MEDWIN PUBLISHERS
Committed to Create Value for Researchers

International Journal of Transplantation & Plastic Surgery
ISSN: 2639-2127

# A Recurrent Breast Carcinosarcoma in a Young Woman, a Case Study

**Share MA[1], Khalaileh MA[1], Awabdeh MA[1], Asbahi HA[1] and Jeyyab MA[2]***

[1]General Surgery Department, AL-Basheer Hospital, Jordan
[2]Mutah university, Jordan

***Corresponding author:** Mohammad Abu-Jeyyab, School of Medicine, Mutah University, Al-Karak, Jordan, Email: mabujeyyab@yahoo.com

**Case report**
**Volume 6 Issue 2**
**Received Date:** July 15, 2022
**Published Date:** September 01, 2022
DOI: 10.23880/ijtps-16000168

## Abstract

Carcinosarcoma is a biphasic tumor comprised of both malignant epithelium and malignant stroma. Compared to other types of breast cancer, this subtype is clinically aggressive and has a poor prognosis. Luckily, it is extremely rare. Carcinosarcomas of the breast presents a challenge, both diagnostically and therapeutically, due to the lack of systemic guidelines in management. Here, we present a case of a 37- year-old woman affected by carcinosarcoma of the right breast. We discuss the clinical presentation, the histopathology findings, and the imaging characteristics of the tumor, the diagnostic approach, and the treatment plan, as well as a short literature review.

**Keywords:** Carcinosarcoma; Tumour; Old Woman; Treatment

**Abbreviations:** MPC: Metaplastic Breast Carcinoma; MBC: Metaplastic Breast Cancers; TNBC: Triple-Negative Breast Cancer; ER: Estrogen Receptor; PR: Progesterone Receptor; HER2: Human Epidermal Growth Factor 2 Receptor.

## Introduction

Breast carinosarcomas or metaplastic breast carcinoma (MPC) are tumors that have an origin of both myofibroblastic connective tissue and epithelial cells. The clinical picture of the MPC is an aggressive breast neoplasm. It is thought that most of MPCs are triple negative cancers which means that there is no expression of the estrogen or progesterone receptors and HER-2/neu oncogene. The most acceptable theory of the aggressiveness is due to the poor differentiation and the triple negative receptors assay [1]. Here in, the discussed case is a 37 years old female patient that was diagnosed to have a breast MPC after the triple assessment approach and treated by the decision of the multidisciplinary team meeting according to the new 2018 NICE guidelines [2].

## Case Presentation

In November 2021, a 37-year-old female presented to the emergency department with a rapidly growing breast lump. She was married with 3 children. The patient is a known case of treated metaplastic breast cancer with a Previous Modified radical mastectomy. Menarche was at 13 years of age. There was no family history of breast cancer. She hadn't taken any hormonal therapy. Three months earlier, she noted a breast which rapidly grew in size. It became an ulcerated lesion within two weeks. She had no unexplained weight loss or bone pain. Physical examination revealed a non-tender fungating mass in the right upper quadrant measuring about 14*17 cm, with overlaying redness and skin nodules. An ulcer with a base of necrotic tissue was noted. The mass was associated with hard axillary lymphadenopathy.

## Imaging and Staging

In the process of diagnosis of this patient several imaging, pathological and laboratory tests were performed initially a

Mammogram study showed the presence of a big right breast mass occupying most of right with intra mass scattered calcification. Additionally, Ultrasound imaging showed huge mixed solid and cystic mass occupying most of the right breast with internal color flow and surrounding sub-areolar stellate masses, giving a BIRADS Score of 5. Furthermore, Sonography reveals there are right axillary lymph nodes with thickened cortices and compressed fatty hilum and right axillary lymph node with thickened cortex and preserved fatty hilum. All these findings were followed by a true cut biopsy procedure for histo-pathological confirmation of the suspected diagnosis. The biopsy study states that there is high grade sarcomatoid like tumor infiltration with ductal carcinoma representing the histological findings of metaplastic carcinoma. At this stage, it was crucial to go through the staging process Chest, abdomen and pelvis CT scan and nuclear bone scanning were performed with no distant metastatic lesions.

