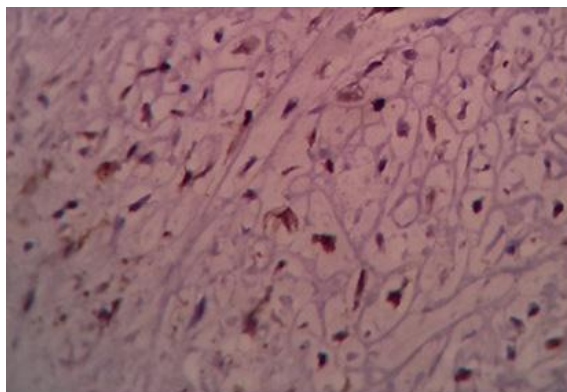


Figure 5: IHC-S-100 stain(40x) showing positivity in chondroid areas

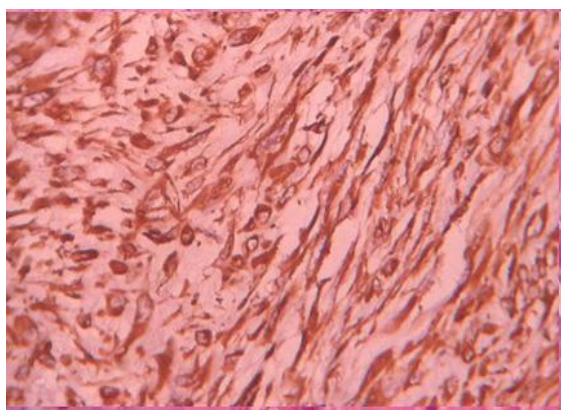


Figure 6: IHC-Vimentin stain(40x) showing positivity in the spindle cells.



A final diagnosis of monophasic variant of metaplastic breast carcinoma with predominant sarcomatoid component and focal chondroid differentiation was given.

DISCUSSION:

Metaplastic carcinoma of breast is a rare tumor composed of epithelial and non-epithelial elements consisting of spindle shaped stromal cell, bizarre stromal giant cells, cartilage, bone or rarely skeletal muscle.^[3]

In metaplastic carcinoma of breast, the cell of origin is thought to be epithelial in nature with sarcomatous component representing areas of differentiation or metaplasia. It has also been suggested that these lesions may arise from myoepithelial cells with divergent paths of tumor differentiation.^[7]

Most of these tumors present as large firm, nodular lesions measuring upto 5 cms in diameter. Fixation to overlying skin and deep fascia is common.^[2]

In the present case, the large size and skin ulceration could have been due to the two year long duration of tumor which indicates patient's negligence due to lack of awareness regarding the breast malignancy.

According to 2003 WHO Classification, MBC are divided into two groups:

1. Purely epithelial carcinomas and
2. Mixed epithelial-mesenchymal metaplastic carcinomas.

Pure epithelial carcinomas include squamous cell carcinomas, adenocarcinoma with spindle cell metaplasia, adenosquamous carcinoma and mucoepidermoid carcinomas.

Mixed epithelial-mesenchymal metaplastic carcinomas are defined as carcinomas with chondroid metaplasia, osseous metaplasia or matrix producing carcinomas.

The most common differential diagnosis to be considered in this case are nodular fasciitis, pleomorphic adenoma, fibromatosis, pure sarcomas, malignant phylloides, carcinoma with osteoclastic giant cells and myoepithelial carcinoma.

Nodular fasciitis and fibromatosis are rare lesions in the breast and are negative for keratin stains.

Unlike MBC, phylloides tumor stains negative for keratin and p-63.

Pleomorphic adenoma is also very rare and has benign epithelial component.

In carcinosarcomas, the mesenchymal components fail to react with any epithelial markers.^[8]

Myoepithelial carcinoma has ducts with prominent to hyperplastic cells at its periphery and is diffusely S-100 positive, unlike metaplastic carcinoma of breast

Metaplastic carcinoma of breast with chondroid differentiation is a distinctive form of carcinoma with a relatively favourable prognosis than other subtypes.^[9]

Axillary lymph node metastasis rate is reported as 19-25% and distant metastasis rate as 21% in MBC containing chondro-osseous elements.^[8]

Advanced stage and Lymph node involvement is associated with more aggressive course.

CONCLUSION:

Metaplastic carcinoma of breast-monophasic variant is a rare malignant tumors composed of mostly spindle cells component It is an aggressive malignancy with poor prognosis.

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