

Allergic contact dermatitis caused by benzoic acid and lauryl glucoside in a sunscreen

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Allergens in sunscreens include, for example, ultraviolet (UV) filters such as benzophenone-3, as well as fragrances, preservatives such as methylisothiazolinone, or ethylhexyl glycerin (1, 2). We present a case of allergic contact dermatitis caused by allergens not previously associated with the use of sunscreens.

Case Report

A 72-year-old man with no relevant medical history consulted with eczema on the backs of both forearms 7 days after the daily application of a sunscreen (50+ Lotion for Children Avène®; Pierre Fabre, Paris, France). The patient mentioned similar episodes after applying different sunscreens from various brands. Patch and photopatch tests were conducted with the Spanish Contact Dermatitis and Skin Allergy Research Group (GEIDAC) baseline series, a series of UV filters (Chemotechnique Diagnostics, Vellinge, Sweden), and the patient's own product 'as is'. The patches were applied with Finn Chambers® fixed with Scanpor® tape, and occluded for 2 days. Readings were performed on day (D) 2 and D4 according to the ESCD guideline (3), and showed only ++ positive reactions to the patient's own sunscreen on both the irradiated and the non-irradiated areas. Subsequently, a breakdown test was performed with the 18 ingredients of the sunscreen, provided by the manufacturer, prepared at the concentrations recommended by de Groot (4). This test showed positive reactions to benzoic acid 5% (++) and lauryl glucoside 5% (++) on D2 and D4 (Fig. 1). We tested these two substances in 16 controls, and all had negative results.

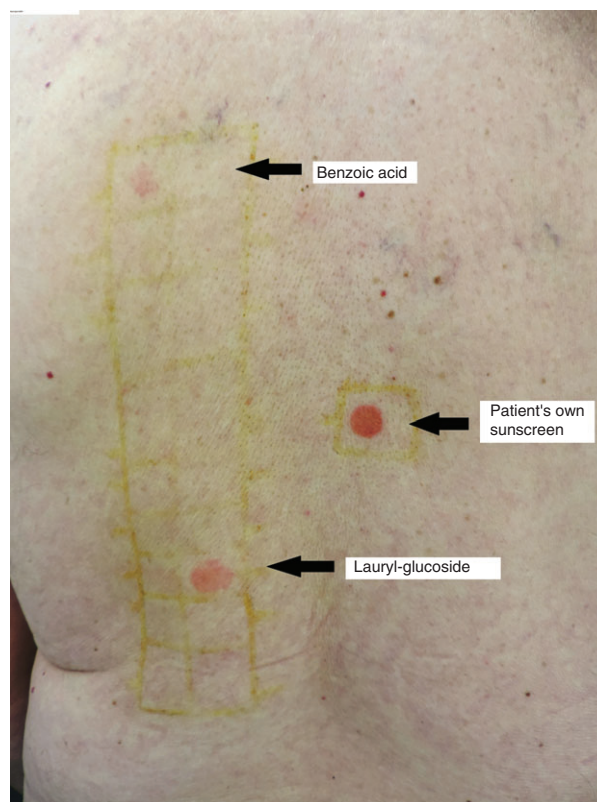


Fig. 1. Positive allergic reactions to benzoic acid, lauryl glucoside, and the patient's own product.

Discussion

Benzoic acid is an aromatic carboxylic acid that, because of its preservative properties, is frequently used in the food, medical and cosmetics industry (5). It has been shown to be involved in allergic contact dermatitis and in contact urticaria caused by cosmetics, and is one of the components of *Myroxylon pereirae* resin (balsam of Peru) in variable concentrations (6).

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Lauryl glucoside is a non-ionic biodegradable surfactant made from plants; it is a member of the alkyl glucoside group, and is used in cleaning agents and emulsions. Within the alkyl glucoside group, decyl glucoside is the one that is most frequently involved in allergies to sunscreens, as part of Tinosorb™ M (7). Although cross-reactions between the different alkyl glucosides are frequent, in our case we did not observe positive reactions to Tinosorb™ M (ingredient of the sunscreen) or decyl glucoside (5% pet.) (in the series of UV filters from Chemotechnique).

Benzoic acid and lauryl glucoside are both commonly used in cosmetic formulations; however, in the literature reviewed, we have not found previous cases of allergy to sunscreens in which these allergens were involved.

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