

Skin Lesions after Prophylactic Mastectomy and Immediate Reconstruction

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Summary: Metastatic breast carcinoma can mimic benign cutaneous lesions. Breast surgeons should be aware of skin manifestations to be able to distinguish them and set a proper therapeutic strategy. A clinical case of cutaneous lesion after breast cancer is presented. A 41-year-old woman with a history of left breast cancer underwent a prophylactic right nipple-sparing mastectomy with immediate breast implant reconstruction. After surgery, she attended our service due to a right periareolar rash resistant to medical treatment, accompanied by cutaneous induration and fixed axillary adenopathy. A differential diagnosis of skin metastases was considered. Cutaneous metastases should be the first diagnosis of skin lesions in oncological patients due to the implications in terms of treatment and prognosis. However, differential diagnoses have to be discussed. (*Plast Reconstr Surg Glob Open* 2013;1:e82; doi: 10.1097/GOX.000000000000009; Published online 18 December 2013)

Breast carcinoma is the more frequent neoplasia associated with cutaneous dissemination in women, excluding melanoma. Cutaneous metastases are a rare clinical finding with an overall incidence of 5% and are usually presented in those cases associated with advanced disease.¹⁻³

The most common manifestations are nodules and tumors that settle down from the primary tumor area, but they can also mimic benign skin lesions.^{4,5}

With the increased trend of oncoplastic surgery, immediate reconstruction, and nipple-sparing procedures, breast surgeons should be aware of the incidence of skin lesions to establish a correct differ-

ential diagnosis to recognize their origin and evaluate a proper therapeutic strategy.

This article presents the findings from a single case and describes the impetigous eruption mimicking skin metastases of a patient who underwent a mastectomy with immediate reconstruction.

CASE REPORT

A 41-year-old woman with a history of breast cancer attended our service due to a right periareolar eczematous eruption resistant to medical treatment.

She was treated by left skin-sparing mastectomy with immediate implant reconstruction and sentinel lymph node biopsy for high-grade extensive ductal carcinoma in situ 3 years ago. In 2010, she returned for a nipple-areola complex reconstruction. In the 2 years, the patient has been followed up by her medical and breast surgeon oncologists with all medical exams being correct.

Reviewing family history, a positive history of breast cancer existed (5 cases of first and second degree), so she underwent BRCA 1/2 gene testing, which was negative. However, given the strong inherited familial risk (risk of 46% according to Claus

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Model), she decided to have a contralateral prophylactic mastectomy. The patient underwent a right nipple-sparing mastectomy with immediate breast implant reconstruction in 2012. The postoperative recovery was favorable. The anatomopathological findings showed atypical ductal hyperplasia.

Seven months later, she noticed a right peri-areolar eczematous rash. As the skin lesion was resistant to medical treatment with pristinamycine and no improvement in symptoms was observed, the patient decided to visit her surgical oncologist. Clinical examination revealed ulcerated lesions with well-defined margins and erosions and crusts at the nipple-areolar complex reaching an area of 12×9 cm accompanied by cutaneous induration (Fig. 1). There was no tenderness and local rise in temperature over the lesions. A right axillary lymph node was detected, 1 cm in size, fixed, and painless. The patient did not report pain or asthenia although she described the lesions were slightly pruritic.

She was clinically diagnosed as having possible cutaneous metastases. A breast ultrasound, a fine-needle aspiration cytology of the adenopathy, and a punch biopsy of the skin lesion were requested. It was decided to stop all used topical treatments (pristinamycine) and a follow-up visit in 3 weeks.

The ultrasound showed a thickened area in the nipple-areolar complex but no suspicious lymphadenopathy, and no alterations in both breast implants were found. The lymph node cytology was negative.

Three-week follow-up examination showed that cutaneous lesions had spread to upper breast, upper and lower extremities, and forehead, correlated with the evolution of infectious disease (Fig. 2).

The skin biopsy confirmed the diagnosis of eczematous impetigo lesion. Histopathological study using hematoxylin-eosin stains revealed exocytotic inflammatory lesions accompanied by parakeratosis. The superficial part of the dermis showed a mononuclear lymphocytic and histiocytic, no leukocytoclastic, infiltrate. No atypias or other signs of malignancy were found (Fig. 3).

