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CASE REPORT

Cutaneous Squamous Cell Carcinoma Mimicking Breast Cancer

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Abstract

We present the case of an 82-year-old Caucasian woman with hypertension and diabetes but no other relevant personal or family history, who developed a large breast nodule. It was initially confused, both in imaging tests and in breast biopsy, with an invasive breast carcinoma. However, after its surgical excision, the definitive diagnosis was squamous cell carcinoma of cutaneous origin. At the time of diagnosis, it was a locally advanced cancer that continued with a local and distant aggressive behaviour, causing the death of the woman 16 months after diagnosis. It is an extremely rare case of cutaneous squamous cell carcinoma due to its aggressiveness and location, mimicking breast cancer.

Keywords: Squamous Cell Carcinoma; Cutaneous Squamous cell carcinoma; Skin; Breast; Breast Cancer.

Introduction

Cutaneous squamous cell carcinoma (CSCC) is a malignant tumor arising from epidermal keratinocytes [1]. It is the second most common cutaneous malignancy after basal cell carcinoma, with an incidence of 15-35 cases per 100,000 people [2]. It can occur on any surface of the skin, but sun-exposed sites are the most common locations in fair-skinned people. CSCCs are generally localized and highly curable tumors, metastases occur in less than 1-5% [3].

In this article we present a very rare case of CSCC in an 82-year-old woman who consulted for a nodule in the left breast. The tumor was initially confused with a locally advanced breast carcinoma. The definitive diagnosis was achieved after its surgical exeresis. It showed local and distant aggressive behaviour, causing the death of the woman 16 months after diagnosis. Therefore, it is an unusual case of CSCC, both for its location and for its clinical behaviour and aggressiveness.

Case Report

We present the case of an 82-year-old Caucasian woman, with full possession of mental faculties and independence in activities of daily living, hypertensive and diabetic, with no other personal history of interest or a family history of cancer. She attended our Breast Pathology Unit because of the appearance of a breast nodule of about 4 months of evolution.

Physical examination revealed a 4 cm nodule in the upper-external quadrant of the left breast and a fixed 2cm nodule at the ipsilateral axillary level; the contralateral breast and armpit were negative. Mammography and breast ultrasound confirmed the presence of a dense and heterogeneous nodule with spiculated contours measuring 4 cm, affecting the breast parenchyma and pre-breast fat; as well as another contiguous nodule in the axillary tail, compatible with a lymph node. A core needle biopsy of the breast nodule reported: fibro-adipose tissue infiltrated by invasive mammary carcinoma of no special type (NST), poorly differentiated (grade III of Nottingham score), with extensive necrosis and no preserved breast tissue. Extension studies (thoracoabdominal computed tomography and bone scintigraphy) were performed, with no data of distant metastatic disease.

Initially, systemic treatment (hormone therapy and chemotherapy) was chosen. However, an extensive locoregional progression was observed over the months. At 6 months, she presented a large exophytic tumor mass of 12 cm, ulcerated and hemorrhagic on its surface (Figure 1), with no evidence of distant metastatic disease. Surgical treatment was decided due to its progression, performing a left total mastectomy with partial resection of the pectoralis major. The histology of the surgical specimen revealed that it was a 12.5 cm, infiltrating and ulcerated CSCC, poorly differentiated (grade III), with tumor-free surgical margins and lymphovascular and perineural invasion. After surgery, she continued with radiotherapy (32 Gy) for 5 months.

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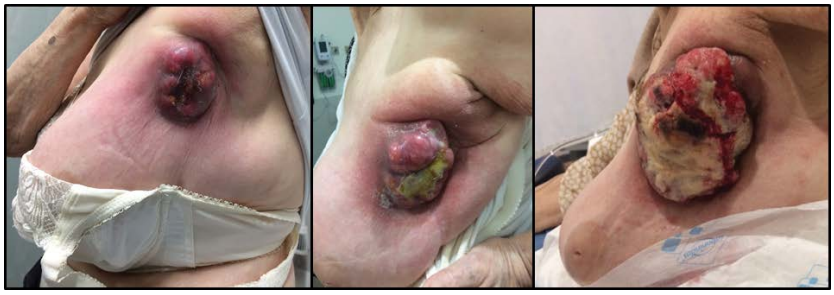

Figure 1: Breast CSCC progression over time (6 months), prior to performing the mastectomy

At 8 months after surgery, she presented cutaneous lethalides at the level of the scar and several infracicatricial mammary nodules suggestive of tumor recurrence. These were surgically removed, confirming that they were recurrences of the previous CSCC. The computed tomography showed local and pulmonary progression as well as thrombosis of the left subclavian vein. She was admitted to the hospital two months after the last surgery due to worsening dyspnoea, poor analgesic control and poor general condition. Given the prognosis of the neoplasm and her end-of-life situation, it was decided to limit therapeutic effort and perform deep sedation. She died 16 months after diagnosis.

