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Metaplastic Carcinoma of Breast – A Rare Case Report

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ABSTRACT
Metaplastic breast carcinoma is a rare type of invasive breast carcinoma accounting 0.2% of all breast cancers. It possesses diagnostic challenge due to its varied histology and diverse differentiation. The prognosis is poor compared to more common types of breast cancer such as infiltrating ductal carcinoma. The present case is reported for its rarity.

Keywords: breast, infiltrating duct carcinoma, metaplastic carcinoma, prognosis.

INTRODUCTION

Metaplastic carcinoma is a generic term for breast carcinoma in which there is differentiation of the epithelial component into non-glandular elements. These include squamous differentiation and /or differentiation into mesenchymal elements.[1] Metaplastic carcinoma account for 0.2 to 5% of all invasive breast cancers. If tumours with mesenchymal metaplasia are considered , metaplastic breast cancers account for approximately 1% of invasive breast cancers.[2] It is usually seen in women over the age of 50 and they usually present with a large tumor size.[3]

Metaplastic Breast Cancer has been classified by the World Health Organization (WHO) in 2012 into 1) Low grade adenosquamous carcinoma 2) Fibromatosis-like metaplastic carcinoma

3) Squamous cell carcinoma 4) Spindle cell carcinoma 5) Metaplastic carcinoma with mesenchymal differentiation 6) Mixed metaplastic carcinoma

If the mesenchymal component accompanying the tumor is malignant, it is defined as

carcinosarcoma.[4] Carcinoma showing extensive metaplastic changes to spindle cells, squamous cells & heterologous mesenchymal elements are well recognized in the breast.

In most such tumor, areas of infiltrating ductal carcinoma can be demonstrated, frequently with trasition to metaplastic element.[5] The prognosis of metaplastic carcinoma is reported to be worse than breast adenocarcinoma.[6] The worse prognosis of Metaplastic breast carcinoma can not only be explained by greater size but also with histopathological heterogeneity, higher proliferation index and poorer differentiation.[7]Metastasis tend to occur via hematogenous spread rather than to lymph nodes.[1] We present this case due to its rarity with difficulty in diagnosis and subtyping.

CASE REPORT

A 55 year old postmenopausal female presented with a lump in the right breast with rapidly increase in size in last 2 months. On examination revealed a 7x4cm, painless, firm, irregular, ill-defined lump in the upper outer quadrant of the right breast. There was no skin involvement, nipple and areola was normal. The underlying muscles and chest wall was free. The other breast was normal. Ultrasonography revealed a large oval shaped 7x4cm size homogenous mass with few cystic spaces and central area of necrosis, reported as phylloid tumour. No evidence of metastasis in systemic radiological investigations. FNAC revealed mildly atypical, both plump and slender spindle cells, single and in loose tissue fragments with fibrous stroma and a few sheets of bland duct epithelium. A diagnosis in favor of phyllodes tumour was made. Subsequently patient underwent simple mastectomy.

Pathological findings

Gross examination : The mastectomy specimen measured 17x12x4 cm. On cut section there was an irregular, firm, solid gray white mass measuring 8x6x3.5 cms in upper outer quadrant of breast. Rest of the breast parenchyma was normal. 5 lymph nodes were dissected from the axillary tail.**(Figure 1)**

Microscopy : Multiple sections from tumor showed metaplastic carcinoma with mesenchymal differentiation. The tumour exhibiting biphasic lesion composed of spindle, plump cells in sheets, groups and trabeculae with hyperchromatic, plemorphic nuclei and increased mitotic activity. Also seen were areas of infiltrating ductal carcinoma. Immunohistochemistry for estrogen and progesterone receptors were found negative. No metastasis was seen in all the dissected lymphnodes. **(Figure2 and 3)**

DISCUSSION

The range of age at diagnosis and the clinical features of metaplastic mammary carcinoma are not generally appreciably different from those of invasive mammary carcinoma. The patient usually reports rapid growth and short duration prior to diagnosis.[8] Metaplastic Breast Cancer is usually detected in the 5th decades. Due to their propensity for rapid growth, they are generally large on admission.[9] Abbasi MA et al (2011) reported carcinosarcoma of breast in 36 years old female presented with rapidly growing right breast mass.[10].Yakan S.et al(2014) in his study of 10 cases reported 2 perimenopausal and 8 postmenopausal females with mean age of 59.7 years .[11] Muthusamy RK and Mehta SS (2016) reported two cases of metaplastic carcinoma breast in 58 year and 70 year old postmenopausal females.[12] Boler DE et al(2016) in his case series of metaplastic carcinoma reported median age of 51 years and palpable breast mass as a common presenting symptom. Median tumor size was 40 mm(35-85 mm).[13]

Turkan H et al(2016) reported metaplastic carcinoma in 74 year old female involving right breast with rapid increase in size. The tumour size was 9x8.5x4.5cm. Histopathology comprised of non invasive duct carcinoma with squamous cell carcinoma component.[3]

