

Cutaneous Metastatic Breast Adenocarcinoma

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PRACTICE POINTS

- Breast carcinoma is one of the most common malignancies to metastasize to the skin in women.
- Although interventions are aimed at halting disease progression, cutaneous metastases indicate widespread disease and are associated with a poor prognosis.

To the Editor:

Cutaneous metastases occur more often in the setting of breast carcinoma than other malignancies in women.¹ Although interventions are aimed at halting disease progression, cutaneous metastases indicate widespread disease and are associated with poor prognosis. We present the case of a patient with metastatic breast adenocarcinoma who developed cutaneous metastasis on the trunk after a double mastectomy. The widespread distribution and wide range of clinical manifestations are unique.

An 81-year-old woman presented to the dermatology office for evaluation of a skin eruption that started along a mastectomy scar on the left breast a few months post-operatively. She had a history of stage IV breast adenocarcinoma metastatic to the chest wall that was treated with a double mastectomy 2 years prior. The patient denied associated pain or pruritus and mainly was concerned with the cosmetic appearance. At the time of the initial diagnosis of breast adenocarcinoma, the patient was offered chemotherapy, which she did not tolerate. The patient opted against radiation therapy, as she preferred a more natural approach, such as anticancer shakes, which she was taking from a homeopathic source. She was unaware of the ingredients used in the shakes.

Physical examination revealed multiple grouped, firm, purpuric papules, nodules, and pseudovesicles on a background of violaceous erythema on the chest, abdomen, and flank (Figure 1). The background erythema had a mosaic pattern that extended toward the central back (Figure 2). A scoop shave biopsy of one of the purpuric nodules revealed highly atypical cells with abundant cytoplasm, large nuclei, and prominent nucleoli (Figure 3). Focally, the cells appeared to form glandular structures. Numerous atypical mitotic figures were present. Lymphatic invasion and microcalcifications were identified (Figure 3 [inset]). Immunohistochemical staining for cytokeratin 7 and gross cystic disease fluid protein 15 were strongly positive (Figure 4). Based on the histopathologic and immunohistochemical findings, a diagnosis of cutaneous metastatic breast adenocarcinoma was made. The patient opted to continue the homeopathic anticancer shakes and was subsequently lost to follow-up.

Cutaneous metastases of internal malignancies make up only 2% of all skin tumors,¹ making them relatively uncommon in the dermatologic setting. However, cutaneous metastasis occurs in 23.9% of patients with breast carcinoma, making it the most common tumor after malignant melanoma to metastasize to the skin.² The most common sites for breast carcinoma cutaneous metastasis (BCCM) are the chest wall and abdomen; other sites include the head/neck region and the extremities. The clinical presentation of BCCM varies depending on the mode of dissemination—lymphatic, hematogenous, contiguous growth, or iatrogenic implantation. The most common presentation is nodular carcinoma (47%–80%).^{2,3} Other presentations include carcinoma telangiectoides (8%–11%),^{2,3} alopecia neoplastica (2%–12%),^{2,3} and carcinoma erysipeloides (3%–6%).^{2,3} Carcinoma en cuirasse is rare.³

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FIGURE 1. A, Metastatic breast adenocarcinoma involving the chest and upper arm. Numerous violaceous papules and nodules were present in a background of violaceous erythema. B, Close-up view of the biopsy site.



FIGURE 2. Metastatic breast adenocarcinoma involving the back, with a mosaic pattern of violaceous erythema extending toward the central back.

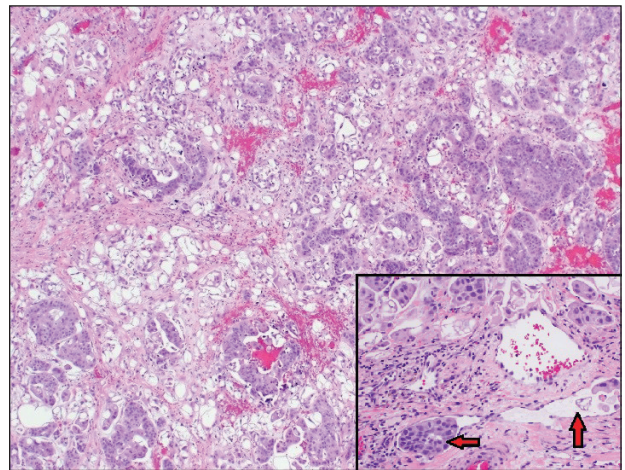


FIGURE 3. Histopathology showed highly atypical cells with abundant cytoplasm, large nuclei, and prominent nucleoli forming glandular structures (H&E, original magnification $\times 20$). Intralymphatic invasion (arrows) was identified (inset).

