

Short Communication

Contact allergy to benzophenone-2 in toilet water

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Key words: benzophenone-2; benzophenone-1; cosmetics; toilet water; photopatch test series; sunscreens; UV absorbers. © Munksgaard, 1998.

Case Report

A 52-year-old man presented with subacute chest and arm eczema. Since he used to spray toilet water on his chest, an allergic reaction to perfume was suspected. A repeated open application test with his product elicited a positive reaction after only 2 applications. Patch testing was performed with the European standard series, a cosmetics series and the constituents of the fragrance mix. All tests were negative at 2 and 4 days.

Further patch testing with the additives of in toilet water and a sunscreen series showed a positive reaction (++) to benzophenone-2 (2% pet.). The patient refused to be photopatch tested. No reactions were seen in 15 controls.

Table 1. Synonyms of common benzophenones in cosmetics and toiletries

	Synonyms
benzophenone-1	benzoresorcinol
benzophenone-2	2,2',4,4'-hydroxybenzophenone tetrahydroxybenzophenone
benzophenone-3	2-hydroxy-4-methoxybenzophenone oxybenzone
benzophenone-4	2-hydroxy-4-methoxy-5-sulfonic acid benzophenone sulisobenzene
benzophenone-8	2,2'-dihydroxy-4-methoxybenzophenone dioxibenzone
benzophenone-10	2-hydroxy-4-methoxy-4'- methylbenzophenone mexenone

Discussion

Benzophenone-2, also known as 2,2',4,4'-hydroxybenzophenone or tetrahydroxybenzophenone, has rarely been cited in cosmetic allergy (1, 2). Benzophenones absorb UV radiation and are used to prevent photodamage. They are found in plastics, rubber, varnishes, and paints, as well as in cosmetics. They are not only common in sunscreens or in anti-aging products, but also in other cosmetics that they protect from photodegradation. Benzophenone-3, -4, -8 and -10 are the most well-known benzophenones (Table 1). However, in addition to these, it is necessary to look out for benzophenone-2, which also seems to be common, at least in toilet water or perfume. Benzophenone-1 is another benzophenone that could become important in cosmetic allergy, since it is used in the same type of products.

This case highlights the fact that additives need to be considered in contact dermatitis from toilet water. Benzophenone-2 probably deserves to be added to a photoallergen series, as well as to a cosmetics series.

References

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