

# Zosteriform cutaneous metastases: A case report and brief review of literature

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## ABSTRACT

A 56-year-old woman presented with painful erythematous, papulo-nodular lesions on the left side of the trunk in a dermatomal distribution of two-weeks duration. She had earlier undergone surgery for breast carcinoma and was receiving palliative chemo-radiotherapy, when seen by us. A diagnosis of zosteriform cutaneous metastases was made and biopsy was done from the representative lesion which showed chords and sheets of malignant cells. Majority of these cases in the past have been misdiagnosed as herpes zoster and were treated with antiviral drugs. Metastatic diseases should be considered in the differential diagnosis of zosteriform rash in elderly.

**Key words:** Breast carcinoma, differential diagnosis, zosteriform cutaneous metastases

## INTRODUCTION

Certain skin disorders have a propensity to develop lesions in a linear or zosteriform fashion. This includes conditions such as lichen striatus, lichen planus, psoriasis, epidermal verrucous nevus, Darier's disease, porokeratosis and morphea.<sup>[1,2]</sup> Cutaneous metastases can rarely present with such morphological pattern; less than 30 cases of zosteriform cutaneous metastases due to internal malignancies have been described in the English literature.<sup>[3]</sup> Here, we describe an immunocompromised woman who presented with lesions along the dermatome; she was misdiagnosed initially as a case of herpes zoster.

## CASE REPORT

A 56-year-old woman was referred from the oncology services of the hospital for the management of unilateral rash on the back of two weeks duration. The rash had started initially over the left side of chest and gradually progressed to the left scapular region. This was associated with dragging pain and itching. Eight months back she was diagnosed with adenocarcinoma of left breast (stage IV) with vertebral metastases, and was treated with modified radical mastectomy. Post-operatively, she received palliative chemotherapy and

radiotherapy. There was no history of herpes zoster in the past. Cutaneous examination revealed multiple erythematous firm papulo-nodular lesions arranged in a dermatomal fashion along the T-4 segment, extending from left mammary region to the left scapular region [Figure 1]. Right breast and right side of the trunk were normal. Her routine hemogram showed low hemoglobin (9.4 gm/dl); other hematological and biochemical parameters were within normal limits. Biopsy of the representative lesion showed chords and sheets of malignant cells and atypical mitotic figures surrounded by desmoplastic stroma, entrapping dermal appendages. Few malignant cells were also seen within the lymphatics as 'lymphatic emboli' [Figures 2 and 3].

## DISCUSSION

Metastatic skin cancer is a relatively rare complication of internal malignancies. It has been reported to occur in 0.7-9% of patients with internal malignancies.<sup>[4-8]</sup> The clinical features of metastatic skin cancer vary enormously. The most common clinical appearance is that of multiple nodules; less common forms include inflammatory or erysipeloid form, sclerodermoid form, alopecia neoplastica, or bullous form.<sup>[9-10]</sup> Zosteriform pattern is very rare type of cutaneous

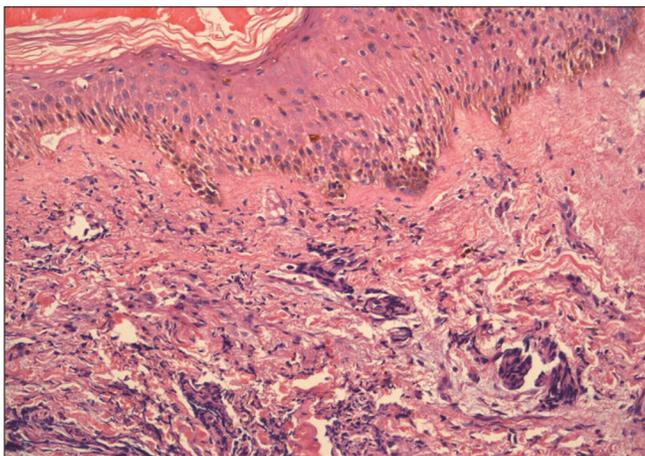
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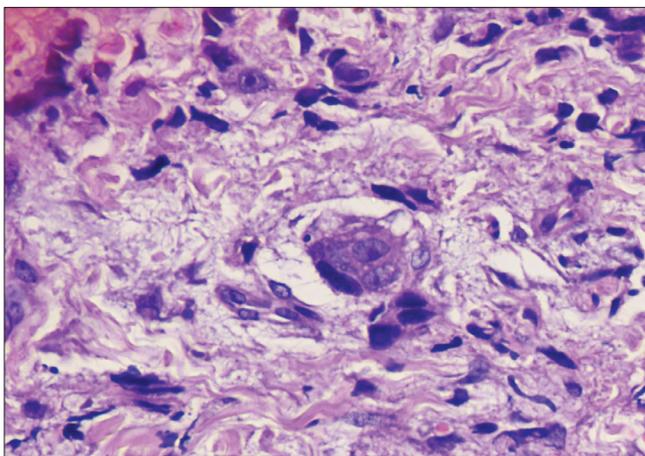
metastases with only few reported cases.<sup>[4]</sup> Many of the dermatomal metastases have been initially



