Unusual Cutaneous Manifestation of a Rare Breast Cancer Subtype

Soumia Ayachi1,2*, Ali Benaaza1,3

1 Academic hospital of Batna, Batna, Algeria
2 Medical oncology department, Cancer research centre of Batna, Batna, Algeria
3 University of Batna, Batna, Algeria

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Abstract
Breast cancer is the most common cancer among women over the world. About 1 in 8 women will develop invasive breast cancer during their lifetime. The most common presentation of breast carcinoma is lump mass or skin nodules. Cutaneous metastatic carcinoma, also known as carcinoma erysipeleoid is an unusual clinical finding. In women, is most frequently found in association with breast cancer rather than other visceral malignancies.

Introduction
Usually breast cancer begin in the cells that line the ducts (ductal cancer) or from cells that line the lobules (lobular cancer), while a small number start in other tissues and rarely in the skin, the most common breast cancer metastases are bone, lung and liver.

Cutaneous metastases or “carcinoma erysipeleoid” are more commonly seen in breast cancer than in any other visceral malignancy in women, it can be synchronous while initial diagnosis or metachronous in case of cancer relapse. Additionally, these lesions have variable clinical appearances and can be mistaken for benign skin lesions.

Case Report:
A 62 years old woman presented with a 6-month history of multiple cutaneous pruritic lesions on the breast, three months later the patient had discovered a lump on her left breast. Clinical examination demonstrated an inflammatory skin with a spread small papulonodular erythematous lesion like a cornflower, ranging from 3 to 10 mm, with a lump of 30/40 mm in the medial internal quadrant of the left breast with left axillary lymph node of 10 mm. Otherwise the physical examination was unremarkable (Figure 1,2,3).

Histopathology of the lump and skin nodule has shown a ductal breast carcinoma with colloid mucus carcinoma on the lump and colloid mucus subcutaneous metastasis in skin nodules. Immunostaining was positive for estrogenic, progesteronic and HER2 receptor with a high level of Ki67 (more then 60%).

The mammogram has shown a distortion image with a central dens core and multiple micro calcification in the medial internal quadrant and ultrasonography has revealed a 25/20 mm solid lesion, suggestive of malignancy with multiple left axillary lymph nodes of 10 mm, skin thickening and multiple well defined cutaneous dense nodules were also observed. No distant metastases were found.

The patient has been referred to our oncology department where she received systemic chemotherapy after 4 cycles we achieved a good clinical response (Figure 4,5,6).

She underwent a modified radical mastectomy. Histopathology had revealed a complete response without neoplastic lesion on the breast tissue, and no axillary lymph nodes metastases were detected. The patient was sequentially treated with systemic adjuvant chemotherapy (3 cycles of Paclitaxel and 18 cycle of Trastuzumab) then hormonotherapy (aromatase inhibitor). At present 26 months after initial diagnosis and 9 months after surgery, the patient has no signs of recurrence.

Figure 1

*Corresponding author: Soumia Ayachi, Medical oncology department, Academic hospital of Batna, Cancer research centre of Batna, Batna, Algeria, Tel: 2133381465901; Fax: 2133381465901; E-mail: soumiayachi30@gmail.com
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Discussion

Cutaneous metastases are an unusual clinical finding. In females, the most frequent primary site of cutaneous metastasis is, by far, the breast adenocarcinoma [1]. Review of literature indicates that the incidence of cutaneous metastases for all types of carcinomas ranges from 0.7% to 10%. The breast, skin, stomach, lung, uterus, large bowel and kidney are the most frequent organs to produce cutaneous metastases [2]. Cancers that have the highest propensity to metastasize to the skin include melanoma (45% of cutaneous metastases cases) and breast cancer (30%), nasal sinus (20%), larynx (16%), and oral cavity (12%), therefore, making it the most common metastases in women with breast cancer seen by dermatologists [3-5]. Brownstein et al. indicated that 3% of breast cancer are manifested with cutaneous metastases. Lookingbill et al. reported that 6.3% of patients with breast cancer had skin involvement at initial diagnosis [6].

Cutaneous metastases of breast cancer have a variable clinical appearance and manifestation [7]. The inflammatory metastatic carcinoma is characterized by warm erythematous and tender patch or plaque with an active border resembling an erysipelas or cellulitis usually affecting the breast and nearby skin [7]. Telangiectasias metastatic carcinoma is characterized by violaceous papulovesicles similar to lymphangiom circumscriptum. "En cuisses" metastatic carcinoma usually appears as firm papulonodules or nodules, firm, pink to reddish, multiple but occasionally solitary, that rarely ulcerates [8].

Usually, cutaneous metastases are localized on the chest wall or in the abdomen skin. In the study of Mordenti et al. the sites frequently involved were the sites of previous mastectomy and anterior part of the chest in over 75% of patients (through direct extension or lymphatic spread and less commonly haematogenous spread), then head, neck and rarely reddish nodule on the tip the nose described as "clown nose" and eyelids (carcinomatosis blepharitis) [5].

Medical practitioners should be vigilant of the possibility of metastatic disease in breast cancer patients presenting as cutaneous lesions mimicking benign dermatological conditions [9]. If there is any uncertainty regarding the cause of cutaneous lesion, histological confirmation of diagnosis from tissue biopsy must be carried out [9].

Histologically, they appear as atypical neoplastic cells arranged in small nests, islands or cords in single file within the collagen bundles of dermis [10]. The most frequent pathologic pattern in
Cutaneous metastases is the enlarged nodule, located on the deeper dermis, adjacent to or inside its intersection with the subcutaneous tissue [10]. Essentially, it presents as solid aggregates of neoplastic cells surrounded by fibrosis, with tumour cells typically disposed in glandular-like structures or linearly between groups of collagen fibres in a single file pattern. Inflammatory reaction is often minimal or even non existent [11]. Most metastatic carcinomas express cytokeratin 7 and 19, estrogenic, progesterone receptors, mammoglobin, GCDFP-15, CEA and E-cadherin, even though they may be negative for CK20, 5/6, CD10 and TTF1 [12].

The case we present is unique in two ways. First, the exceptional clinical presentation (papulonodular spread lesion before breast lump) and the special histopathology nature (ductal carcinoma and colloid mucus carcinoma with cutaneous metastases)

Cutaneous metastases from breast carcinoma are usually associated with advanced stages of the disease and therefore in most cases, are sign of poor prognosis [13]. Death usually occurs within a few months (6.5 months), although few patients have survived for several years [13]. In this case, the good response to the treatment and evolution of disease observed 26 months after initial diagnosis contrast with the remarkable initial clinical appearance.

Conclusion

In conclusion, in women breast cancer is the most common source of cutaneous metastases. Accurate assessment of the lesion as metastatic can be difficult because the lesions are often ambiguous and undistinguished from more common benign tumour. Cutaneous metastases are often associated with visceral disease; their prognosis is among the most favourable of this malignancy.

References