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Atypical presentation of psoriasis on the breast of an elderly woman: A case report

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Abstract

Psoriasis is a chronic, inflammatory skin disease that affects over 60 million adults and children globally. It is classically characterized by pink plaques covered with silver scales on the extensor surfaces, trunk, or scalp. In this report, we describe the case of a woman in her late 60s with psoriasis presenting as a painful plaque on her left breast. This case highlights the importance of considering psoriasis as a differential diagnosis in patients with unilateral breast plaques, even in the absence of typical psoriasis scaling elsewhere on the body.

Keywords

Dermatology, scaly plaques, psoriasis, inverse psoriasis, risankizumab women's health

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Introduction

Psoriasis is a chronic inflammatory disease with an incidence of 2%–3% and characteristically presents as well demarcated, erythematous, hyperkeratotic, scaly plaques, usually on extensor surfaces on the upper and lower extremities, scalp, trunk, and intergluteal cleft.[1] Inverse psoriasis, manifesting as well-defined erythematous plaques devoid of the characteristic silvery scale of classic psoriasis, usually occur in body folds in the inframammary or groin locations.[2] Psoriasis occurring unilaterally only on the nipple-areola complex is rarely documented in the literature. It can present as well-demarcated, erythematous plaques with fine micaceous scales located on the nipple or areola.

Case report

A woman in her late 60s with hyperlipidemia, presented with 3 years of a unilateral, large, very painful, scaly, erythematous, ulcerative plaque on her left breast (Figure 1). She denied nipple drainage or a history of unexplained weight loss. Her left breast was much warmer to the touch than her right breast. A previous 3D mammogram and radiograph were normal. She had been treated with multiple topical and systemic antibiotics, topical steroids, and topical antifungals in the past with no improvement. No similar plaques were found elsewhere on complete cutaneous examination. She denied a family history of known autoimmune diseases or malignancies. Two shave and punch biopsies of the lateral nipple and upper lateral breast were obtained for histopathological examination.

The histopathological analysis of the lateral nipple of the left breast revealed confluent mounds of parakeratosis, psoriasiform epidermal hyperplasia with dilated tortuous blood vessels present at the tips of dermal papillae, and superficial perivascular mixed inflammatory cell infiltrate. The left upper breast displayed an epidermis with mounds of scale-crust that contained neutrophils and spongiotic psoriasiform hyperplasia with an associated superficial perivascular predominantly lymphocytic infiltrate (Figure 2). Cytokeratin-7 and E-cadherin stains were also negative.

Histopathological examination findings were consistent with psoriasis. Following an initial loading dose of

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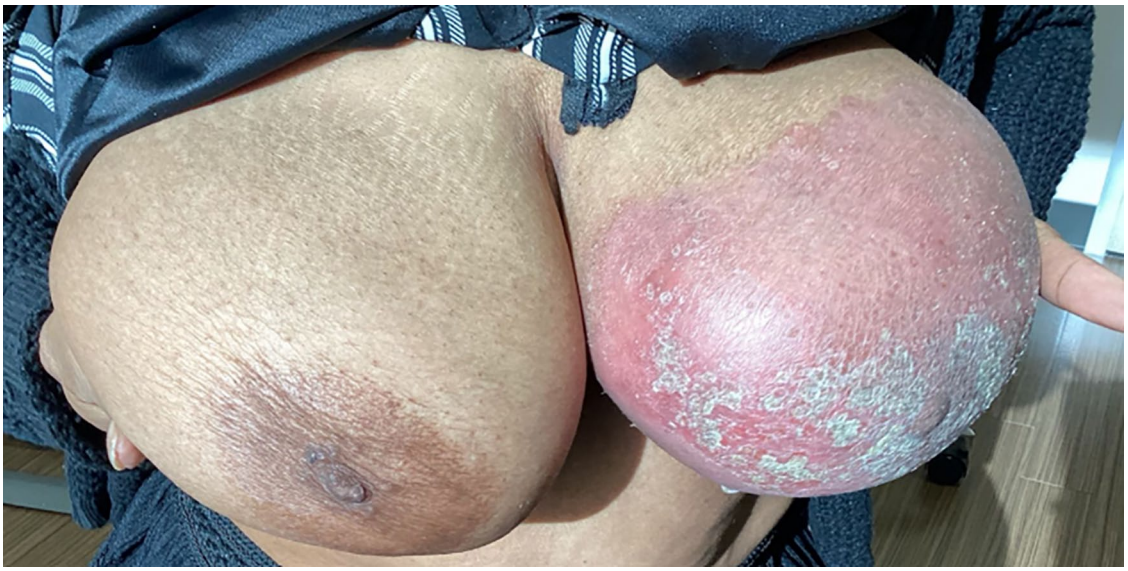

Figure 1. Psoriasis. Scaly, erythematous, ulcerative plaque on the left breast of an elderly woman prior to treatment.

