Section: General Surgery

Case Report

METAPLASTIC CARCINOMA OF THE BREAST WITH MESENCHYMAL DIFFERENTIATION: A RARE CASE REPORT WITH REVIEW OF LITERATURE

V.S. Rathee[1], Anil Kumar[2], Amit Kumar[3], Sonal[4], Swati[5]

[1]Associate Professor, Department of General Surgery, Post graduate Institute of Medical Sciences, Rohtak, Haryana, India
[2]Junior Resident, Department of General Surgery, Post graduate Institute of Medical Sciences, Rohtak, Haryana, India
[3]Junior Resident, Department of Radiology, Post graduate Institute of Medical Sciences, Rohtak, Haryana, India
[4]Senior Resident, Department of Obstetrics & Gynaecology, Post graduate Institute of Medical Sciences, Rohtak, Haryana, India
[5]Senior Resident, Department of Pathology, Post graduate Institute of Medical Sciences, Rohtak, Haryana, India

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Corresponding Author:
Dr. V.S. Rathee,
Email: vs.rathee@gmail.com
ORCID: 0000-0002-3869-3119

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Abstract

Metaplastic carcinoma of the breast with mesenchymal differentiation (MCMD), previously known as carcinosarcoma, is a very rare and aggressive tumor that has been recently classified as a subtype of metaplastic breast carcinoma. It accounts for 0.08%-0.2% of all breast cancers, with only a few cases reported in the literature. Here We are reporting a case of 56 year old female with large hard lump in her right breast, having no H/o of breast cancer in her first degree relative .Symptoms had been present for 6 months .After admission to hospital ,following physical assessment ,USG ,mammography , trucut biopsy immunohistochemistry ,diagnosis was made towards metaplastic carcinoma with mesenchymal differentiation .2 out of 11 axillary lymph nodes were positive for metastasis . The optimal treatment modality for metaplastic carcinoma are not established because of its rarity and heterogeneity. Modified radical mastectomy is the preferred surgical procedure as a large tumor size is a contraindication for breast-conserving surgery .Patient with such growth of breast mass should be evaluated keeping in mind of metaplastic carcinomas.

INTRODUCTION

Metaplastic carcinoma of the breast with mesenchymal differentiation (MCMD), previously known as carcinosarcoma, is a very rare and aggressive tumor that has been recently classified as a subtype of metaplastic breast carcinoma. It accounts for 0.08%-0.2% of all breast cancers, with only a few cases reported in the literature. Histologically, MCMD is characterized by a biphasic pattern of malignant epithelial and sarcomatous components without evidence of a transition zone between the two elements.[1] We herein describe a rare case of 56 year lady with metaplastic breast carcinoma with mesenchymal differentiation.

CASE PRESENTATION

We report a case of 56-year-old lady presented to our OPD with hard lump in her right breast. She has no H/o of breast cancer in her first degree relative. She had a history of painful lump in her right breast for last 6 months, which gradually increased in size.

On initial physical examination in opd revealed a hard lump measuring 8 X 8 cm, tenderness over lump present, mobile, not fixed to chest wall. No palpable ipsilateral and contralateral axillary & supraclavicular lymph modes.

Ultrasonography described it as a large hypoechoic lesion with irregular margin having size 6.5 X 5.6 cm, involving all quadrants of breast with increased blood flow on color doopler (BIRADS-4). No enlarged lymph nodes seen on USG.

On Mammography It was Hypoechoic lesion having size 6 X 6.5 cm with spiculated margin having score (BIRADS-4).

Trucut biopsy from lump revealed predominately atypical cells present in groups as well as scattered slightly admixed with numorousstromal fragments, These atypical cells are round to oval to spindle in shape having central to eccentric placed nuclei with nucleoli in many and variable amount of

cytoplasm which is bipolar at the places and is vacuolated in some and epsinophic granules in others. Mitotic figures are also seen. Found positive for maligancy (possibility includes metaplastic carcinoma).

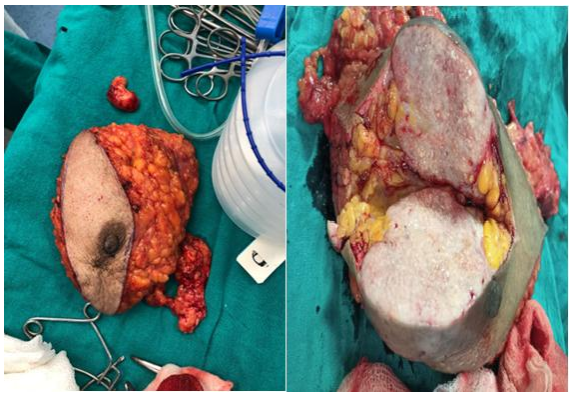

Figure 1: Excised right breast lump following MRM.