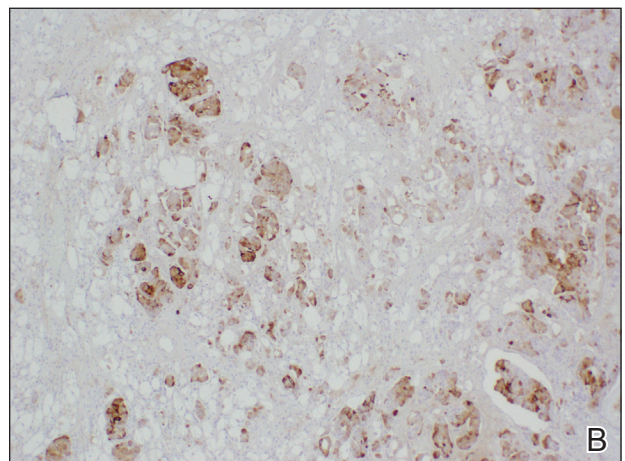
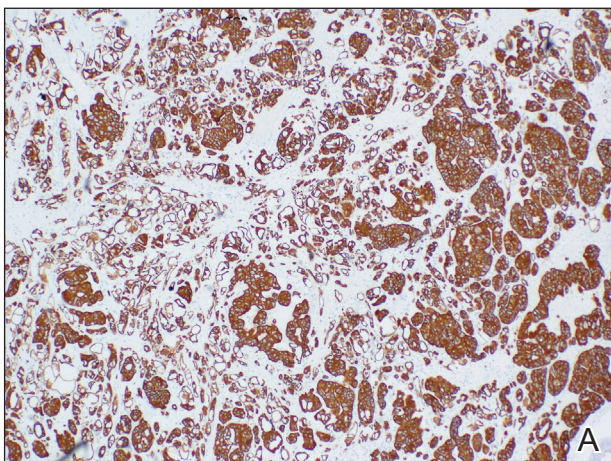


FIGURE 4. A and B, Immunohistochemical staining for cytokeratin 7 and gross cystic disease fluid protein 15, respectively, were strongly positive (original magnifications $\times 20$).

Nodular BCCM may present as firm solitary or grouped papules and nodules that are painless and range in color from flesh colored or pink to red-brown. Histologically, they are composed of atypical neoplastic cells arranged in small nests and cords, usually in a single-file line within the collagen bundles of the dermis.⁴ Carcinoma telangiectoides is characterized by its violaceous hue due to the dilated vascular channels. The lesions are purpuric papules and pseudovesicles appearing on an erythematous base, most commonly contiguous with the surgical scar. Histologically, collections of atypical tumor cells and erythrocytes are present along with dilated blood vessels in the papillary dermis.² Alopecia neoplastica presents as singular or grouped cicatricial patches of hair loss. Lesions of carcinoma erysipeloides present as warm, erythematous, tender, well-defined patches or plaques. Carcinoma en cuirasse is characterized by an erythematous sclerodermoid plaque on the chest wall.²

Our patient's presentation was unique due to the widespread distribution, unusual pattern, and variable clinical morphologies of the cutaneous metastases. Our patient had findings of both carcinoma telangiectoides

and nodular carcinoma. The mosaic violaceous erythema extending toward the mid-back rarely is reported in the literature and indicates extensive intravascular spread of tumor cells in the dermis.

Metastatic breast cancer is associated with a poor prognosis because it typically occurs in advanced stages and often does not respond to treatment.⁵ Although chemotherapy, hormonal therapy, and/or radiation therapy may improve survival, the choice in regimen is guided by cancer histology as well as prior treatments. In our case, the patient chose to continue her homeopathic therapy.

REFERENCES

1. Nashan D, Meiss F, Braun-Falco M, et al. Cutaneous metastasis from internal malignancies. *Dermatol Ther.* 2010;23:567-580.
2. De Giorgi V, Grazzini M, Alfaioli B, et al. Cutaneous manifestations of breast carcinoma. *Dermatol Ther.* 2010;23:581-589.
3. Mordenti C, Peris K, Concetta Fagnoli M, et al. Cutaneous metastatic breast carcinoma. *Acta Dermatovenerologica.* 2000;9:143-148.
4. 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.
5. Kalmykow B, Walker S. Cutaneous metastasis in breast cancer. *Clin J Oncol Nurs.* 2001;15:99-101.