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Contact Allergy to Octocrylene in Children: A Report of 2 Cases[☆]

Dos casos de alergia de contacto a octocrileno en niños

To the Editor:

The incidence of allergic and photoallergic reactions to sunscreen has increased in recent years due to the widespread use of UV filters. We report 2 pediatric cases of contact allergy to octocrylene; while known in adults, this reaction has not been previously reported in children in Spain.^{1,2}

Patient 1

A 4-year-old girl was referred to our department as she had developed a skin rash on sun-exposed areas the previous summer. The physical examination at the time showed a skin rash consisting of erythematous micropapules on the face and limbs. While wearing sunscreen (Crema Solar Pediátrica Carrefour), the child had been exposed to the sun for 4 hours before the rash appeared. The distribution of the rash coincided with the areas where the sun cream had been applied. The patient had no history of atopic dermatitis or of the use of any medications or topical anti-inflammatory creams. We performed patch and photopatch tests with the Marti-Tor UV filter series and with the sunscreen product used by the patient. Positive results (++) were seen at 96 hours for the sun cream (Crema Solar Pediátrica Carrefour) and for octocrylene 10% in petrolatum in the pho-

topatch tests. The diagnosis was photoallergic dermatitis to octocrylene.

Patient 2

A 5-year-old girl was referred to our department following 2 episodes of acute eczema in sun-exposed areas that had been protected with 2 different sunscreens (Isdin Extrem Pediatrics 50+ and Anthelios Dermopediátricos). The patient had no history of atopic dermatitis or of the use of medications or topical anti-inflammatory creams. Patch and photopatch tests were performed using the Marti-Tor UV filter series and the sun creams the patient had used. Positive results (++) were seen at 48 and 96 hours for octocrylene 10% in petrolatum and for 1 of the sunscreens, Isdin Extrem Pediatrics 50+, which contained octocrylene 9%. The diagnosis was allergic contact dermatitis to octocrylene.

Greater awareness of the harmful effects of the sun and public health messages have led to a progressive increase in the use of sunscreens. UV filters are now found not only in sunscreens but also in a wide range of skincare and cosmetic products.^{3,4} At the same time, however, there has also been an increase in the incidence of sensitization and photosensitization to these filters. UV filters have traditionally been classified as physical or chemical, and chemical filters are more frequently associated with skin allergy.

Octocrylene is an organic compound belonging to the cinnamate family. It is a relatively new filter, capable of absorbing both UV-B and UV-A rays. When used in isolation, its sun protection abilities are poor and it is therefore generally combined with other UV filters to offer a higher sun protection factor and a more stable product that is easier to apply and more water-resistant.⁴

Octocrylene has considerable allergenic potential and can induce serious contact eczema, even through passive transfer.⁵ In some series, it has been found to be the main

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cause of adverse skin reactions to sun care products.³ In a review of the literature, we identified 104 cases of allergic and/or photoallergic contact dermatitis to octocrylene, 24 of which involved children.^{1,2,5-7}

In adults, skin allergy to octocrylene generally affects patients previously sensitized to the nonsteroidal anti-inflammatory drug (NSAID) ketoprofen, which acts as a primary sensitizer. Skin allergy to octocrylene in such patients represents secondary sensitization. In recent series, over 80% of patients with contact allergy to octocrylene have been found to have a prior history of photoallergy to ketoprofen, confirmed by a positive photopatch test result.⁶ Furthermore, there are also reports of patients with photoallergy to ketoprofen who had a positive photopatch test to octocrylene, as well as to other UV filters (benzophenone-3), perfumes (cinnamic alcohol), and fenofibrate, even though they had never shown any signs of skin allergy to these substances.^{6,8,9}

No explanation has yet been found for this common association between photoallergy to ketoprofen and octocrylene, 2 chemically dissimilar molecules.⁹ Some authors have, nonetheless, recommended that patients with ketoprofen allergy should avoid chemical filters containing octocrylene (or benzophenone-3), even if they have never developed allergic symptoms following the use of these products.⁶

Most of the pediatric cases of octocrylene allergy in the literature have been diagnosed as allergic contact dermatitis to octocrylene without previous sensitization to ketoprofen. We did not perform photopatch tests with NSAIDs in our patients as there were no reports of topical NSAID use or evidence of associated skin allergy. It would therefore seem that our cases too were examples of primary sensitization to octocrylene without prior sensitization to ketoprofen. In any case, both the patch and photopatch test with benzophenone-3 were negative. The case of our first patient is of particular interest as it involved a diagnosis of contact photoallergy to octocrylene.

We have described 2 cases of contact allergy to sunscreen in children. In both cases, the offending agent was octocrylene, a relatively new chemical filter that appears to have powerful allergenic potential and to act as a primary sensitizer in children. Considering that the use of octocrylene is increasing, we can expect to see more pediatric cases of contact allergic dermatitis to octocrylene, which could be a cause for concern.

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