Eosinophilic fasciitis and breast cancer: a case report highlighting recurrence signals

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Abstract

Eosinophilic fasciitis (EF) poses a diagnostic challenge owing to its uncommon occurrence and aetiology that remains poorly understood. We report a case of a 79-year-old woman with a prolonged history of breast cancer exhibiting EF with concomitant pelvic metastases. This case underscores EF's potential as an indicator signaling a potential resurgence of cancer, highlighting its significance as a red flag of disease recurrence.

Introduction

Eosinophilic Fasciitis, also known as Shulman disease, stands as a rare sclerotic affliction affecting muscular fasciae. Despite its clinical significance, the etiology remains elusive, and the pathogenesis remains a subject of limited comprehension. This enigmatic disorder has been observed in correlation with an array of conditions, encompassing hematologic disorders, solid neoplasms, autoimmune diseases, drugs, and infections.[1]

Case Report

We present a case of a 79-year-old woman with a bothersome, itchy skin rash and distinctive symptoms in her left leg: erythema, edema, and a *"peau d'orange"* texture. Despite no signs of infection (Figure 1a), she had a history of breast cancer spanning 19 years. Her treatment initially involved an aromatase inhibitor, then capecitabine, which was stopped due to hand-foot syndrome. Following this, she noticed leg edema and subsequent sclerosis. Over three months, her eosinophil count rose (from 0.51/mm3 to 1.3/mm3), whit platelet count at 438000/mm3. An echocolor-doppler scan ruled out thrombosis. A skin biopsy of the left leg revealed hyperkeratotic epidermis, dermal fibrosis, and eosinophilia, accompanied by small subcutaneous fat lobules enclosed by thickened fibrous septa. The perivascular inflammatory infiltrate was formed by lymphocytes, plasma cells, and abundant eosinophils (Figure 2 a-c). These findings strongly suggested eosinophilic fasciitis (EF) rather than a drug-related reaction, considering the timeline between drug cessation and lesion onset, leading to a diagnosis of paraneoplastic eosinophilic fasciitis. She underwent a 40-day prednisone treatment, beginning at 0.75 mg/kg/day and gradually tapered every 6 to 10 days. Within a month of therapy, her skin lesions completely resolved, accompanied by a notable decrease in eosinophil count (0.06/mm3) based on blood tests. Three months later, eosinophilic fasciitis reappeared in the lower third of the left leg, confirmed by histopathological examination (Figure 1b). During an oncology check-up, the patient was diagnosed with pelvic metastasis, lead-

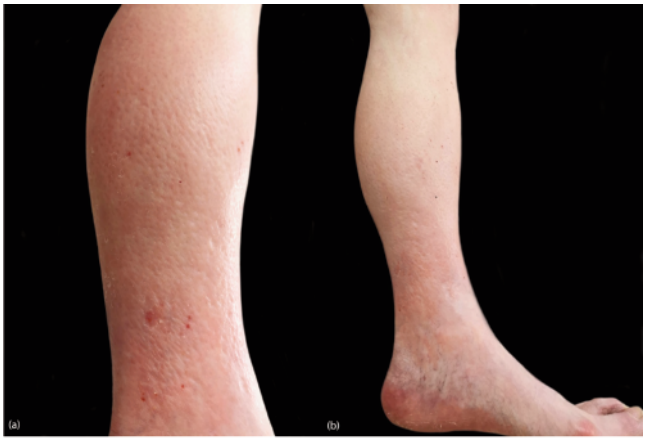

Figure 1. a) Erythema, edema, and a "peau d'orange" texture on the left leg; **b**) recurrence of EF in the lower third of the left leg.

