

Images in Allergy

Severe Topical Corticosteroid Withdrawal Syndrome from Over-the-Counter Steroids

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A 34-year-old man suddenly developed an erythematous and exfoliative facial rash. Within days, his skin became intensely pruritic and painful, and the rash spread to his entire body. He also acquired malaise with fever of 39.7°C, necessitating hospitalization. Examination revealed thickened and oozing plaques covering his face; in addition, multiple erythematous papules erupted on his torso and bilateral extremities, but no mucosal erosions (Figure 1). His history was notable for lifelong atopic dermatitis self-treated with hydrocortisone ointment/cream 1% (up to 2.5%) multiple times daily, with use of class III potency topical corticosteroids (TCS) intermittently for flares. He was receiving no other medications but had abruptly switched from hydrocortisone to crisaborole 1 week before presentation.

With over 90% body surface involvement along with fever, the erythrodermic rash was concerning for systemic syndromes such as Stevens-Johnson syndrome/toxic epidermal necrolysis, drug rash with eosinophilia and systemic symptoms, or toxic shock syndrome. The lack of mucosal involvement, lymphadenopathy, organ involvement, and normal complete blood count and erythrocyte sedimentation rate ruled out these diagnoses. In patients with underlying eczematous skin conditions who are receiving chronic TCS, TCS withdrawal syndrome is a rare diagnosis that should be considered. A comprehensive review sponsored by the National Eczema Association on TCS withdrawal found that common symptoms and signs include erythema, burning, stinging, pruritus, and exacerbation with heat or sun.¹ Erythema can occur within 24 hours to a few weeks after cessation of TCS and often develops from the original area of eczema, but then extends beyond areas where TCS were chronically applied, often spreading from the face to the neck, trunk, and extremities.

Two skin rashes have been described: papulopustular and erythematodematous.¹ Patients with the erythematodematous type often have underlying eczematous disorders and commonly have erythema with desquamation and swelling of skin.

Common histologic findings include thinned epidermis, spongiosis, a thin or absent granular layer, sparse perivascular infiltrates, and dilated vessels in the dermis.¹ The papulopustular type most often occurs with overused TCS for cosmesis or acneiform skin disorders. Histologically, the papulopustular subtype resembles findings seen in rosacea.¹ Although no biopsy was obtained, this patient was given the diagnosis of TCS withdrawal of the erythematodematous subtype based on clinical findings. Fever and rash resolved shortly after the initiation of systemic corticosteroids. His condition was controlled with dupilumab and crisaborole, which suggests against hypersensitivity to the latter since dupilumab does not block patch testing in the evaluation of allergic contact dermatitis; in addition, when crisaborole continued to be applied without dupilumab, dermatitis was absent.²

Topical corticosteroid withdrawal is an evolving diagnosis; clinicians treating topical steroid-responsive dermatoses should be aware of it. Most often, it is associated with mid-to high-potency TCS; however, we report a rare case of TCS withdrawal that occurred with the least potent class VII hydrocortisone preparations. Recognizing TCS withdrawal can be challenging given a lack of diagnostic criteria. It can easily be mistaken for systemic syndromes such as Stevens-Johnson syndrome/toxic epidermal necrolysis, drug rash with eosinophilia and systemic symptoms, or toxic shock syndrome. More research is needed to identify risk factors as well as the frequency and duration of TCS use that predispose to this condition.

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FIGURE 1. Clinical progression. (A) Initial rash appearance with scattered erythematous patches on usual areas of the patient's atopic dermatitis. (B) Erythematous patches spread farther down to the front chest after a few days. (C) One week after presentation, a diffuse bright red rash appeared throughout the body. (D) Close-up of rash showing confluent erythematous edematous plaques with crusting and oozing.