Scholars Journal of Medical Case Reports

OPEN ACCESS

Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

Metaplastic Carcinoma of Breast – A Rare Case Report

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DOI: 10.36347/sjmcr.2021.v09i02.003 | **Received:** 19.01.2021 | **Accepted:** 03.02.2021 | **Published:** 09.02.2021

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Abstract **Case Report**

Metaplastic carcinoma of breast (MCB) is a rare breast malignancy. It is important to differentiate metaplastic carcinoma from malignant phyllodes and primary breast sarcomas because of their differing biological behavior and prognosis. MCB is a rare heterogeneous tumor having areas of spindle, squamous, chondroid, or osseous elements in addition to the features of usual breast adenocarcinoma. Due to its heterogeneous nature, precise histological categorization has always been difficult, and these lesions have been given various confusing names.

Keywords: Aggressive, metaplastic carcinomas, triple-negative.

INTRODUCTION

Breast cancer is currently the most common malignancy seen in females worldwide. The most common histology is that of infiltrating ductal carcinoma (IDC). Metaplastic carcinomas of breast are uncommon tumors representing 0.3% of invasive carcinomas of breast. These tumors represent a heterogeneous group of malignant tumors in which part or all of the carcinomatous epithelium is transformed into a non-glandular (metaplastic) growth process [1]. Various types of metaplastic carcinomas have been reported like sarcomatoid carcinoma, spindle cell carcinoma, carcinoma with osteoclast like giant cells and squamous cell carcinoma. It is important to identify these tumors as they are triple-negative, have an aggressive behavior and are requires a change in the patient management.

CASE REPORT

A 47-year-old female patient who presented with a 7 × 6 cm sized well defined freely mobile lump in the upper outer quadrant of left breast. The patient underwent modified radical mastectomy. Grossly we recieved mastectomy specimen with axillary pad of fat measuring 30x30x11cm. External surface was ulcerated with fungating mass measuring 15.5x12cm. Multiple nodules noted on skin surface. External surface and cut section nipple no abnormality was detected.

Serial cut sections through breast reveal circumscribed grey white lesion measuring 20x17x10cm with friable areas in all quadrants. Cut section of skin nodules show tan white areas. Superior surgical resected margin measuring 2cm, inferior surgical resected margin measuring 3 cm, medial surgical resected margin measuring 2 cm, lateral surgical resected margin is 3cm, anterior surgical resected margin 1cm and posterior surgical margin measuring 3 cm from the lesion (Figure-1).

Seven lymphnodes were identified. Largest one measuring 1.5x0.7cm, smallest measuring 0.3cm. Also recieved another seperate container with multiple fibrofaytty tissue bits, altogether measuring 7x5x1cm. Nineteen lymphnodes were identified, largest one measuring 0.5cm, smallest one measuring 0.3cm.

Microscopy from the grey white area showed extensive necrosis and an invasive tumour composed of tumour cells arranged in fascicles, diffusely and as targetoid pattern around the blood vessels. The cells show round to oval to spindle shaped pleomorphic nuclei with clumped chromatin, 1-3 prominent nucleoli and moderate amount of cytoplasm. Mitotic activity is 12-14 mitotic figures /10HPF with presence of atypical mitotic figures. Some cells are polygonal in shape with centrally placed pleomorphic nuclei and moderate amount of cytoplasm (Figure 2 & 3). Surgical resected margins were free from tumour, nipple was not

involved, there is no perineural invasion and lymphovascular invasion.

Lymph node metastasis was absent, and microscopically it was diagnosed as Metaplastic carcinoma of Breast.

Fig-1: Gross photograph of Mastectomy specimen

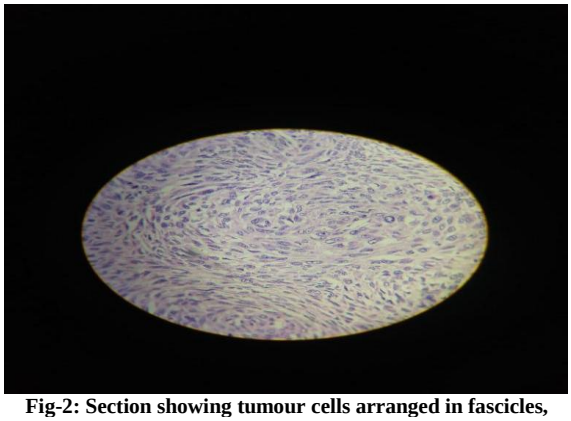

Fig-2: Section showing tumour cells arranged in fascicles, diffusely and as targetoid pattern around the blood vessels, with high degree of pleomorphism [H&E,x40]

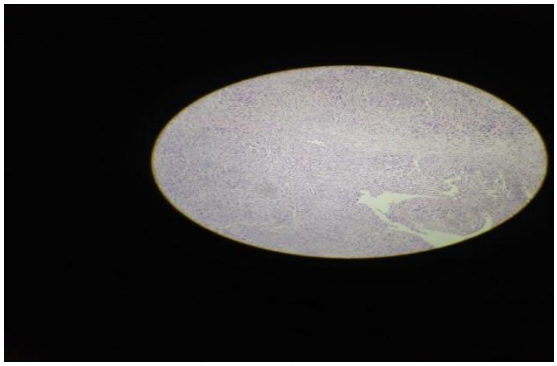

Fig-3: Section showing features of Metaplastic carcinoma [H&E, x10]

DISCUSSION

Metaplastic carcinomas are rare forms of invasive carcinomas of breast. Metaplastic carcinoma is a generic term for breast carcinoma of ductal type in which the predominant component of the neoplasm has an appearance other than glandular and epithelial and more in keeping with other cell type. It includes various categories like Sarcomatoid carcinoma, carcinosarcomas and matrix producing carcinomas, Spindle cell carcinomas, Carcinomas with osteoclast like giant cells, Squamous cell carcinoma, Melanocytic differentiation, Choriocarcinomatous features and Pleomorphic carcinomas [2].

The mean patient age for metaplastic carcinomas of breast is 47.6 years [3]. Grossly, these tumors form large, firm, nodules having a median size of 5 cm. Fixity to skin or deep fascia is not uncommon.

The differential diagnosis of metaplastic carcinomas depends on the degree of atypia observed in the tumor and includes exuberant scars, fibromatosis, nodular fasciitis, myofibroblastomas, pseudoangiomatous stromal hyperplasia, acute and chronic abscess with fat necrosis, malignant phyllodes tumor and primary or metastatic sarcoma [4].

Lymph node involvement is uncommon. Hematogenous spread is common explained by sarcomatous element, leading to metastasis to lung, liver, brain and bone.

When compared to triple-negative carcinomas, metaplastic carcinomas significantly more frequently expressed basal markers, such as CK14, CK17 and EGFR and over-express EGFR, vascular endothelial growth factor and caveolin-1, which can be used as therapeutic targets [5].

Metaplastic carcinomas of the breast are rare but aggressive tumors. Early diagnosis is essential because they are triple negative, but over-express EGFR requiring a change in the therapeutic regime.

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