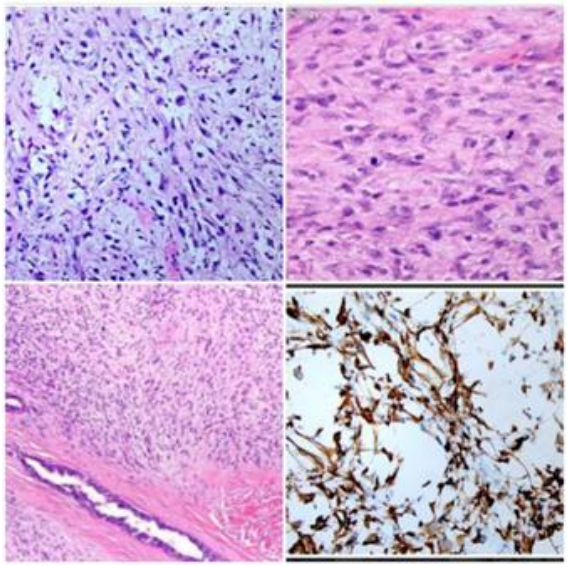

Figure 2: Cut section of breast lump following MRM.

MRM was planned in view of metaplastic carcinoma and done and specimen sent for HPE. Procedure was performed by author and his team. Post operative period was uneventhful.

Histopathology report of specimen showed on glossly examination it was right sided mastectomy specimen measuring 22X15X4 cm in size with attached skin flap 18X7 cm.

On microscopic examination showed metaplastic carcinoma with mesenchymal differentiation. 11 lymph nodes isolated, out of which 2 showed tumour in filteration.

IHC analysis showed a strong and diffuse positive reaction for vimentin and cytokeratin (CK), negative for BCL-2 and CD -34.

DISCUSSION

Carcinosarcoma is an extremely rare neoplasm that occasionally occurs in organs like the ovaryor uterus. The neoplasm is characterized by a biphasic pattern (carcinomatous andmesenchymal) without a transition zone in between.[2]

The WHO Classification of Tumors of the Breast, 4th edition classifiesmetaplastic tumors into Metaplastic carcinoma of no special type, Low-grade adenosquamous carcinoma, Fibromatosis- like metaplastic carcinoma, Squamous cell carcinoma, Spindle cell carcinoma, Metaplastic carcinoma with mesenchymal (chondroid, osseous) differentiation, Other types of mesenchymal differentia- tion (Mixed), Myoepithelial carcinoma.[3] Metaplastic carcinomas may be either low-grade tumors (e.g. adenosquamous carcinoma or spindle cell carcinoma), or high-grade tumors (e.g. squamous cell carcinoma, or spindle cell carcinoma).[3] Its presentation is similar to other breast cancer clinically as well as radiologically. Carter et al. reported age of presentation of tumor from 40 to 96 years with median of 68 years while it was reported mtobe 22 e 91 years by Luini.[4,5] Tumor size ranged from 1.5 to15cm with median of 4 cm in a series of 29 cases.[4] The reported incidence of axillary lymph node metastasis at diagnosis was 5%e 56%.[4,6,7] Most common sites of distant metastasis are lung and bone.[4] These variations in the lymph node metastasis can bedue to extent of the epithelial component and differentiation in the primary tumor.[8,9] In primary breast sarcoma, lymph node metastasis is rare.

Immunohistochemistry (IHC)

IHC plays a crucial role in the establishing accurate diagnosis of metaplastic carcinoma. It usually stains positive for Vimentin' and cytokeratin and negative for ER/PR, HER2/Neu as similarly observed in the present case.[4,5,6,9]

Treatment modality

The optimal treatment modality for metaplastic carcinoma are not established because of its rarity and heterogeneity.[10] Modified radical mastectomy is the preferred surgical procedure as a large tumor size is a contraindication for breast-conserving surgery. Carcinosarcomas are poorly differentiated aggressive neoplasms that often tend to be triple-negative (ER, PR, and HER-2/neu). Adjuvant chemoradio therapy is necessary for loco regional control. Hormonal therapy is ineffective as these tumors are usually triple negative. Anthracycline-based chemotherapy is more effective than cyclophosphamide methotrexate fluorouracil regimen.[11,12] Adjuvant radiotherapy hasbeen shown to decrease the risk of death by 33% in mastectomy patients.[13] Over expression of Her1/epidermal growth factor receptor (EGFR) suggests that agents like gefitinib andcetuximab, which target the EGFR, may play a role in the treatment of metaplastic carcinoma.[14,15]

Year survival

The reported cumulative 5-year survival rate for, Carcinosarcoma is 49%.[16] Metaplastic carcinomas have a worsedisease-free and overall survival when compared with adenocar- cinoma.[5]

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Prognostic factors for survival

In a study, Chao et al. concluded that duration of symptoms, TNM stage, tumor size, and axillary nodal status were significant prognostic factors of survival.[1,7] Disease free survival and overall survival is less in metaplastic carcinoma as compared to invasive ductal carcinoma of the breast and other forms of triple-negative breast cancers.[18,19,20,21]

CONCLUSION

Our present knowledge of MBC is limited. The rarity and the heterogeneity of MBC in biological and morphological features as well as different classification and treatment strategies in the literature have foiled the attempts to retain satisfying data and evidence to establish a solid treatment strategy in this unwonted breast neoplasm. Although promising results in small and selected group of patients who were treated according to cancer stem cell characteristics are encouraging, more effort should be exerted to find potential molecular targets and more trials should be conducted to pass beyond small series and to test the efficiency of targeted therapies.

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