Case Report

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Rapidly Growing Ulcerated Breast Cancer in a 46-year-old Female Patient

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Abstract: (1) Background: This case report focuses on a 46-year-old female patient diagnosed with a rare and aggressive form of breast cancer known as rapidly growing, ulcerated breast cancer. The patient exhibited rapid progression of the disease, experiencing discomfort and noticeable changes in the size and texture of the affected breast over a short period of time; (2) Methods: An intensive neoadjuvant chemotherapy regimen was employed as the primary treatment approach. The patient's response to this treatment was closely monitored and assessed. Various diagnostic tests and imaging techniques were utilized to evaluate the extent of the disease and track its response to the chemotherapy; (3) Results: The patient's response to the neoadjuvant chemotherapy regimen was remarkable, resulting in a complete pathologic response. This outcome, although unusual in rapidly growing, ulcerated breast cancers, highlights the effectiveness of neoadjuvant chemotherapy in managing large, locally advanced breast cancers; (4) Conclusions: The multidisciplinary approach employed in managing this complex breast cancer case proved to be crucial to the patient's favorable outcome. Despite the aggressive nature of the disease and the challenges posed by the rapid growth and ulceration, the patient achieved a positive result. This case contributes to the limited clinical literature on such unusual and aggressive breast cancer cases, providing valuable insights for future clinical practice.

Keywords: rapidly growing ulcerated breast cancer; intensive neoadjuvant chemotherapy; skin ulceration; invasive ductal carcinoma; doxorubicin; cyclophosphamide

1. Introduction

Breast cancer is a significant global health concern, being the most common cancer among women worldwide[1]. However, certain subtypes, such as rapidly growing ulcerated breast cancer, are relatively rare and pose unique clinical challenges[2]. The aggressive nature and quick progression of this subtype make it difficult to manage, and its relative rarity means that it is underrepresented in the medical literature. [3] This report presents a rare case of this subtype in a 46-year-old female patient, aiming to contribute to the existing knowledge and provide valuable insights for future management of similar cases.

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2. Case presentation:

A 46-year-old woman sought medical attention due to a rapidly enlarging mass in her left breast [figure 1]. This mass was accompanied by considerable discomfort and local skin ulceration. Despite these alarming changes, she reported no associated systemic symptoms, such as unintentional weight loss or fatigue, which often accompany advanced malignancies. Furthermore, her medical history was largely unremarkable with no previous significant illnesses, surgeries, or familial history of cancer, making the aggressive nature of her current condition puzzling and worrisome.