## Laboratory Findings

All laboratory values of the patient including full blood count, kidney function test and liver function tests were within the normal range.

## Treatment Plan

The patient underwent right Modified Radical Mastectomy (MRM), and achieved a good negative margins, the nearest one is 1mm (the posterior margin) T4N2M0. Three weeks later, the patient was referred to the oncology department to start up an adjuvant chemotherapy plan. During the chemotherapy phase (in March 2022), the studied subject developed a lump near the mastectomy scar. After the triple assessment of the newly discovered mass, the result revealed a recurrence of the metaplastic breast cancer. The new staging process was done (CT chest, abdomen and pelvis and a bone scan), showed liver and bone metastasis. The multidisciplinary team decision was to proceed chemotherapy as a palliative mode treatment.

## Discussion

Breast Carcinosarcoma is categorized as a rare heterogenous neoplasm which has been observed in various human body organs including breast, ovary, and uterus [1,3]. Metaplastic breast cancers (MPC) accounts for 0.08–0.2% of all breast malignancies. According to the SEER database, USA reported fewer than 10,000 MPC cases annually between 1973 and 2015 [4]. Identifying the clinical and pathological characteristics of the mass is crucial for differentiating MPC from other breast neoplasm types, particularly the rare types. Histopathology shows that these tumors contain malignant fibroblastic and epithelial cellular components [4]. As there are various theories that could state the origin of this type of breast cancer, there is controversy about the origin of carcinosarcomas. Collision theory, combination theory and the conversion/metaplastic theory were introduced. According to the collision theory, sarcomatous and carcinomatous cells originate from different progenitor cells. However, the monoclonal combination theory predicts that both sarcomatous and carcinomatous cells were generated by common multipotent cells. On the other hand, the conversion/metaplastic theory suggests that the sarcomatous portion was generated from carcinomatous particles through a metaplastic process. According to reported data supporting the conversion/metaplastic theory, the tumor's mesenchymal and epithelial components both have cytokeratin expression [5]. According to some recent studies, these tumors originate from a single stem cell that develops into myoepithelial cells with a biphasic differentiation [1], as this entity expresses myoepithelial markers CD10, p63, and actin [4].

The WHO classifies breast carcinosarcomas as mixed metaplastic carcinoma, low-grade adenosquamous carcinoma, fibromatosis-like, squamous cell carcinoma, spindle cell carcinoma, and metaplastic carcinoma with mesenchymal differentiation [4]. Wargotz used a different subtype categorization that divided MPCs into five main groups; (carcinosarcoma, matrix- producing carcinoma, spindle-cell carcinoma, squamous cell carcinoma and osteoclastic giant cell carcinoma) [6]. Most of MPC cases are diagnosed in the fifth decade. The SEER database's clinical reports from January 1998 to December 2016 reported that the majority (81.2%) of MPC individuals were over the age of 50 [6]. But according to retrospective research conducted in a hospital in Ankara, the median age was 45.5 years [7]. A well-defined, nodular, firm, concrete breast lump was the typical clinical presentation of metaplastic breast cancer. However, some patients may present with more benign-like clinical features such as well-defined circular-shaped regular lump which resembles the clinical picture of fibro-adenomas and misdiagnosis may occur [3]. Our patient presented with a non-tender fungating mass with overlaying redness and skin nodules, that later became ulcerated, which differs from the typical clinical picture as previously reported. [3].

There are many diagnostic tools that can be used in the Breast cancer diagnosis. These include the triple assessment; (clinical, radiological, and histopathological modalities). Moreover, the imaging modalities are Ultrasonography, Mammography, magnetic resonance imaging. Mammography is frequently employed as a breast imaging techniques. Yet, all these techniques are suboptimal when it comes to diagnosing MPC. The pre-surgical diagnosis of breast tumors can be obtained by fine needle biopsy and/or core biopsy. Despite these tools being cheap and easy, it can be challenging due to they lack the specificity and sensitivity

[8]. The most accurate by far is the frozen section is, with a sensitivity and specificity percentage of more than 90% and 99%, respectively [8]. Conversely, in breast MPC, there may be some limitations to frozen section diagnosis. On the histopathological and hormonal tests, MPCs considered triple-negative breast cancer (TNBC). To sum up, they don't the express of estrogen receptor (ER), progesterone receptor (PR), or human epidermal growth factor 2 receptor (HER2) [4]. This is applicable in our case as it has negative response to receptors (TNBC). Hence, we believe there is an essential need to dig more into this triple-negative feature of MPC.

