

Allergic contact dermatitis to ethylhexylglycerin in a cream

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Patients with multiple contact allergies and chronic relapsing dermatitis are more prone to develop new contact allergies among other factors because of prolonged and repeated topical treatments and perhaps personal predisposition (1, 2). The following case supports this viewpoint.

Case Report

A 64-year-old woman, retired nurse assistant and kindergarten teacher, had had recurrent hand eczema for more than 30 years. She had a previously documented contact allergy to nickel sulfate, potassium dichromate, and cobalt chloride and also had mucosal atopy. For some time because of chronic eczema, she had been treated systemically with prednisolone in short courses and with methotrexate. In recent years, she experienced seasonal variation in dermatitis with summer exacerbation. She had for some time used Vichy Capital Soleil Mexoryl XL 60/16 (Vichy, Asnières-sur-Seine, France) as sunscreen product.

Because of severe aggravation of facial, arm, and hand eczema, she was referred to the department and treated with an alternative topical corticosteroid, and the use of cosmetics was stopped owing to the suspicion of contact allergy to some of her topical remedies. The dermatitis subsided, and she was subsequently patch tested with the standard series supplemented with Compositae allergens and her own topical products. Readings according to International Contact Dermatitis Research Group recommendations at D3 and D7 showed positive reactions (+, +) to her Vichy sunscreen cream and to Compositae mix 6% pet. (+, +?). She had weak positive reactions to the sesquiterpene lactone mix (+?, +?) and parthenolide (+?, -) present in the standard series. Testing with the Compositae mix ingredients showed positive reaction to tansy extract (+?, +?) and fewerfew (+?, +?). Further, she had a weak reaction to a locally manufactured skin care cream, and it was reproducible at retesting. However, repeated open application test (ROAT) for 7 days was negative. The remaining patch tests were negative. Skin prick tests were positive to birch pollen and mugwort. A ROAT was performed with the Vichy sunscreen cream, and

it was strongly positive after 6 applications on D3. At request, L'Oréal kindly provided relevant information and product ingredients for patch testing. She reacted strongly positive to a single ingredient, ethylhexylglycerin 5% pet. (++, +), and a ROAT with ethylhexylglycerin 5% in pet. was strongly positive on D2 after only 4 applications. The reaction spread to the entire right arm and also to the face. A total of 25 consecutive controls tested with ethylhexylglycerin 5% pet. were negative.

Discussion

Ethylhexylglycerin (International Nomenclature of Cosmetic Ingredients) (syn. octoxyglycerin, 3-(2-ethylhexyloxy)propane-1,2-diol, CAS no. 70445-33-9) is an emollient solvent and a fixative with antimicrobial properties. It is reported that ethylhexylglycerin enhances the uptake of preservatives by micro-organisms, thus potentiating the efficacy of these products (3). Ethylhexylglycerin is a rare contact allergen, and according to our knowledge, only 1 case has been reported previously (4). Ethylhexylglycerin is present in marketed preservatives as Sensiva®, Euxyl K701, -K702, -PE9010 from Schülke & Mayr (Norderstedt, Germany). The patient also had a hydrating facial cream Tolériane® (La Roche-Posay, La Roche-Posay, France) that also contained ethylhexylglycerin.

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References

1. Moss C, Friedmann P S, Shuster S, Simpson J M. Susceptibility and amplification of sensitivity in contact dermatitis. *Clin Exp Immunol* 1985; 61: 232-241.
2. Jensen C D, Andersen K E. Course of contact allergy in consecutive eczema patients patch tested with TRUE Test panels 1 and 2 at least twice over a 12-year period. *Contact Dermatitis* 2005; 52: 242-246.
3. Gaonkar T A, Geraldo I, Shintre M, Modak S M. In vivo efficacy of an alcohol-based surgical hand disinfectant containing a synergistic combination of ethylhexylglycerin and preservatives. *J Hosp Infect* 2006; 63: 412.

4. Linsen G, Goossens A. Allergic contact dermatitis from ethylhexylglycerin. *Contact Dermatitis* 2002; 47: 169.

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