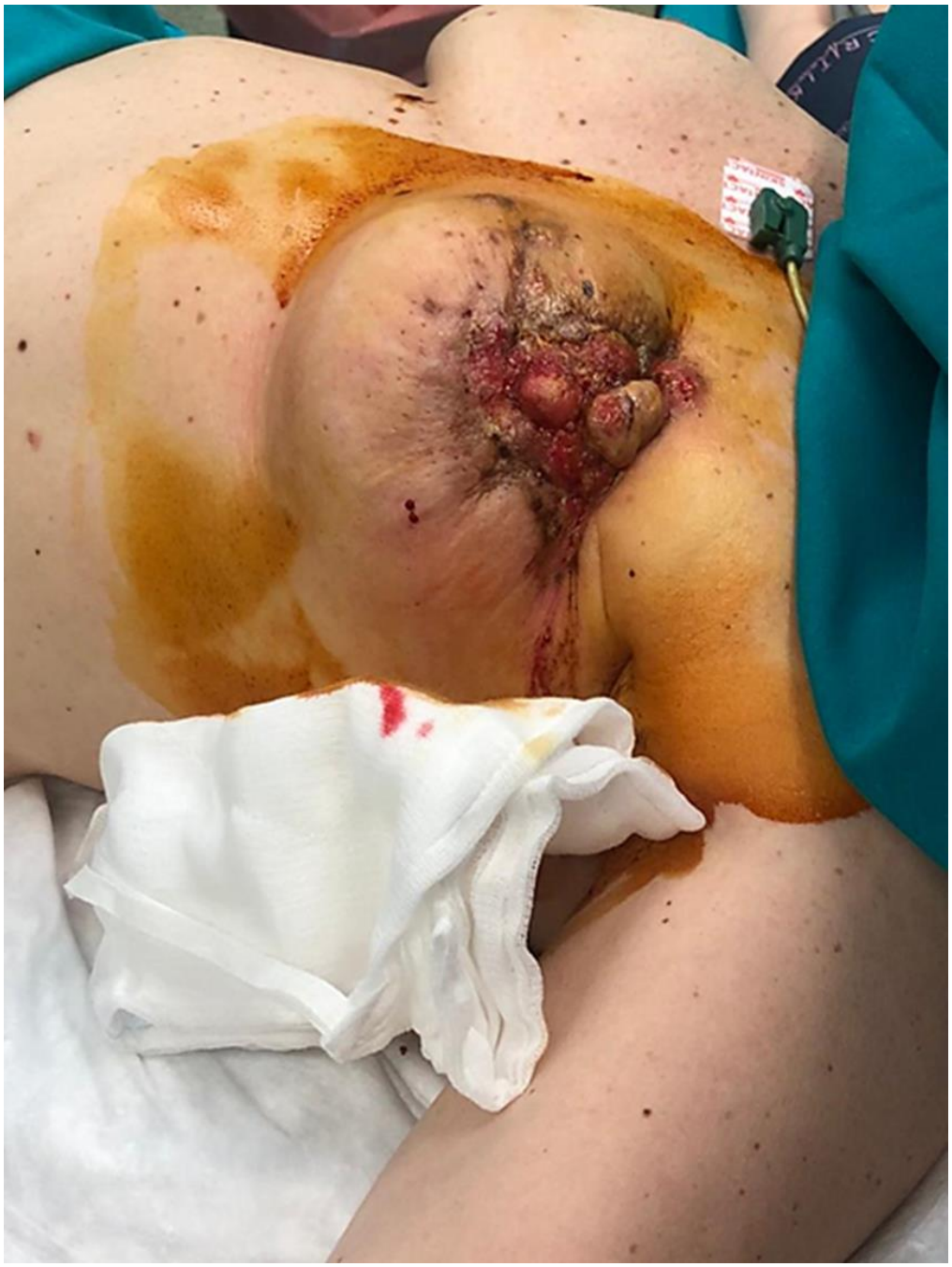

Figure 1. Rapidly Growing Ulcerated Breast Cancer. The image showcases a stark visual representation of a rapidly growing, ulcerated breast cancer in a 46-year-old female patient.

The patient, upon reflection, pinpointed the initial discovery of a minor lump in her left breast. Initially , the lump was small and did not cause any significant discomfort or concern for her. However,she began to notice a steady increase in the size of the lump. This progressive growth of the

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lump initially occurred at a slow pace. However, it underwent a notable transformation during a short period which the patient reported a rapid and concerning acceleration in the size of the breast lump. This sudden growth spurt of the lump was far beyond what the patient had witnessed before and was a primary factor that prompted her to seek immediate medical attention.

Parallel to the growth of the lump, another worrying change the patient noticed was the development of local skin changes around the area of the lump on her breast. The overlying skin started to show signs of inflammation and then developed into ulceration. This change further underlined the aggressive nature of the condition and added another dimension of concern for the patient.

2.1. Diagnostic assessment: Upon physical examination, an undeniable clinical finding was an ulcerating mass located in the upper outer quadrant of the patient's left breast. The mass was considerably large, measuring approximately 8 cm in diameter, which was consistent with the patient's description of rapid growth over a short period.

When palpated, the mass exhibited several distinctive characteristics. Firstly, the texture was notably firm, indicating a high cellularity of the lump, which is often a feature of malignant tumors. Secondly, the mass was immobile, adhered to the surrounding tissue, a characteristic commonly referred to as 'fixation'. This suggested that the mass might be invasive, extending into the nearby breast tissues.

Additionally, the mass was tender on palpation, which aligned with the patient's report of significant discomfort. This tenderness might have been due to the pressure exerted by the rapidly growing mass on the surrounding sensitive breast tissues or due to the inflammation associated with the ulceration.

While the findings related to the breast mass were worrisome, the examination provided a somewhat reassuring finding regarding the status of the regional lymph nodes. There was no palpable axillary lymphadenopathy on the same side, suggesting that there might not be any regional lymph node involvement, a factor that could have significant implications for the staging and treatment of the disease.

To confirm the nature of the breast mass, initial investigations started with a mammogram[4]. It depicted an irregular mass in the left breast, aligning with the physical examination findings. Subsequently, a core biopsy of the mass was taken, providing enough tissue for a histopathological examination which confirmed the diagnosis of invasive ductal carcinoma, the most common form of breast cancer.[5]

To assess the disease's spread, we conducted further staging investigations, which included a computed tomography (CT) scan of the chest, abdomen, and pelvis, as well as a bone scan. These assessments were crucial considering the aggressive local presentation of the disease.[6]

However, the results were encouraging, revealing no evidence of distant metastasis. This suite of investigations provided us with a comprehensive understanding of the patient's condition, guiding our subsequent treatment planning.[7]

2.2. Final diagnosis: Invasive ductal carcinoma.

2.3. Treatment: Following the diagnosis of invasive ductal carcinoma, the patient was referred to a multidisciplinary breast cancer team, composed of medical oncologists, radiation oncologists, surgeons, and nursing staff.[8] The team, with their combined experience and expertise, would coordinate the patient's treatment plan.[9]

The aggressive nature of the tumor, along with its local skin involvement, necessitated a robust and immediate response. The team decided on neoadjuvant chemotherapy, a treatment modality used to shrink the tumor size before any potential surgical intervention.[10]This approach allows for early systemic treatment, addressing any micro-metastases.

