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Review Paper

# Metaplastic Carcinoma: Case Study and Literature Review

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**ABSTRACT**:
Metaplastic carcinoma, also known as breast carcinosarcoma, is a rare and aggressive tumor characterized by the presence of both epithelial and mesenchymal components. This article presents two cases of breast carcinosarcoma and provides a review of the literature, examining the radiological, clinical, histopathological, and therapeutic characteristics, which differ from those of the usual form of breast cancer.

***Keywords: Breast carcinosarcoma, metaplastic sarcoma of the breast, biopsy, mammography, ultrasound, breast MRI.***

## INTRODUCTION:

Breast carcinosarcoma, also known as metaplastic sarcoma of the breast, accounts for less than 1% of all breast cancers. Its rarity and the mixed nature of its components make its diagnosis and management particularly complex. We discuss here an illustrative clinical case accompanied by a literature review to highlight this pathology with an unfavorable prognosis.

## CASE OBSERVATION 1:

Mrs. B.N, a 55-year-old postmenopausal woman with no particular personal or family history of breast or ovarian cancer and no history of hormone replacement therapy, consulted following self-palpation of a right breast mass. Clinical examination found an enlarged, red, and hot right breast with an orange peel appearance. Palpation revealed a central mass extending to the inner quadrant, measuring 12 cm/12 cm, poorly defined, hard, fixed, and painful, associated with inflammatory signs such as an erythematous plaque and orange peel skin without nipple discharge (Figure 1).

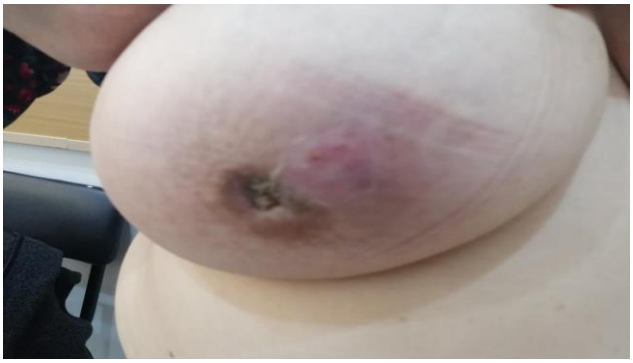

**Figure 1.Central right breast mass with inflammatory phenomenon and skin ulceration.**

Axillary and supraclavicular lymph node areas were negative. The stage was T4dN0M0. Mammography found a mass in the upper-inner quadrant, roughly oval-shaped with irregular contours without microcalcification foci (Figure 2).

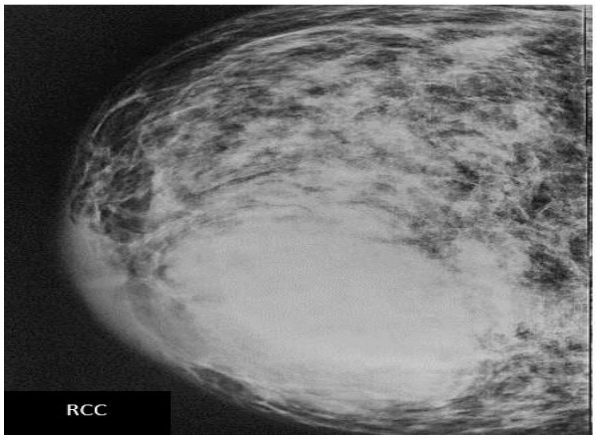


**Figure 2: Mammographic appearance of the central mass in the right breast, lobulated in shape.**

Breast ultrasound showed the mass to be irregularly shaped, with microlobulated contours, heterogeneous solid and cystic (Figures 3 and 4), and vascularized on color Doppler.

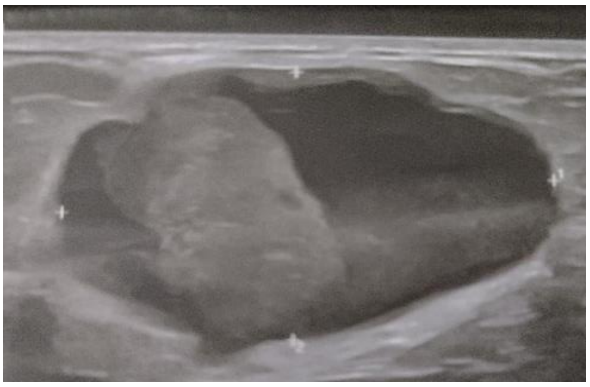

**Figure 3: Breast ultrasound. Mass with irregular shape, microlobulated heterogeneous contours, both solid and cystic.**