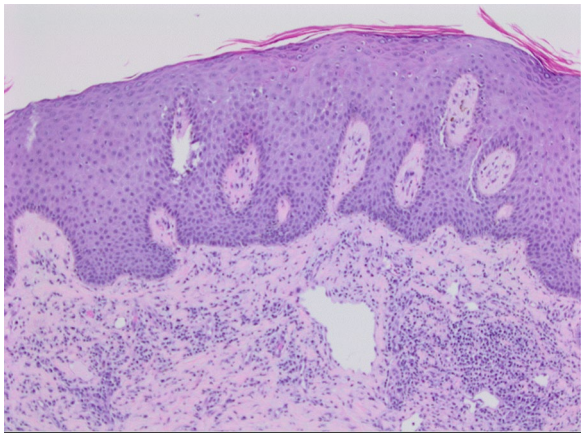

Figure 2. Psoriasis. Histopathology of the lateral nipple line of the left breast with hematoxylin and eosin staining. Parakeratosis, psoriasiform epidermal hyperplasia with dilated tortuous blood vessels, and a perivascular inflammatory cell infiltrate are present.

risankizumab 150 mg subcutaneously, the patient returned after 1 month with only residual hyperpigmentation and no symptoms (Figure 3). She continues to receive risankizumab 150 mg each quarter without recurrence.

Discussion

Psoriasis is an immune-mediated, inflammatory skin disease associated with genetic factors and pathogenic autoimmune traits.[2–4] Although it typically involves the skin, it can also affect other organs as a systemic disease, causing conditions such as psoriatic arthritis.[2] Psoriasis can also be triggered by multiple environmental factors, such as skin trauma, infections, smoking, medications, and stress.[3] Patients with psoriasis are also more likely to suffer from hyperlipidemia, type 2 diabetes, hypertension, coronary artery disease, and increased body mass index.[2,3] There are multiple subtypes of cutaneous psoriasis, including plaque, inverse, erythrodermic, pustular, and guttate psoriasis.[5,6] These can vary in severity, presentation, and location of the lesion, and can also affect different age groups, with guttate psoriasis being more common in children and adolescents, for example.[5]

The pathogenesis of psoriasis is not fully understood but involves overactivity of the adaptive immune system and proinflammatory cytokines.[1,2] The disease can usually be diagnosed based on the patient's history and the morphology of the lesions; however, a skin biopsy may be needed in atypical presentations as in this case.[1,4] The histopathology of psoriasis is characterized by epidermal hyperplasia with inflammatory infiltrates of dermal dendritic cells, macrophages, T cells, and neutrophils.[2,6] This is due to sustained inflammation resulting in excessive keratinocyte proliferation.[2,3]

First-line treatment of psoriasis involves the use of topical agents such as corticosteroids, calcineurin inhibitors, keratolytics, and vitamin D analogs.[1,7,8] Second-line treatment in more severe cases includes phototherapy and systemic agents such as methotrexate, ciclosporin, or acitretin.[1,7,8] Finally, a wide variety of biologic agents have also been approved for psoriasis, including risankizumab, an IL-23 p19 inhibitor which was successfully used in this case.[1,7] These agents are usually recombinant monoclonal antibodies or receptor fusion proteins that

