

CONTACT POINT

Cetearyl isononanoate, an underestimated contact allergen?

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Although cetearyl isononanoate is an allergen that is commonly present in many cosmetic and personal care products, including sunscreens and moisturizers, there have been few reports of allergic contact dermatitis resulting from its use.^{1–3}

CASE REPORT

A 38-year-old woman presented with widespread eczematous lesions on sun-exposed areas occurring some hours after she had been sunbathing during the summer. She denied previous similar reactions after sun exposure, and had no history of other dermatological conditions. No systemic symptoms were present, and the results of laboratory tests—including for autoimmune reactions—were normal. The skin lesions resolved completely after application of a hydrocortisone cream. The patient did not relate the episode to the use of any specific product. Patch testing with the Spanish Contact Dermatitis and Skin Allergy Research Group (GEIDAC) baseline series and the European baseline photopatch series (Chemotechnique Diagnostics, Vellinge, Sweden) gave negative results. There were no similar rashes following episodes of sun exposure during the following weeks. However, 1 year later the patient sought dermatological advice again after new flare-ups, one after using Nivea Vital anti-ageing night cream (Beiersdorf, Hamburg, Germany), and another after applying Avène sunscreen 50+ (Pierre Fabre, Boulogne-Billancourt, France). Repeated open application tests gave positive results for both products. Patch tests with the products given by the patient gave positive results in both cases. We contacted one of the manufacturers, Avène, and the compounds of the sunscreen were provided. New patch tests with these compounds showed positive reactions (day [D] 2, ++; D4, ++) to cetearyl isononanoate 4% pet. We performed further patch tests with related compounds, such as cetearyl alcohol 20% pet. and stearyl alcohol 30% pet. (Chemotechnique Diagnostics), but with negative results. Therefore, the final diagnosis of allergic contact dermatitis caused by cetearyl isononanoate, which was present in both the Avène

sunscreen and the Nivea cream, was made, and the recommendation to avoid exposure prevented further similar rashes in our patient.

DISCUSSION

Cetearyl isononanoate has emollient properties and is present in many cosmetic products. Previous reports of contact dermatitis caused by this substance include 2 cases in young women who used different emollient creams,^{1,2} one of whom had systemic symptoms of fever and malaise, and a case in a 2-year-old boy with a widespread sunburn-like reaction a few minutes after applying sunscreen.³ Cetearyl isononanoate is formed through the esterification of cetearyl alcohol. The true allergic reaction may be produced by impurities contained in this and other similar fatty alcohol substances. Some authors have hypothesized that there are cross-reactions between these,^{1,4} but, so far, the reported cases have not confirmed this notion.¹ Regardless of how strongly allergic contact dermatitis is suspected, clinicians should keep in mind that standard patch series may not test for some common allergens such as cetearyl isononanoate, so the frequency of contact dermatitis caused by this substance may be underestimated. Manufacturers' help may be necessary to determine the components of the commercial products and achieve a final diagnosis in such challenging cases.

Conflict of interest

The authors declare no potential conflict of interests.

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REFERENCES

1. Le Coz CJ, Bressieux A. Allergic contact dermatitis from cetearyl isononanoate. *Contact Dermatitis*. 2003;48:343.
2. Ito K, Fujimura N, Uchida T, Ikezawa Z, Aihara M. Contact dermatitis with systemic reactions caused by cetearyl isononanoate. *Contact Dermatitis*. 2013;69:315-316.
3. Sarre ME, Mancel E, Drouet M, Avenel-Audran MJ. Allergic contact dermatitis caused by cetearyl isononanoate in a sunscreen product. *Contact Dermatitis*. 2017;76:357-358.
4. Goossens A, Verbruggen K, Cattaert N, Boey L. New cosmetic allergens: isononyl isononanoate and trioleyl phosphate. *Contact Dermatitis*. 2008;59:320-321.

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