Discussion

CSCC or epidermoid skin cancer is the second most common form of skin cancer, representing 20% of these [4]. It is classified within the group of non-melanoma skin carcinomas, as it originates from epidermal keratinocytes. CSCC can develop on any skin surface, but it occurs most often in sun-exposed areas in fair-skinned people. Involvement of other areas, particularly the lower legs and the anogenital region, is more common in people with dark skin [5].

Clinically, CSCC presents a wide variety of skin lesions: papules, plaques or nodules; that can be smooth, hyperkeratotic or ulcerated. The clinical appearance of invasive CSCC is often correlated with tumor differentiation. Well-differentiated tumors usually appear as indurated hyperkeratotic papules, plaques or nodules. However, those poorly differentiated may present ulceration, hemorrhage or areas of necrosis. Their typical locations are sun-exposed areas. Therefore, our case does not correspond to the typical clinical presentation or to the usual location. We did observe a local aggressive behaviour from the first consultation: rapid increase in size with exophytic proliferation and ulceration. These characteristics are more typical of CSCCs, and they also coincide with the high histological grade that our case presented.

The diagnosis of CSCC is confirmed by a skin biopsy, taking the utmost precautions to ensure that the biopsy sample reaches the level of the middle dermis in order to detect the presence or absence of invasive disease [6]. Our patient consulted for a subcutaneous breast nodule that was initially confused with an invasive breast carcinoma. Initially, a core needle biopsy was performed, reported as fibro-fatty tissue infiltrated by NST breast carcinoma. However, it should be emphasized that it was difficult to reach this initial diagnosis given the extensive necrosis and hemorrhage, which made it impossible to recognize preserved breast parenchyma. Likewise, morphological mimicry between human malignancies is a well-known phenomenon in pathological anatomy. This can occur both in undifferentiated tumors and in tumors with histological similarity, such as breast and skin adnexal carcinomas [7, 8]. The definitive diagnosis in our case was obtained after surgical exeresis.

The surgical specimen from the mastectomy showed that it was not a breast carcinoma but rather an infiltrating and ulcerated CSCC, poorly differentiated (grade III) and large (12cm). The findings demonstrated that it was an infiltrating epithelial tumor of a squamous lineage, morphologically and immunohistochemically compatible with a poorly differentiated squamous cell carcinoma. The existence of high-grade dysplasia foci with an invasive component, emerging from the surface epithelium, together with the absence of a neoplastic component (in situ and / or invasive) in the surrounding mammary epithelium, suggested that the described neoplasia had a cutaneous origin. Therefore, it was not a primary squamous cell carcinoma of the breast, also known as metaplastic carcinoma. For the diagnosis of primary squamous cell carcinoma of the breast, the tumor must meet the following criteria: 1) primary carcinoma with no other neoplastic components such as ductal or mesenchymal elements (squamous type only), 2) origin of the tumor independent of the overlying skin and nipple, and 3) absence of an associated primary squamous cell carcinoma in other locations, which may have metastasized to the breast [9, 10].

The CSCCs have local infiltration capacity. The vast majority of cases correspond to low-risk invasive tumors, with a low rate of metastasis that fluctuates between 2-5% [4, 11]. However, rates as high as 47% have been reported for high-risk cases. “High-risk” CSCCs are tumors that have clinical or histological features that have been associated with an increased risk of aggressive tumor behaviour. Our case has several characteristics associated with “high risk”: deep infiltration, size greater than 2 cm, poor histological differentiation, and perineural and lymphovascular invasion [12-14]. In cases of nodal involvement, there is a 5-year survival of 26% to 34% [15].

Conclusions

In this article we present a curious case of squamous cell carcinoma of the breast of cutaneous origin, which simulated an invasive breast carcinoma and was initially confused with it. It is a rare case both due to its location and its aggressive clinical behaviour, causing the death of the woman 16 months after diagnosis.

Conflicts of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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