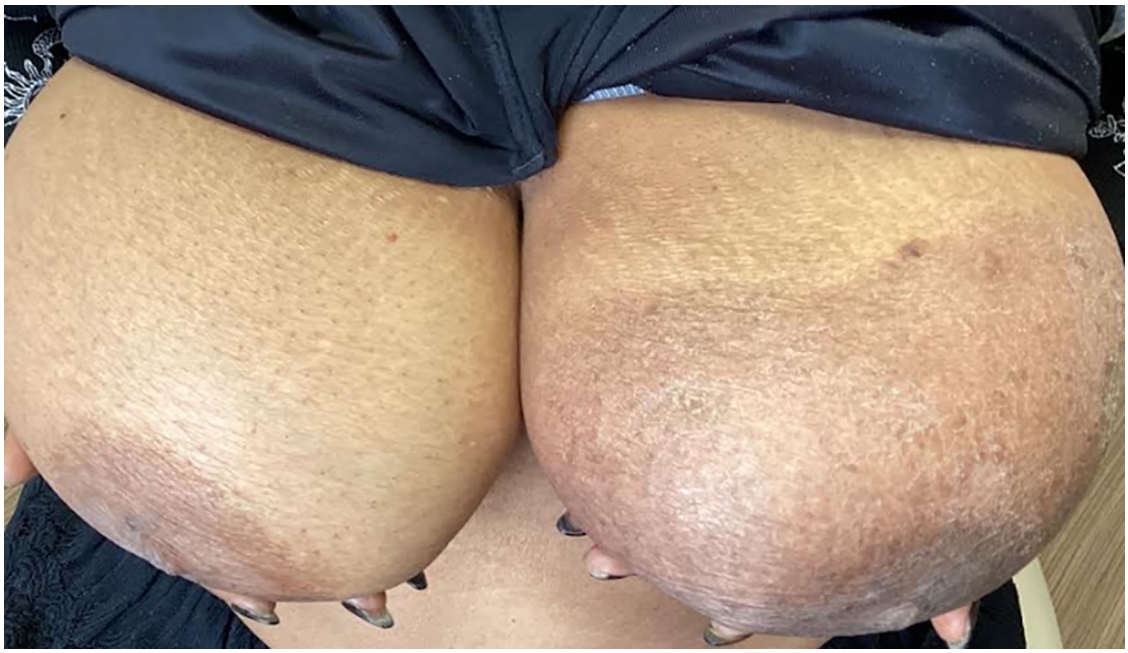

Figure 3. Psoriasis. Marked improvement after 1 month following loading dose of risankizumab.

target proinflammatory cytokines and typically need to be administered subcutaneously or intravenously on a regular basis.[1,7]

Unilateral, isolated psoriasis of the breast is rarely reported in literature. When psoriasis manifests as an atypical plaque on the breast and does not respond to topical corticosteroids, as in this case, it is important to differentiate it from neoplastic diseases of the breast. In this patient with a negative screening for breast cancer and histology confirming psoriasis, although some characteristics of her case, such as unilateral involvement of a painful plaque, negative family history, lack of response to topical steroids, and her age, are alarming, they are not unheard of. Furthermore, her positive response to risankizumab supports a diagnosis of psoriasis, as there are no reports of other dermatoses, such as Paget's disease, responding to the agent. In 2019, there were few reported cases in the literature of psoriasis affecting the nipple and/or areola following breastfeeding, radiotherapy (Koebner Phenomenon), dabrafenib treatment, and in the setting of lymphedema following quadrantectomy and radiotherapy.[9,10] Saritas et al. noted a case of psoriasis of the nipple-areola complex in a 31-year-old female that manifested as a plaque of 3 years (unresponsive to dapsone, topical and systemic corticosteroids, oral and topical antibiotics, and antihistamines) that responded to topical tacrolimus.[10]

Conclusion

In this report, we describe the case of a patient presenting with painful lesions that were restricted to one breast. She lacked typical psoriasis scaling and did not respond to topical steroids or systemic antibiotics, mimicking the presentation of mastitis, Paget's disease of the breast, or inflammatory breast cancer. Interestingly, after a single dose of risankizumab, the patient reported only residual hyperpigmentation on her breast and no further symptoms.

Author contributions

S.A. contributed to the writing of the manuscript. M.R.T. contributed to the writing of the manuscript. A.B.P. edited the manuscript, conducted the microscopic analysis and provided the photomicrograph. S.K.T. edited the manuscript and provided the patient history and images.

Declaration of conflicting interests

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Ethics approval

Our institution does not require ethical approval for reporting individual cases or case series.

Informed consent

Written informed consent was obtained from the patient(s) for their anonymized information to be published in this article.

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