Zosteriform Skin Metastases from Breast Cancer

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Abstract
Metastatic skin cancer is a rare complication of internal malignan-
cies. Patients who develop cutaneous metastases rarely present with
a zosteriform distribution. Herein, we describe a 65-year-old woman
with a prior history of breast cancer in whom zosteriform metastases
developed along her left T₈₋₉ abdominal dermatomes.

Keywords • Breast cancer • zosteriform • metastasis

Introduction
Metastatic skin cancers vary in type. Most of these meta-
stakes present as nonspecific painless dermal or subcutane-
ous nodules leaving the overlying epidermis intact. The
most common clinical finding is clusters of discrete firm painless
nodules emerging rapidly without any explanations on a given anat-
omic site, proliferating rapidly to a stationary phase. Occasionally,
cutaneous metastases are as large as a hen’s egg or so tiny as to be
of miliary size or even hardly detectable.⁴ Only a few cases of me-
tastatic skin cancer presenting with a zosteriform distribution have
been reported in the medical literature.⁵,⁶ Zosteriform appearance of
the metastasis has two aspects; one is its morphology with lesions
resembling herpetic vesicles, and the other is its zosteriform distribu-
tion.⁴

Herein, we describe a patient with a previous history of breast
cancer presenting with zosteriform cutaneous metastases.

Case Presentation
A 65-year-old woman presented in June 2003 with firm papules on
the left side of her abdomen which had been existed for 9 months.
She had had a ductal carcinoma of the left breast 10 years before
treated by mastectomy and chemotherapy. Four years later, she had
a recurrence and treated again with surgery and chemotherapy. And
now since 9 months before, some skin lesions appeared.

The lesions were not painful, did not itch and were diagnosed as
multiple cysts. One of the lesions was manipulated by a physician
with a sterile needle. Miliary-sized skin color solid papules were scat-
tered and confluent on the left side of the abdomen with typical zos-
teriform distribution consistent with the left T₈₋₉ dermatomes (Fig 1).
The rest of the physical examinations was negative. A skin biopsy
was performed. The histopathologic study revealed metastatic ade-
nocarcinoma arising from the primary breast carcinoma

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Laboratory studies were unremarkable. Further investigations failed to disclose internal metastases. The patient was referred to an oncologist and underwent chemotherapy.

Discussion

Cutaneous metastases are relatively rare and have been reported in 0.7% to 9.0% of all patients with cancer.\(^1\) It may be an important clue for tumor progression or even the first manifestation of malignancy.\(^5\) The relative frequencies of metastatic skin disease tend to correlate with those of the types of primary cancer in each sex.\(^1\) It has been reported that the lung is the most common primary site of carcinoma in men and the breast is the most frequent primary site of carcinoma in women that metastasize to the skin. In addition, there may be a long-time lag between the diagnosis of the primary neoplasm and recognition of the skin metastases. Lookingbill et al., reported a lag period of 4 to 5 years for breast cancer.\(^5\) In our case, around 9 years later, cutaneous metastases appeared in the abdominal wall.

The distribution of skin metastases, although unpredictable, is related to both the anatomic site of the primary tumor and the mode of spread. The areas of greatest predilection in men are the head, neck, anterior chest and the abdomen, whereas in women, the anterior chest and abdomen appear to be the most common sites for skin metastases.\(^4\)

Breast carcinoma shows eight distinct clinicopathological types of metastatic skin involvement.\(^1,7\) A zosteriform arrangement of metastatic breast carcinoma has been rarely reported.\(^1,2,7,8\) Kikuchi et al., reviewed 18 cases of zosteriform skin metastases. They analyzed the clinicopathological characteristics of the lesions.\(^2\) They concluded that in approximately half of patients, the metastatic skin cancer developed on the nearest skin covering and on the same side of the primary tumor. Nonetheless, some zosteriform skin metastases developed on the opposite side of the body, or an area distant from the primary carcinoma.\(^5\)

The mechanism of zosteriform distribution often remains unknown, however, proposed theories include lymphatic spread, koebnerization at the site of previous zoster infection, surgical implantation of tumor cells and neural spread via the dorsal ganglia.\(^8\) Clinically, metastases localized in proximity of the underlying internal carcinoma suggest spread to the skin through lymphatic channels.\(^5\) S-100 staining of the biopsy reveals perineural invasion, and endothelial markers—particularly factor VIII. It was also showed dilated vessels in the dermis, some of which contained malignant cells, suggesting that the distribution was related to intravascular or lymphatic spread.\(^5\) In current case, we could not do immunohistochemical staining studies. Nevertheless, based on our clinical observations we believe that the zosteriform distribution was due to lymphatic spread.

In summary, the diagnosis of metastatic carcinoma should be considered in any patient with a previous history of internal malignancy and zosteriform skin eruption. The clinical appearance frequently makes the correct diagnosis difficult and a skin biopsy is necessary to confirm the diagnosis.

References

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