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Carcinoma en Cuirasse Following Bilateral Mastectomy for Breast Cancer: A Case Report

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Abstract

Background: Carcinoma en cuirasse (CeC) is a rare and aggressive form of cutaneous metastasis, typically associated with advanced breast cancer. It usually occurs late in the disease course but can occasionally present at onset.

Case Presentation: We describe a 38-year-old African woman with a history of synchronous bilateral invasive ductal carcinoma, treated with neoadjuvant chemotherapy and bilateral radical mastectomy. Two years later, she presented with diffuse thoracic skin lesions, consistent with CeC, and concurrent pleuropulmonary and skeletal metastases. Despite recommendation for systemic chemotherapy, the patient declined treatment and died three months later.

Conclusion: CeC remains a rare but ominous manifestation of metastatic breast cancer, indicating advanced disease and poor prognosis. Early recognition and multidisciplinary management may improve survival outcomes in resource-limited settings.

Keywords: Breast; Cancer; Metastasis; Mastectomy

Introduction

Carcinoma en cuirasse (CeC) is a rare and aggressive variant of cutaneous metastasis, most commonly associated with advanced breast cancer. First described by Velpeau in 1838, CeC presents as diffuse, indurated, and sclerodermiform plaques resembling an armor-like shell, primarily affecting the chest wall. Its incidence among patients with breast cancer and cutaneous metastases remains low, estimated at approximately 3% [1,2].

CeC typically emerges as a late manifestation of recurrent breast carcinoma, though rare cases have been reported as the initial presentation [3,4]. The pathophysiology remains poorly understood, but its development is believed to reflect widespread dermal lymphatic infiltration by malignant cells, resulting in characteristic clinical findings.

In resource-limited settings, the diagnosis and management of CeC are particularly challenging due to limited access to histopathological analysis, targeted therapies, and follow-up infrastructure. Here, we present a rare case of CeC occurring two years after bilateral radical mastectomy for synchronous bilateral breast cancer in a young woman from Côte d'Ivoire. This report aims to present anusual clinical features, after a bilateral mastectomy.

Case Presentation

A 38-year-old African woman from Abidjan, Côte d'Ivoire, presented with progressive dyspnea, fatigue, and painful thoracic skin changes. She was HIV-negative, nulliparous, unemployed, and had no family history of malignancy. Three years earlier, she had been diagnosed with stage III synchronous bilateral invasive ductal carcinoma of the breasts. Initial management included eight cycles of neoadjuvant chemotherapy (four cycles of FAC followed by four of docetaxel), followed by bilateral radical mastectomy.

Due to financial limitations and the unavailability of radiotherapy at the time, adjuvant treatment was not administered. Postoperative follow-up was unremarkable until the patient was lost to follow-up approximately 14 months later. She returned two years after surgery with complaints of pruritic and painful nodules near the right mastectomy scar. The lesions had initially been misinterpreted as shingles and treated with traditional remedies.

Upon clinical evaluation, the patient appeared asthenic and reported chest pain. Physical examination revealed multiple coalescing papulo-nodular lesions over the anterior chest wall, neck, and upper abdomen, forming indurated plaques with a sclerodermoid texture, consistent with the classical "carapace" pattern of carcinoma en cuirasse (Figure 1). A thoraco-abdominal-pelvic CT scan demonstrated bilateral pleuropulmonary lesions and osteosclerotic changes at vertebral levels T8 to T10, suggestive of polymetastatic recurrence.

A skin biopsy could not be performed due to financial constraints. Nevertheless, the clinical presentation, distribution of lesions, and imaging findings strongly supported the diagnosis of carcinoma en cuirasse. Differential diagnoses such as herpes zoster and post-surgical scarring were ruled out based on clinical evolution and lesion morphology.

Given the absence of immunohistochemical receptor profiling, a multidisciplinary tumor board recommended empirical first-line chemotherapy with paclitaxel. However, the patient and her family declined further oncologic treatment, expressing skepticism regarding prognosis and recovery. She was subsequently managed with palliative care and died three months after recurrence.

Figure 1: Anterior chest wall, lesions extending to the neck and abdomen.

Discussion

Carcinoma en cuirasse (CeC) represents a rare and particularly aggressive form of cutaneous metastasis, most often associated with advanced breast cancer. It is characterized by diffuse, indurated, sclerodermoid plaques that progressively infiltrate the dermis, creating an armor-like appearance over the chest wall. CeC is thought to result from lymphatic spread of malignant cells and typically signifies extensive disease progression [1,3].

In sub-Saharan Africa, breast cancer remains the most common malignancy in women, often diagnosed at advanced stages due to limited screening and delayed access to care [5]. The literature on cutaneous metastases in African populations is sparse. A retrospective study in Côte d'Ivoire involving 178 cases of metastatic breast cancer reported no instances of cutaneous involvement [6], underscoring the rarity and underreporting of CeC in the region.

The clinical diagnosis of CeC is usually based on characteristic cutaneous findings. It often begins with firm, erythematous papulo-nodules that coalesce into thickened plaques. The "carapace" or "armor-like" appearance is pathognomonic and typically involves the chest wall but may extend to the neck and abdomen [7,9]. Our patient's presentation aligns with this description. Differential diagnoses include morphea, post-radiation fibrosis, herpes zoster, keloids, and other cutaneous metastases [3,4]. Histopathological confirmation, which typically reveals malignant cells infiltrating dermal lymphatics in an "Indian file" pattern, remains the diagnostic gold standard [1]. Unfortunately, in our case, biopsy was not feasible due to economic limitations.

Therapeutically, CeC presents significant challenges. The prognosis is generally poor, and treatment is largely palliative. Systemic chemotherapy remains the mainstay, though responses are often limited. Local control measures such as radiotherapy, electrochemotherapy, thermotherapy, or novel approaches like snake venom-based therapies have been explored, but none have demonstrated consistent efficacy [3,10]. In high-resource settings, hormonal and targeted therapies—such as letrozole, palbociclib, and anti-HER2 agents—have shown promise, particularly in luminal A or HER2-positive subtypes [1]. In our setting, however, limited access to immunohistochemistry and systemic agents severely constrained treatment options.

Our case also highlights broader systemic issues: the lack of radiotherapy facilities, inadequate follow-up infrastructure, and socio-cultural barriers to continued care, including skepticism about therapeutic efficacy. These limitations likely contributed to the patient's treatment refusal and rapid decline.

This report reinforces the need for early diagnosis, routine histopathological and immunohistochemical profiling, and accessible multidisciplinary care pathways. In resource-limited settings, these remain essential yet often unmet goals.

Conclusion

Carcinoma en cuirasse is an uncommon but severe form of cutaneous metastasis, typically indicating advanced breast cancer and poor prognosis. In low-resource settings, the absence of histopathological and immunohistochemical diagnostics limits access to effective, individualized therapies. This case highlights the need for improved follow-up systems, enhanced awareness among healthcare providers, and better access to oncology services to ensure early detection and appropriate management of recurrences such as CeC. Multidisciplinary care and patient-centered communication are essential to improving outcomes, even in palliative scenarios.

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