The chemotherapy regimen involved a combination of doxorubicin and cyclophosphamide, followed by taxol.[11] Doxorubicin and cyclophosphamide are well regarded for their effectiveness

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against breast cancer. Following several cycles of this combination, taxol, another powerful chemotherapy drug, was introduced.

This therapy exploited the distinct, yet synergistic, mechanisms of these drugs to maximize tumor shrinkage and control the disease. Regular follow-ups were scheduled to assess the patient's response to treatment and make necessary adjustments. The goal was clear: manage the aggressive disease, enhance the patient's quality of life, and improve survival chances.[12]

2.4 Follow-up and outcomes: The tumor demonstrated an excellent response to chemotherapy, with a significant reduction in size after three cycles. The skin ulceration also dramatically improved. The patient eventually underwent a left mastectomy and sentinel lymph node biopsy. Histopathology revealed no residual cancer in the mastectomy specimen, indicating a complete pathologic response to chemotherapy.

3. Results

This case report represents a rare instance of rapidly growing ulcerated breast cancer, a condition that poses significant challenges in clinical management due to its aggressive nature. The speed of growth and the accompanying skin ulceration add further layers of complexity to the disease's clinical picture and management.[13]

What is especially noteworthy in this case is the excellent response of the tumor to neoadjuvant chemotherapy, resulting in a complete pathologic response. This term refers to the absence of residual invasive cancer in the breast following the completion of neoadjuvant chemotherapy - a highly desirable outcome indicating a successful response to treatment.[14]

The clinical literature on the management of such aggressive and rapidly progressing cases is scarce, reflecting the rarity of this type of breast cancer. [15] However, neoadjuvant chemotherapy is often a recommended approach for large, locally advanced breast cancers.The reasoning behind this is to decrease the tumor's size, making it more amenable to subsequent surgical intervention, and to address any potential micro-metastases early in the treatment process.[10]

The outcome of this particular case strongly corroborates this approach. Despite the aggressive nature of the tumor and its local skin involvement, the disease showed a complete response to the neoadjuvant chemotherapy regimen of doxorubicin, cyclophosphamide, and taxol.

This case report adds to the limited body of evidence supporting the use of neoadjuvant chemotherapy in managing rapidly growing ulcerated breast cancers. It demonstrates that, even in the face of aggressive disease progression, appropriate systemic treatment can potentially lead to a favorable response. Furthermore, this case underscores the importance of multidisciplinary care in managing complex cases of breast cancer, highlighting the benefits of a collaborative approach to treatment planning and implementation.

While more research and clinical studies are needed to solidify the best practices in treating this form of breast cancer, this case report adds a valuable piece to the puzzle.

4. Discussion

This case report underscores the importance and potential effectiveness of aggressive therapeutic approaches, such as neoadjuvant chemotherapy, in managing rapidly growing and locally advanced breast cancer.[16] Despite the daunting nature of the disease, the patient's complete pathologic response to treatment reaffirms that robust clinical strategies can yield successful outcomes, even in complex and challenging scenarios.

The observation that this form of breast cancer, despite its aggressive characteristics, can indeed be responsive to systemic therapy is noteworthy. It contributes to our understanding of breast cancer in its various presentations and informs future clinical decision-making. The use of a combined chemotherapy regimen involving doxorubicin, cyclophosphamide, and taxol showcased efficacy in this case and could provide a guideline for treating similar cases.

Moreover, the importance of multidisciplinary care in managing such cases cannot be overstated.[17] The role of a coordinated team of oncologists, surgeons, pathologists, and nursing staff was paramount in assessing, treating, and monitoring this patient. This holistic and collaborative approach to treatment planning and execution is critical to achieving the best possible patient outcomes.

However, it is crucial to note that further research and clinical studies are needed to consolidate our understanding of rapidly growing, ulcerated breast cancers. The existing literature is relatively sparse, and more clinical data is necessary to solidify best practices and treatment protocols.[18] This case serves as a stepping stone, adding to the body of knowledge on this rare presentation of breast cancer and prompting future research on effective management strategies. Ultimately, our collective goal is to improve patient outcomes and enhance the quality of care provided to individuals facing such formidable clinical challenges.

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