Case Report

Isotretinoin-induced dermographism and urticaria: A rare cutaneous hypersensitivity reaction

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ABSTRACT

Isotretinoin is a systemic retinoid extensively used for intense pimples, with not unusual, place-damaging results like mucocutaneous dryness being well-documented. This record highlights an extraordinary case of isotretinoin-triggered dermographism and urticaria. A 27-year-old girl on 20 mg/day of oral isotretinoin for intense pimples developed chronic pruritus, linear erythematous streaks, and urticarial plaques on her lower limbs after 4 weeks. With no records of allergies, a likely damaging drug response became recognized through the usage of the Naranjo evaluation tool. Isotretinoin was discontinued, and the affected person was treated with oral bilastine and tapered methylprednisolone, attaining complete healing within 10 days. This case underscores the significance of spotting odd cutaneous reactions to isotretinoin to ensure the protection of affected person and beautify pharmacovigilance.

Key words: Acne therapy, Cutaneous drug reaction, Isotretinoin, Linear dermatitis, Urticaria

Isotretinoin, a systemic retinoid derived from Vitamin A, remains the cornerstone in the control of extreme nodulocystic zits and zits unresponsive to traditional therapies. Its pharmacological efficacy is attributed to its multi-faceted mechanisms, which consist of the suppression of sebaceous gland activity, inhibition of Cutibacterium acnes proliferation, normalization of follicular keratinization, and modulation of inflammatory cytokine expression [1]. These residences have made isotretinoin one of the best sellers in reaching long-term remission in acne patients [2]. Despite its set-up healing benefits, isotretinoin is related to a number of unfavorable effects. Commonly found reactions consist of mucocutaneous dryness, cheilitis, xerosis, epistaxis, and photosensitivity [3]. These are generally slight and nicely tolerated by most patients. However, there may be a developing body of literature describing uncommon and doubtlessly immune-mediated cutaneous adverse drug reactions (ADRs), such as urticaria, constant drug eruptions, and vasculitis [4,5]. Such reactions are occasionally pronounced and may pose diagnostic challenges.

In this report, we present an extraordinary case of isotretinoin-prompted dermographism with concurrent urticaria to raise medical consciousness and make contributions to the pharmacovigilance records for this extensively prescribed medication.

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CASE PRESENTATION

A 27-year-old female presented to the dermatology outpatient department with complaints of persistent pruritus and the appearance of unusual skin lesions over her thighs and genital region. She had been diagnosed with severe nodulocystic acne 6 months prior and was initiated on oral isotretinoin therapy at a dose of 20 mg/day (approximately 0.4 mg/kg/day), following an inadequate response to prior topical retinoids and systemic antibiotics. The patient's medical history was unremarkable. She had no known allergies, autoimmune diseases, or prior cutaneous hypersensitivity reactions.

Baseline investigations, including complete blood count, liver function tests, renal profile, and lipid panel, were all within normal limits before initiating isotretinoin. She was not on any concomitant medications and denied any recent infections, vaccinations, or environmental exposures.

Clinical improvement in acne lesions was noted by the 3rd week of isotretinoin therapy, with a marked reduction in inflammatory nodules and facial oiliness. However, around day 20 of treatment, the patient began experiencing persistent itching localized to the scalp, genital area, and perineum. She attributed the symptoms to isotretinoin-induced dryness and initially did not seek medical attention. By day 30, the pruritus intensified and was followed by the development of

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erythematous, non-raised, linear streaks on the posterior thighs and popliteal region, as well as hive-like plaques over the inner thighs and genital area. The lesions were mildly pruritic, non-blanchable, warm to touch, but neither painful nor associated with edema. There was no mucosal involvement, fever, joint pain, or other systemic symptoms.

Clinical photographs documented the sharply demarcated linear erythema on the thighs and popliteal fossae, which resembled a drug-induced hypersensitivity pattern (Fig. 1).

Initially, the patient self-administered cetirizine 10 mg, which provided transient relief. However, symptoms recurred within 24 h of each dose, prompting repeated unsupervised antihistamine use. Worsening skin manifestations and increased discomfort led her to report to the dermatology clinic. A provisional diagnosis of isotretinoin-induced cutaneous hypersensitivity reaction, presenting as dermographism with coexisting urticarial lesions, was made based on the clinical presentation, symptom chronology, and resolution pattern. Differential diagnoses considered included pressure urticaria, contact dermatitis, and fixed drug eruption, all of which were excluded based on lesion morphology, anatomical distribution, and absence of triggering exposures.