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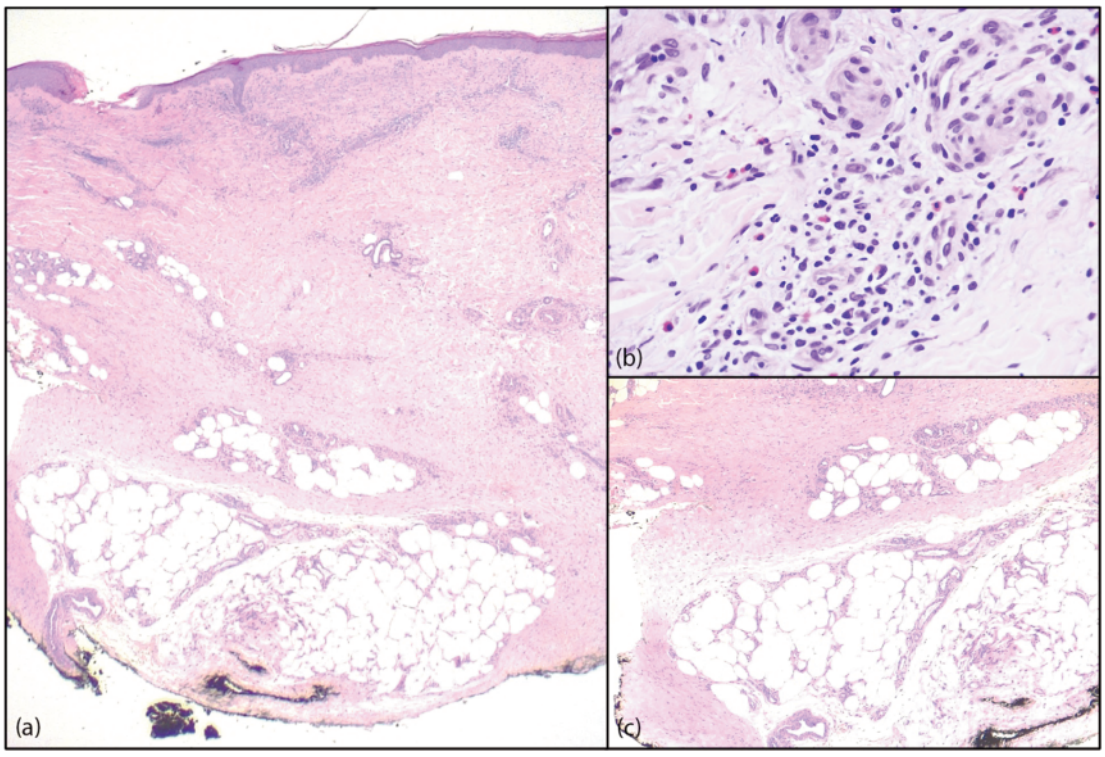

Figure 2. a) Skin biopsy of eosinophilic fasciitis (H&E, 5x); **b)** The perivascular inflammatory infiltrate includes lymphocytes, plasma cells and numerous eosinophils (H&E, 20x); **c)** Histopathology displaying hyperkeratotic epidermis, fibrosis and eosinophilia of the reticular dermis, while the subcutaneous fat lobules appear diminished in size and are encased by thickened fibrous septa (H&E, 10x).

ing to the commencement of doxorubicin and vinorelbine combined therapy. Simultaneously, she received a 30-day course of oral prednisone at 0.75 mg/kg/day, gradually tapered, swiftly achieving remission of the skin lesions. At the 6-month follow-up, no further recurrences were noted, and there was no sign of disease progression.

Discussion and Conclusions

EF is a rare syndrome of unknown aetiology that causes scleroderma-like symptoms, characterized by skin and deeper perimuscular fascial plane induration associated with peripheral eosinophilia.

Various hematologic disorders, both benign and malignant, as well as drug-associated conditions, have been correlated with EF.[2,3] Non-hematological malignancies such as melanoma, non-melanoma skin cancer, breast, lung, thyroid, prostate, gastrointestinal, and ovarian cancer have been associated with eosinophilic fasciitis.[4]

According to Curth's postulates, based on a collection of clinical criteria used to assess the link between an underlying malignancy and dermatological conditions, EF may act as a paraneoplastic syndrome.[5] Frequently, paraneoplastic EF displays resistance to immunosuppressive treatments, including corticosteroids, while showing responsiveness to therapies targeting the underlying malignancy.[6]

Merely three instances of eosinophilic fasciitis in conjunction with breast cancer have been documented, where the onset of fasciitis closely preceded or followed the carcinoma diagnosis.[2,4] Our case is in agreement with the literature.

In our case, the first episode of EF could be attributed to a paraneoplastic manifestation of recurrent underlying neoplastic pathology. The most intriguing aspect of our case is that the recurrence of EF coincided with the detection of metastatic secondary lesions, confirming the causal relationship even in cases of metastasis. Our findings conclude that EF indicates a possible recurrence of neoplastic growth and should be considered a potential red flag. This underscores the importance of a dermatological evaluation in patients with EF and a concurrent history of neoplasia.

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