Additionally, Carcinosarcoma of the breast has worse has a poorer prognosis than to non-metaplastic triple negative breast carcinomas. Though MPC has similar clinical picture to the invasive ductal carcinoma [1]; Metaplastic carcinomas present with huge tumors, high histological grade, heterogeneity, overexpression of p53 and Ki-67, as well as the metastases occurs via through blood vessels; hematological dissemination [4,9]. As a result, it is far more aggressive than invasive ductal carcinoma, even when matched for age, stage, and tumor grade [4]. In which patients with MPC already have advanced disease at the time of diagnosis with metastases most commonly to pleura and lungs then metastases to bone and liver are followed [3],[4]. The size of the tumor is a distinct risk factor for recurrence. Triple negative hormone profile and a poorly differentiated tumor, as found in our instance, are also risk factors for recurrence[10].

When compared to the triple negative breast neoplasms whether lobular or ductal types, metaplastic carcinomas present with more advanced aggressive disease on a local basis. Because there is no standard protocol for the treatment of such a rare cancer type, MPC treatment plan follows the same treatment guidelines as TNBC [1]. According to some recorded cases of young patients, surgery could be an option for treatment [8]. MPC has a poor response to neoadjuvant therapy, more chemo-refractory than TNBC, and poor clinical side effect [4]. So Systemic chemotherapy is considered a bad option for treatment. Furthermore, these patients have a higher risk of recurrence, a short disease-free period, and a less overall survival time [4].

## Conclusion

To conclude up, metaplastic breast carcinoma is a rare entity of breast neoplasms that should be looked into and studied more deeply, in order to set the optimum base of information for future research. More focus should be spent on the information about the epidemiological distribution, the diagnostic modalities, the treatment approaches and the prognostic criteria. In hopes of providing better future for these patients.

## References

1. Esses KM, Hagmaier RM, Blanchard SA, Lazarchick JJ, Riker AI (2009) Carcinosarcoma of the breast: two case reports and review of the literature. Cases Journal 2(1): 1-5.

2. NICE (2018) Early and locally advanced breast cancer: diagnosis and management.

3. Kanaizumi H, Higashi C, Tanaka Y, Hamada M, Shinzaki W, et al. (2019) Carcinosarcoma of the breast: A case of breast conservation surgery and breast reconstruction. SAGE Open Med Case Rep 7: 1-5.

4. Reddy TP, Rosato RR, Li X, Moulder S, Worms HP, et al. (2020) A comprehensive overview of metaplastic breast cancer: clinical features and molecular aberrations. Breast Cancer Res 22: 121.

5. Mohammad AS, Asbahi HA, Awabdeh MA, Khalaileh MA, Jeyyab MA (2022) Metaplastic Carcinoma of the Breast: A Case Study. Clinical Surgery Journal 5(2): 51-55.

6. Cai W, Zhuang Y, Chen J, Wang H (2021) Effect of postmastectomy radiotherapy on survival outcomes of patients with metaplastic breast cancer. Nan Fang Yi Ke Da Xue Bao 41(11): 1733-1740.

7. Esbah O, Turkoz FP, Turker I, Durnali A, Ekinci AS, et al. (2012) Metaplastic breast carcinoma: case series and review of the literature. Asian Pac J Cancer Prev 13(9): 4645-4649.

8. Tian W, Xu D (2012) Diagnosis and Management of Multiple Carcinosarcoma of the Breast in a Young Chinese Patient. Breast Care (Basel) 7(2): 147-149.

9. Kennedy WR, Gabani P, Acharya S, Thomas MA, Zoberi I (2019) Clinical outcomes, and patterns of care in the treatment of carcinosarcoma of the breast. Cancer Med 8(4): 1379-1388.

10. Bhasin PG, Desai GR (2020) Metaplastic Breast Cancer: A retrospective analysis over 14 years. Journal of Clinical Oncology 38(S15).