

BRIEF REPORT

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Allergic Contact Dermatitis to Benzoyl Peroxide Resembling Impetigo

Abstract: A 17-year-old boy presented with recurring severe dermatitis of the face of 5-months duration that resembled impetigo. He had been treated with several courses of antibiotics without improvement. Biopsy showed changes consistent with allergic contact dermatitis and patch testing later revealed sensitization to benzoyl peroxide, which the patient had been using for the treatment of acne vulgaris.

Benzoyl peroxide is a commonly used topical agent for acne vulgaris, widely available without prescription, sometimes in combination with other medications (1). It is also used in the treatment of leg ulcers, orthopedic and dental surgery, and the chemical industry. Contact sensitization to benzoyl peroxide may occur in up to 2.5% of patients (1) and can present with highly variable morphologies.

CASE REPORT

A 17-year-old Caucasian boy with a history of acne vulgaris presented to our practice for exacerbation of an undiagnosed severe dermatitis of 5-months duration. He had weeping, honey-colored crusted plaques over the forehead and upper cutaneous lip and multiple crusted papules over the chin (Fig. 1A, B). Dozens of comedones, inflammatory papules, and pustules were scattered over his face, upper back, and upper chest. He complained of severe pruritus of the face, neck, torso, arms, and thighs.

Three previous bacterial cultures had demonstrated no growth or normal skin flora. A biopsy specimen from an area of involvement on the left forearm had shown spongiotic dermatitis with eosinophils. It had been suspected that he had an autosensitization reaction related to impetigo. He had been treated with multiple courses of oral and topical antibiotics with no improvement. The dermatitis had resolved with prednisone taper starting at 80 mg/day

but recurred after discontinuation of prednisone. He had also been treated with fluconazole for possible pityrosporum folliculitis and valacyclovir for possible eczema herpeticum, both with no improvement.

On initial presentation to our practice, all topical products were discontinued, given the suspicion of contact dermatitis. A punch biopsy specimen from the forehead was consistent with allergic contact dermatitis (Fig. 2). Desonide 0.05% lotion twice daily was started. After 1 day of treatment and 3 days after discontinuation of all other topical medications, there was marked improvement (Fig. 1C, D). Patch testing using the T.R.U.E. Test (SmartPractice, Phoenix, AZ) showed minimal reaction to quaternium-15 of uncertain significance. Extensive patch testing using a modified North American Contact Dermatitis Research Group series (Chemotechnique, Vellinge, Sweden) showed 1+ reactions to quaternium-15 and benzoyl peroxide. Upon review, the patient realized that exacerbations of the dermatitis had coincided with the use of clindamycin 1.2%/benzoyl peroxide 2.5% gel (Acanya, Valeant Pharmaceuticals North America, Bridgewater, NJ), which did not contain quaternium-15. He has since avoided benzoyl peroxide and his facial dermatitis has not recurred.

DISCUSSION

Allergic contact dermatitis to benzoyl peroxide can have varying clinical manifestations. Although the typical appearance mirrors that of classic allergic contact dermatitis, with edema, erythema, scaling, and pruritus (2,3), nonpruritic vasculitis-like papules and purpura have been described (4). Honey-colored crusting, similar to our case, has been reported in allergic contact dermatitis to diclofenac (5).

If a topical medication is suspected as an allergen, repeat open-application testing may confirm the diagnosis. Otherwise, formal patch testing is indicated. This case demonstrates an atypical presentation of allergic contact dermatitis and the limitations of the T.R.U.E. Test, which did not contain the relevant allergen. In uncertain cases, biopsy, cessation of all nonessential topical products, and more extensive patch testing can help confirm the diagnosis.

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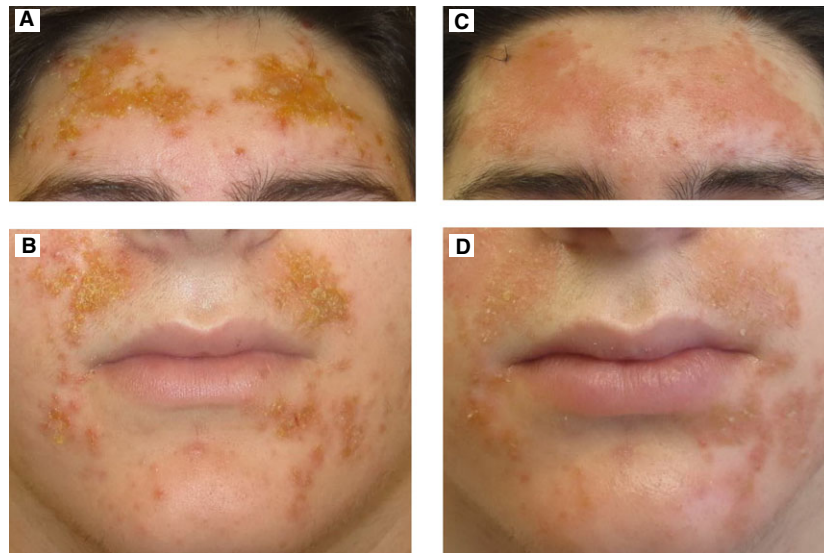


Figure 1. Initial presentation. Coalescing papules with honey-colored crusts over the (A) forehead and (B) upper cutaneous lip and chin. Dozens of open and closed comedones and inflammatory papules and pustules were scattered over the face. (C and D) Marked improvement with near-complete resolution of crusting after 1 day of 0.05% desonide lotion and 3 days after discontinuation of all other topicals.

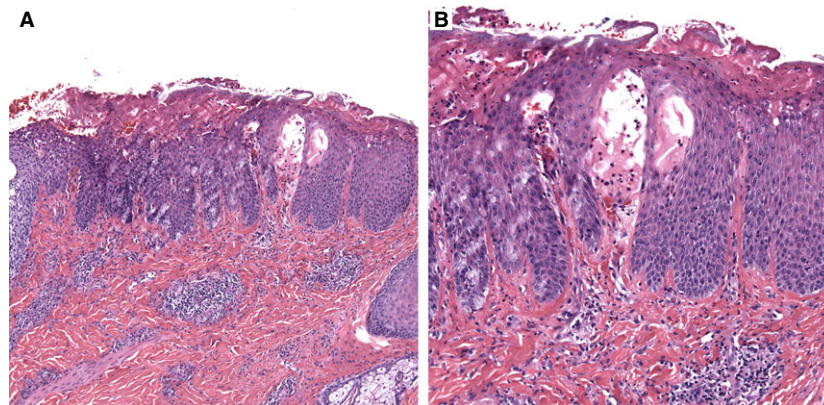


Figure 2. Spongiosis and erosion of the epidermis involving hair-bearing skin. (A) Centrally located erosion with overlying focal scale-crust formation and a moderately dense midreticular and superficial perivascular dermal inflammatory infiltrate (magnification 10 $\times$). (B) Adjoining the erosion are two intraepidermal vesicles separated by a thin layer of compressed keratinocytes (magnification 20 $\times$).

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