The patient was finally diagnosed with impetigo infection and treated with antibiotic and topical corticoid cream. She has been followed up regularly and has shown a satisfactory clinical evolution with almost complete disappearance of cutaneous manifestations (Fig. 4).

COMMENT

In recent years, the incidence of cutaneous metastases has increased because the survival of patients

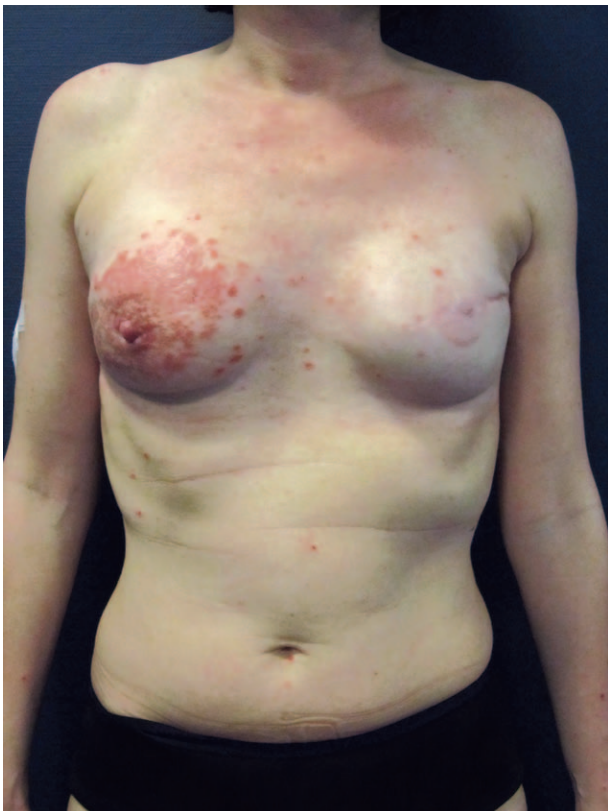


Fig. 1. Erosions and crusted lesions at the nipple-areolar complex.



Fig. 2. Extent of lesions to upper extremities.

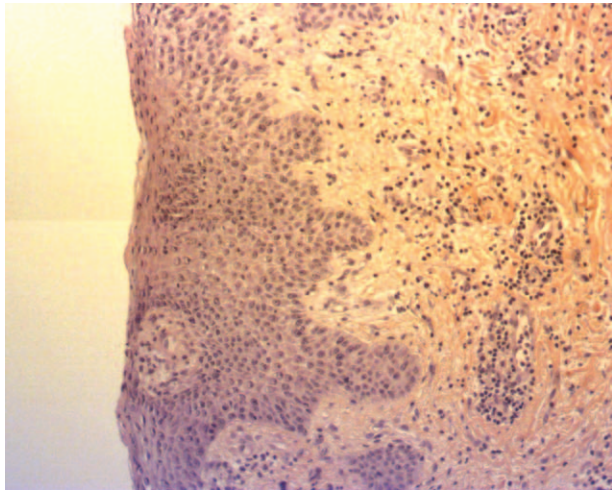


Fig. 3. Microscopic study of the lesion.

has improved due to better treatment strategies.⁶ Moreover, the development of new surgical techniques has allowed a greater tendency to oncoplastic surgery and skin-sparing mastectomy with immediate reconstruction leading to a better cosmetic result and keeping the benefit in terms of survival. All these patients will be controlled by a surgical oncologist for several years so it becomes important for surgeons to assess the incidence of cutaneous manifestations and



Fig. 4. Three-month follow-up.

to be able to immediately identify them to make a proper diagnosis and treatment.

Excluding melanoma, breast carcinoma is the neoplasia more frequently associated with cutaneous dissemination in women, although the overall incidence remains low, up to 5%.^{1,7,8}

Cutaneous metastases can have different clinical patterns, the most common manifestations are nodules.^{4,9} Other less common presentations may include ulcers, erythema (carcinoma erysipeloides), plaques, or zosteriform distribution.¹⁰⁻¹² Carcinoma erysipeloides is a rare variant of metastatic disease (<1%) and is usually associated with intraductal breast carcinoma.¹³ Mordenti et al¹⁴ reviewed 164 patients, and they concluded that the most frequent clinical and histopathological presentations were papules and nodules in 80%, followed by telangiectatic and erysipeloid carcinoma.

