

Cutaneous Signs of Breast Cancer: When a Dermatologic Evaluation is Useful After a Negative Mammography

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Introduction

Breast cancer is the most common cancer among women and is the second most frequent cancer worldwide [1]. Approximately 6%-10% of patients have Breast Cutaneous Cancer Manifestations (BCCM) as the first sign of cancer [2], but BCCMs usually occur in 23.9% of patients after the diagnosis [3]. BCCMs can be either represented by skin metastases and direct tumor extension, or as a paraneoplastic syndrome [4]. Skin involvement has 2 main clinical presentations: inflammatory breast cancer (IBC) and breast cancer with non-inflammatory skin involvement (SI). IBC is characterized by painful, erythematous, and indurated breast skin manifestations (ie, *peau d'orange*) and is associated with a poor prognosis [5]. Classical non-inflammatory SI is characterized by ulceration, edema, or satellite skin nodules that occur directly from the breast adenocarcinoma [5].

Case Presentation

We present the case of a 50-year-old patient who, following bilateral mastopexy, failed to achieve wound healing and developed a large erythematous and crusted plaque with retraction of the areola-nipple complex (Figure 1). Breast tomosynthesis with contrast and 3D study with tomosynthesis revealed no malignant features. Since the manifestations had persisted for 2 years, she was referred to our clinic, where a skin biopsy was performed on suspicion of carcinomatous mastitis. The histological report showed morphological and immunohistochemical findings compatible with triple-negative high-grade (G3) breast cancer. A total-body positron-emission tomography-computed tomography (PET-CT) scan was performed and showed hypercapturing lymph nodes in the right axillary region. She was then referred to the Oncology Team and started therapy with 12 paclitaxel



Figure 1. First visit of the patient. A large erythematous and crusted plaque, with serous fissures and purulent exudate of the areolar region and a retraction of the areola-nipple complex.



Figure 2. Patient examination following cancer therapy. The diagnosis of breast cancer reached by skin biopsy by the dermatologist made it possible to start anti-cancer therapy. The effectiveness of the latter is testified by the healing of the ulceration.

and carboplatin chemotherapy cycles, then she continued with epirubicin/cyclophosphamide and pembrolizumab. As a result, she showed a clear clinical improvement, testified by ulceration healing (Figure 2).

Conclusions

Skin involvement is an uncommon presentation of breast cancer [2]. Asymptomatic nodules and erythematous

plaques are the most common clinical presentations, although manifestations may have different aspects such as erysipeloid carcinoma, carcinoma *en cuirasse*, zosteriform metastasis, melanoma-like metastasis, Paget-like metastasis [3]. In other cases, BCCMs may have the appearance of benign lesions including dermatitis, cellulitis, urticaria, and papulovesicular eruptions. This may be responsible for delay in diagnosis and treatment of carcinoma [5]. The presence of the signs described must raise a suspicion of malignancy, thus it is necessary to perform mammography or breast tomosynthesis [6], followed by biopsy of the affected site. Interestingly, in our case the radiological examination was not determinant, so the patient came to the attention of the dermatologists and a skin biopsy of the affected area was performed and confirmed the diagnosis of breast carcinoma with the status of neoplastic cell receptors, fundamental in prognostic terms.

The case described shows how normal mammographic findings cannot rule out a breast carcinoma in presence of clinical skin signs that raise this suspicion. The aim of this report is to emphasize the role of the dermatologist in the early diagnosis of breast carcinoma, since, in a minority of cases, skin manifestations may be the first sign of presentation of this malignancy. In addition, it should be highlighted that there is a need for more studies on the epidemiological and clinical features of BCCMs.

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