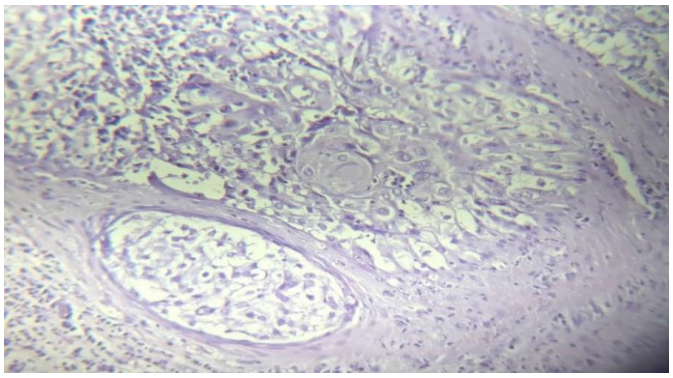

**Figure 4. Metaplastic squamous cell carcinoma. HXE10.ì:squamous metaplasia with dyskeratotic cells .**

This echomammographic appearance is classified as BI-RADS 5 by the ACR. Microbiopsies revealed an invasive ductal carcinoma, grade III, triple-negative, KI 67/60%. The extension assessment, including a thoraco-abdomino-pelvic CT scan, revealed 04 hepatic micronodules, one of which is cystic + hepatohilar lymphadenopathy 45x25 mm. An abdominal MRI also requested confirmed the absence of hepatic localization but showed hepatohilar lymphadenopathy masses (52x34 mm); bone scintigraphy was normal. The stage was T4dN0M1 Pev2. The patient was put on chemotherapy followed by radical surgery. L'histologie a conclu à une prolifération tumorale maligne metaplasique detype epidermoide . Il n'était pas vu de composante canalaire in situ ou d'emboles vasculaires, ni d'envahissement cutané. The resection boundaries were sound. Absence of lymph node metastases (0N+/20N). Progesterone and estrogen hormone receptors as well as the Hercept test were negative. Tumor cells expressed pankeratin AE1/3 and did not express CD34, P100, AML, and Desmin (Figure 4). The diagnosis was triple-negative primary invasive carcinosarcoma of the breast. The patient was referred for initial chemotherapy, and faced with the

progression of the disease. Cleanliness surgery was performed with radiotherapy.

## DISCUSSION:

Breast carcinosarcoma is a complex malignant tumor composed of epithelial tissue (carcinoma) and malignant cells of mesenchymal origin (sarcoma). The term sarcomatoid metaplastic carcinoma is often used to describe this rare entity[1,2]. According to the World Health Organization (WHO) classification of 2002-2003, carcinosarcoma falls within the group of metaplastic carcinomas[1]. This tumor is distinguished by its size, usually between 3 and 18 cm, and by a growth rate faster than that of other classic infiltrating carcinomas[3,4]. Macroscopically, it presents a larger size than that of infiltrating ductal carcinoma. The majority of carcinosarcomas are negative for estrogen and progesterone receptors, as well as for HER2-neu[5]. Histopathologically, carcinosarcoma can be confused with high-grade phyllodes tumors due to malignant transformation of the epithelial component. This distinction is important for therapeutic and prognostic management[6]. The mammographic appearance is nonspecific. It most often presents as a poorly defined mass with irregular, sometimes spiculated, contours. Microcalcifications are rare. Ultrasound is more sensitive, showing the heterogeneous nature of the lesion, alternating between solid and cystic areas[7]. The treatment of breast carcinosarcoma follows the same principles as for other types of breast cancers, including mastectomy with or without axillary clearance. Wargotz and Norris reported a lymph node invasion rate of 26%, highlighting the importance of axillary clearance[8]. Standard chemotherapy is unsatisfactory, as chemoresistance is common[9]. Hormonotherapy usually has no role due to the typical absence of hormone receptor expression. Herceptin cannot be introduced in most cases, as the Herceptest is often negative. Post-treatment monitoring is essential to detect any early recurrence, given the high risk of metastasis associated with this type of cancer[10].

## CONCLUSION:

Breast carcinosarcoma remains a challenge in breast imaging due to its rarity, appearance, and the diverse mammographic and sonographic semiology. The case presented underscores the importance of early diagnosis and an adapted therapeutic strategy.

**Conflicts of Interest**: The authors declare no conflicts of interest.

**Author Contributions**: All authors contributed to this work.

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