Metaplastic carcinomas comprises a heterogeneous group of tumour. Metaplastic carcinoma

the mesenchymal elements are often composed of an admixture of chondroid, osseous, rhabdomyoid and even neural differentiation. Carcinomatous areas can be in the form of glandular tubules, solid cluster and or foci of squamous differentiation .[2]

The most common combined configuration is development of undifferentiated spindle cell areas in adenocarcinoma.[8] Boler found squamous cell metaplasia as most common component. Metaplastic breast carcinoma rarely metastasize to axillary lymph nodes despite large size and are usually triple negative with high Ki-67 scores indicating aggressiveness and lack of response to hormonal therapy. [13] Distant metastasis occurs via the blood & lymphatic circulation It has lower incidence of lymph nodal metastasis than that of infiltrating duct carcinoma.[14] Distant metastases can be found in the absence of lymph node metastases, preferentially affect brain and lungs.[2] The optimal treatment strategies for metaplastic breast carcinoma are still debatable due to low incidence and pathological variability. Surgical treatment modalities have extended from mastectomy to breast conservation therapy. Adjuvant radiotherapy has shown long term survival benefit in these patients.[15]

CONCLUSION

Metaplastic carcinoma is a rare malignant tumor of breast, characterized by rapid growth, large tumour

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size at the presentation and lower rate of axillary nodal involvement. Metaplastic carcinoma comprise of a heterogeneous and histologically diverse group, Pathologic tissue diagnosis is essential to distinguish metaplastic carcinoma from other breast cancers in order to institute proper treatment. Prospective studies including more patients are required.

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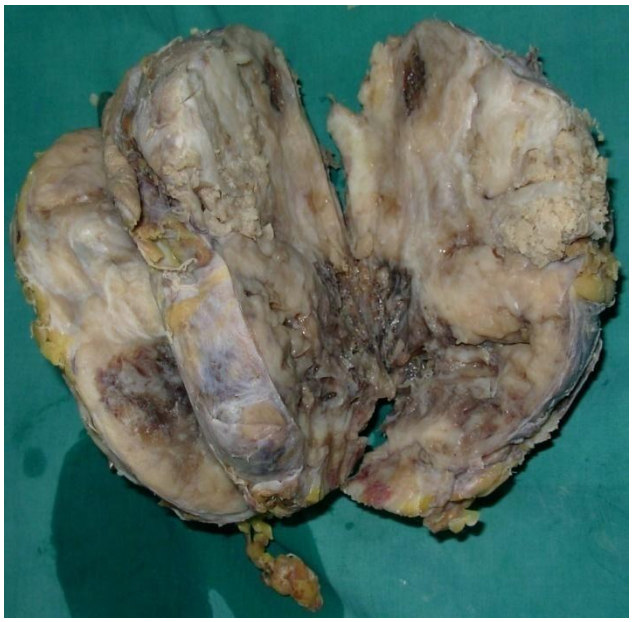

Figure 1: gross appearance, irregular solid grey white mass.

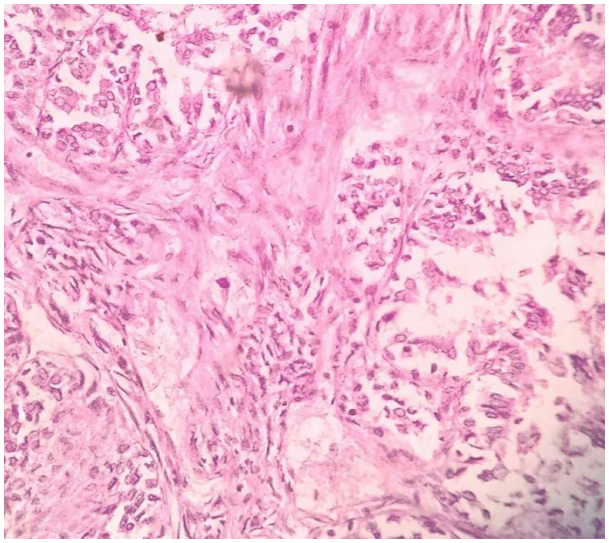

Figure 2: Photomicrograph showing a blending of the carcinoma and sarcoma-like components. (H&E,x40).

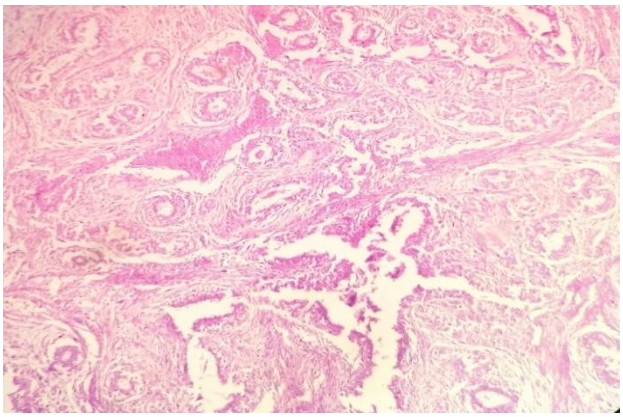

Figure 3: Photomicrograph showing areas of infiltrating duct carcinoma (H&E,x10).

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