**Figure 1: Erythematous papules and nodules on the back in a dermatomal distribution**



**Figure 2: Photomicrograph showing chords and sheets of malignant cells in the dermis surrounded by desmoplastic stroma (H&E, x100)**



**Figure 3: Photomicrograph showing malignant cells within the lymphatics as 'lymphatic emboli' (H&E, x400)**

diagnosed as herpes zoster which is a common finding in immunocompromised oncology patients. Spontaneous pain mimicking herpes zoster has been observed in many patients with zosteriform metastases with many of them initially having been treated with antiviral drugs.<sup>[11,12]</sup> Though it usually follows the diagnosis of malignancy, zosteriform metastases have preceded documentation of primary tumor in minority of patients.<sup>[13]</sup> Primary skin cancers such as malignant melanoma and squamous cell carcinomas as well as lymphoreticular malignancies may occasionally have zosteriform morphology.<sup>[14-16]</sup> Excluding these, zosteriform pattern of metastases were usually seen in carcinomas originating from the breast, ovary and lung [Table 1]. According to a previous report, adenocarcinomas were the commonest histopathological pattern followed by transitional carcinoma.<sup>[4]</sup> Generally, the histological features of the metastases are similar to the primary tumor, although metastases may be more anaplastic and exhibit less differentiation.<sup>[17]</sup> The distribution of such metastases while variable appears to be related to both their mode of spread and the location of the primary tumor. In more than 50% of cases, metastatic skin cancer developed on the same side as that of primary cancer; occasionally it was seen on the opposite side or at a distant site. This evidence may be useful when trying to pinpoint the location of the primary tumor.<sup>[4]</sup> The chest wall was the common site of metastases especially when the primary cancer was in the lung or breast. The exact mechanism of zosteriform metastases is still speculative. It has been reported that it might be due to: a) Koebner-like reaction at the site of prior herpes zoster infection ('locus minoris resistentiae'-site of lessened resistance); b) Perineural lymphatic spread; c) spread via fenestrated vessels of the dorsal root ganglion; d) Accidental surgical implantation.<sup>[9,12]</sup>

Cutaneous metastases have been reported in 18.6-26.5% of patients with breast cancers. Though it is

**Table 1: Underlying malignancies**

Adenocarcinoma
Breast
Ovary
Lungs
Prostate
Ureter
Colon
Rectum
Transitional cell carcinoma- Kidney and Urinary bladder

usually seen in the advanced diseases, sometimes it may be the presenting sign of an underlying malignancy.<sup>[8]</sup> The molecular mechanism of tumor metastases is incompletely understood. The tumor needs to detach from the primary tumor, invade and circulate in the blood or lymphatics, extravasate and finally survive and proliferate at the secondary site.<sup>[18]</sup> Because the cutaneous adnexa and lactiferous ducts (from which most breast cancers originate) have the same embryonic origin, i.e., ectoderm, the dermis may provide a favourable environment for the survival and colonization of metastatic breast carcinoma. This may explain higher rate of skin metastases of breast adenocarcinoma compared with adenocarcinoma of other sites (which originate from the endoderm).<sup>[19]</sup> Cutaneous metastases especially from adenocarcinoma of breast are considered as a bad prognostic sign with a survival period of only three months.<sup>[20]</sup> This case highlights the importance of including cutaneous metastases in the differential diagnosis of patients with non-healing herpes zoster-like lesions, especially in those with underlying neoplasm.

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