The differential diagnosis of cutaneous lesions in breast cancer patients is very wide. Other possible etiologies can be acute or chronic cutaneous changes secondary to radiotherapy or even infectious processes such as erysipelas, cellulitis, or candidiasis.¹⁵

The present case highlights the importance of identifying skin lesions by the surgical oncologist to set a proper therapeutic strategy and the need to perform a full-body cutaneous inspection. Specific clinical features such as the absence of leukocytosis, lack of fever, and prolonged presence of the lesion without response to medical treatment should alert the breast surgeon to the possibility of cutaneous metastases.¹⁶ But a skin biopsy should always be performed to confirm the definitive diagnosis. Under no circumstance should the biopsy be delayed in the absence of mammographic or sonographic breast lesion. It is the best diagnostic and therapeutic tool in these lesions, supplemented with immunohistochemistry study for estrogen and progesterone receptors and *HER2* status.^{3,17}

CONCLUSIONS

We conclude that cutaneous metastases should be the first diagnosis of skin lesions in oncological patients due to the implications in terms of treatment and prognosis. As metastatic breast carcinoma can mimic benign cutaneous lesions, a breast surgical oncologist should be aware of skin manifestations and must be able to distinguish them.

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REFERENCES

1. Krathen RA, Orengo IF, Rosen T. Cutaneous metastasis: a meta-analysis of data. *South Med J*. 2003;96:164–167.
2. McKee PH. Cutaneous metastases and Paget's disease of the skin. In: McKee PH, Calonje E, Granter SR, eds. *Pathology of the Skin*. 3rd ed. Philadelphia: Elsevier Mosby; 2007:1498–1508.
3. AbdullGaffar B, Almualla A, Al-Marzooqi F. Post-mastectomy breast rash. Carcinoma erysipeloides. *Int J Dermatol*. 2010;49:855–857.
4. Lookingbill DP, Spangler N, Helm KF. Cutaneous metastases in patients with metastatic carcinoma: a retrospective study of 4020 patients. *J Am Acad Dermatol*. 1993;29(2, Part 1):228–236.
5. Vano-Galvan S, Moreno-Martin P, Salguero I, et al. Cutaneous metastases of breast carcinoma: a case report. *Cases J*. 2009;2:71.
6. De Giorgi V, Grazzini M, Alfaioli B, et al. Cutaneous manifestations of breast carcinoma. *Dermatol Ther*. 2010;23:581–589.
7. Carnero-Fernández M, Allegue-Rodríguez F, Fachal-Bermúdez C, et al. Cutaneous metastases from lobular breast carcinoma. *Galicía Clin*. 2011;72:191–193.
8. Lehman JS, Benacci JC. Cutaneous metastasis of invasive ductal carcinoma of the breast to an infusaport site. *Cutis* 2008;81:223–226.
9. Marneros AG, Blanco F, Husain S, et al. Classification of cutaneous intravascular breast cancer metastases based on immunolabeling for blood and lymph vessels. *J Am Acad Dermatol*. 2009;60:633–638.
10. Reinders MG, Vermeer MH. Carcinoma erysipeloides in breast cancer. *Surgery* 2010;148:1040–1041.
11. Nambi R, Tharakaram S. Carcinoma erysipeloides as a presenting feature of breast carcinoma. *Int J Dermatol*. 1999;38:367–368.
12. Hussein MR. Skin metastasis: a pathologist's perspective. *J Cutan Pathol*. 2010;37:e1–e20.
13. Lever LR, Holt PJ. Carcinoma erysipeloides. *Br J Dermatol*. 1991;124:279–282.
14. Mordenti C, Peris K, Concetta Fargnoli M, et al. Cutaneous metastatic breast carcinoma. *Acta Dermatovenerol Alp Panonica Adriat*. 2000;9:4.
15. Nava G, Greer K, Patterson J, et al. Metastatic cutaneous breast carcinoma: a case report and review of the literature. *Can J Plast Surg*. 2009;17:25–27.
16. Hazelrigg DE, Rudolph AH. Inflammatory metastatic carcinoma. Carcinoma erysipeloides. *Arch Dermatol*. 1977;113:69–70.
17. Karamouzis MV, Ardavanis A, Alexopoulos A, et al. Multiple cutaneous acral metastases in a woman with breast adenocarcinoma treated with pegylated liposomal doxorubicin; incidental or aetiological association? *Eur J Cancer Care (Engl)* 2005;14:267–271.