

Allergic contact dermatitis from stearyl alcohol in ketoconazole cream

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This vignette illustrates a case of allergic contact dermatitis (ACD) in response to stearyl alcohol in a previously unreported source: ketoconazole cream.

CASE REPORT

A 61-year-old man presented with a 4-year history of worsening pruritic, scaly dermatitis. The rash began on the dorsum of his right foot, which he treated with terbinafine cream for suspected tinea pedis. He

continued to have intermittent foot flares with eventual spread to his left thigh, at which time ketoconazole cream and mupirocin ointment were started. While on these topical medications, his dermatitis spread to his bilateral fingers and volar wrists. Other treatments included mometasone cream and fluocinonide ointment, which offered no improvement. A skin biopsy showed spongiotic dermatitis with eosinophils. He was subsequently referred to our clinic for suspected contact allergy.

Patch testing was performed using the 2019–2020 North American Contact Dermatitis Group (NACDG) standard series, supplemental series (emulsifier, perfumes/flavors, shoe, antibiotics, antifungal) (Chemotechnique Diagnostics, Vellinge, Sweden), and the patient's personal products (ketoconazole cream, mupirocin ointment, fluocinonide ointment, and hand soaps). Allergens were occluded for 2 days and read on day (D)2 and D4. Results on D4 of testing revealed a strong (++) reaction to formaldehyde 2%; mild (+) reactions to linalool, oakmoss, musk ambrette, lichen acid mix, atranorin, methylisothiazolinone, and the patient's NorthStar Rx Ketoconazole 2% cream (NorthStar Rx LLC, Memphis, TN, USA) tested "as is" (Figure 1); and doubtful (+/?) reactions to fragrance mix I, limonene, menthol, majantole, sandalwood oil, cetearyl glucoside, and disperse dye mix. Notably, he had a negative reaction to ketoconazole 5% pet.

Subsequent patch testing to available inactive ingredients in the patient's ketoconazole cream revealed a mild (+) reaction to stearyl alcohol 30% pet. and negative reactions to butylhydroxyanisole, cetyl alcohol, isopropyl myristate, and propylene glycol (both 30% and 100%); all available sorbitan derivatives were tested and negative, including sorbitan sesquioleate, sorbitan olivate, and sorbic acid (poly-sorbate 60, polysorbate 80, and sorbitan monostearate were ingredients but unavailable for testing). Six weeks after discontinuing the

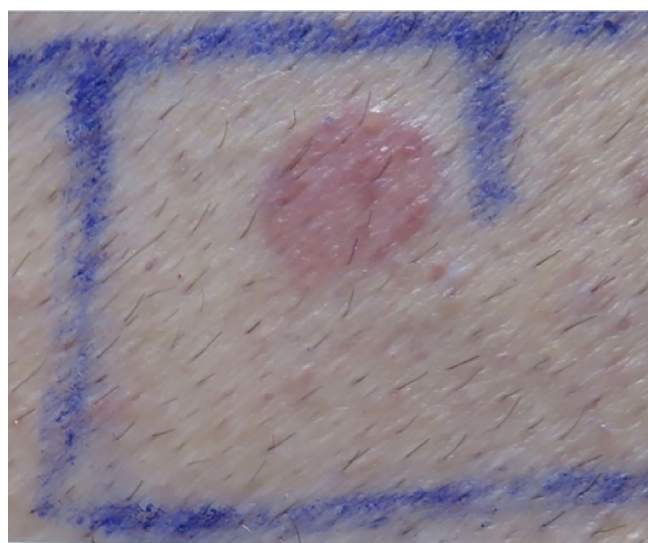


FIGURE 1 Final patch-testing results. Reactions read on day 4 of patch-testing showed a mild (+) reaction to the NorthStar Rx Ketoconazole cream (NorthStar Rx LLC, Memphis, TN, USA) tested "as is"

offending ketoconazole cream, the patient reported continued foot and finger dermatitis.

DISCUSSION

Stearyl alcohol, an aliphatic alcohol with low sensitizing potential, is the vehicle component in many topical applications, including medications and creams.¹ Only a few cases of allergic contact dermatitis (ACD) in response to stearyl alcohol have been reported, including ACD to stearyl alcohol in a 5-fluorouracil and fluocinonide cream.^{1,2} To our knowledge, this is the first report of ACD from stearyl alcohol in ketoconazole cream. Also notable is our patient's negative reaction to cetyl alcohol, which is documented as more sensitizing and a cross-reactor to stearyl alcohol.³

Based on our patient's positive reaction to his ketoconazole cream and stearyl alcohol, negative reactions to other ingredients, and the pattern of dermatitis (foot with spread to the fingers after starting the ketoconazole cream), we believe that the ketoconazole cream was likely contributing to our patient's dermatitis. Although he continued to have dermatitis despite discontinuing the ketoconazole cream, he had multiple sensitizations to other haptens, including fragrance declared in his hand soap, body wash, and laundry detergent as well as methylisothiazolinone found in his shampoo.

This case illustrates a new possible source of ACD in response to stearyl alcohol and the importance of patch testing in patients with spreading/worsening dermatitis after use of topical medications.

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Jenna Ruggiero: Writing-original draft. **Rob Shaver:** Writing-review & editing. **Sara Hylwa:** Supervision; writing-review & editing.

CONFLICTS OF INTEREST

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