Isotretinoin was immediately discontinued. The patient was managed with bilastine 20 mg once daily (non-sedating antihistamine) for 10 days, oral methylprednisolone 16 mg/day, tapered over 5 days, and ceramide-based topical emollient (Dermadew lotion) applied twice daily to affected areas. Within 10 days of therapy initiation, the patient experienced complete resolution of pruritus and skin lesions. No recurrence was noted during a 4-week follow-up period. Given the temporal relationship between drug exposure and lesion onset, positive dechallenge, and absence of other causes, the Naranjo ADR Probability Score was calculated to be 7, indicating a probable ADR [6]. The patient was not rechallenged with isotretinoin due to the severity of the reaction and patient preference. Alternate acne management options, including hormonal therapy and light-based modalities, were discussed for future treatment planning.

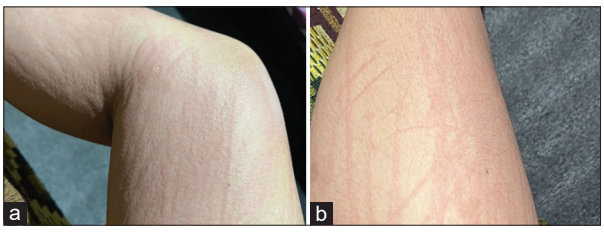

Figure 1: (a) Linear, erythematous, non-raised streaks seen on the posterior thigh and popliteal region on day 30 of isotretinoin therapy. Lesions were non-blanchable, mildly pruritic, and showed hive-like morphology suggestive of drug-induced hypersensitivity; (b) closer view of the popliteal fossa displaying sharply demarcated linear erythema without epidermal scaling, consistent with linear dermatitis pattern

DISCUSSION

Isotretinoin remains the best systemic agent for the control of intense nodulocystic pimples due to its capacity to noticeably lessen sebaceous gland activity, normalize follicular keratinization, inhibit Cutibacterium acnes proliferation, and modulate inflammatory responses [7]. While mucocutaneous dryness and photosensitivity are well-identified side effects, uncommon allergic reactions, which include urticaria and drug eruptions, have additionally been reported, although infrequently [4]. The gift case describes an unprecedented and clinically different cutaneous allergic reaction response to isotretinoin, characterized by dermographism and urticarial plaques.

Hypersensitivity reactions related to isotretinoin are believed to be idiosyncratic and might contain complicated immunological mechanisms. These encompass disruption of the epidermal barrier, alteration of antigen presentation pathways, activation of T lymphocytes, and potential institutions with particular human leukocyte antigen genotypes [8]. Moreover, the immune dysregulation caused using isotretinoin can also predispose genetically prone people to exaggerated cutaneous responses on exposure to environmental stimuli or mechanical stress [9].

The linear configuration of lesions determined on this affected person is a function of dermographism, additionally referred to as dermatographic urticaria, which actually means “writing on the pores and skin.” It is the maximum, not unusual, place shape of inducible urticaria, wherein strain or stroking of the pores and skin produces a linear wheal in the form of the applied force. This presentation, triggered with the aid of using mechanical elements, which include strain or friction, aligns with the affected person’s lesions at the posterior thighs and popliteal region [10].

Differential diagnoses, along with touch dermatitis and glued drug eruption, have been taken into consideration; however, they are excluded primarily based on scientific records and lesion morphology. The recurrence of signs after the untimely cessation of antihistamines, observed with the aid of using the whole decision to put up drug withdrawal, strongly supports causality. This addition showed the usage of the Naranjo ADR Probability Scale [6]. Regarding control, it is worth noting that at the same time as a brief route of systemic corticosteroids becomes powerful in this case, fashionable remedy protocols for straightforward acute urticaria prioritize second-generation H1 antihistamines as first-line therapy. Systemic corticosteroids are normally reserved for intense or refractory cases, mainly people with angioedema or extensive systemic signs.

To date, just a few case reviews within the literature have defined urticaria or dermographism secondary to isotretinoin [11]. This case contributes to the developing expertise of isotretinoin’s broader damaging occasion profile and highlights the significance of clinician

vigilance in determining unusual presentations. Early recognition, well-timed drug discontinuation, and symptomatic remedy can extensively enhance patient outcomes. To date, only a few case reports in the literature have described urticaria or dermographism secondary to isotretinoin [12]. This case contributes to the growing understanding of isotretinoin's broader adverse event profile and highlights the importance of clinician vigilance in identifying uncommon presentations. Early recognition, timely drug discontinuation, and symptomatic treatment can significantly improve patient outcomes.

CONCLUSION

This example illustrates an uncommon way that isotretinoin-induced hypersensitivity can show up as dermographism and urticarial plaques. The Naranjo causality assessment confirms the diagnosis of an immune-mediated reaction, which is supported by the temporal link between drug commencement and symptom development as well as remission after termination. During isotretinoin medication, clinicians should be on the lookout for uncommon and unusual cutaneous adverse drug responses. To manage such responses, early detection, accurate diagnosis, and prompt intervention are critical. In addition, documenting these occurrences is necessary to improve pharmacovigilance and guarantee safer therapeutic practice.

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