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Contact dermatitis from jojoba oil and myristyl lactate/maleated soybean oil

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Case Report

A 44-year-old woman had applied a moisturizing cream (Clinique Advanced Cream[®]) daily to her face for at least 5 years. For the past 3 months, itching had occurred a few hours after application, and for the past 2 weeks there had been dermatitis on her face.

She was patch tested with the European standard series, an ointment series, Clinique Advanced Cream[®], and Clinique Dramatic Cream[®]. Subsequently, she was patch tested with the 23 individual ingredients of Clinique Advanced Cream[®] in pet., provided by Clinique USA; and finally with Clinique Advanced Cream[®], jojoba oil 1.5% (Clinique), the mixture myristyl lactate 0.5%/maleated soybean oil 1.5% (Clinique), myristyl lactate 0.5% (Clinique), myristic acid 0.5% ($\text{CH}_3(\text{CH}_2)_{12}\text{OOH}$, Fluka, Switzerland), myristoleic acid 0.5% ($\text{CH}_3(\text{CH}_2)_3\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_2\text{H}$, Sigma, Germany), maleated soybean oil, not deodorized, 1.5% (Clinique), maleated soybean oil, deodorized, 1.5% (Clinique), soybean oil 1.5%, the mixture glyceryl stearate 4.9%/polyoxyethylene 23-lauryl ether (Laureth 23) (Clinique), DL-alpha-stearin 4.9% ($\text{CH}_3(\text{CH}_2)_{16}\text{COOCH}_2\text{CH}(\text{OH})\text{H}_2\text{OH}$, Fluka, Switzerland) and stearic acid 4.9% ($\text{CH}_3(\text{CH}_2)_{16}\text{COOH}$).

To exclude irritancy, we tested 20 controls (10 female, 10 male, mean age 36.0 years, range 14 to 71 years) with the substances used in the final patch tests.

Results

The patient showed a +++ reaction to Clinique Advanced Cream[®] initially (Table 1), but did not react to Clinique Dramatic Cream[®], the standard series or the ointment series. Of the 23 individual ingredients of Advanced Cream[®], she reacted ++ to Advanced Cream, ++ to jojoba oil 1.5%, + to myristyl lactate 0.5%/maleated soybean oil 1.5%, and + to glyceryl stearate/Laureth-23. In the final patch tests, she was ++ to Advanced Cream, + to myristyl lactate 0.5%/maleated soybean oil 1.5%, and ?+ to maleated soybean oil, not deodorized, 1.5%, though not to myristyl lactate 0.5%. No reactions were seen in 20 controls, except in 1 man who was ?+ to glyceryl stearate 4.9%/Laureth 23.

Discussion

The patient had allergic contact dermatitis from Clinique Advanced Cream[®], proven in 3 consecutive patch tests over a period of 2 years. According to a personal communication from Clinique Austria in 1993, the preparation of the cream had changed about 2 years ago, since when 2 further cases of suspected contact dermatitis due to the cream seem to have occurred in Austria.

Jojoba oil is widely used in cosmetics, such as moisturizers, sunscreens, shampoos and conditioners. Con-

Table 1. Patch test reactions to Advanced Cream and its components

	Test 1 (April 1993)	Test 2 (May 1994)	Test 3 (June 1995)
Clinique Advanced Cream [®]	+++	++	++
jojoba oil 1.5%	NT	++	—
myristyl lactate 0.5% and maleated soybean oil 1.5%	NT	+	+
maleated soybean oil 1.5% not deodorized	NT	—	?+
maleated soybean oil 1.5% deodorized	NT	—	—
soybean oil 1.5%	NT	NT	—
myristyl lactate 0.5%	NT	—	—
glyceryl stearate 4.9% and polyoxyethylene 23-lauryl ether	NT	+	—

tact dermatitis from jojoba oil 20.0% has been described in 5 patients (1). Glyceryl stearate is extensively used as an emollient, opacifier and emulsifier in cosmetics. Contact dermatitis from glyceryl stearate is probably extremely rare; only 3 reports exist (2). In our patient, a positive reaction was obtained to the mixture of glyceryl stearate and polyoxyethylene 23-lauryl ether (Laureth 23).

Myristic acid and its derivatives are used as emulsifiers. Contact dermatitis from the fatty acid ester myristate octyl dodecyl 10.0% was first described by Sanz de Galdeano et al. (3). Contact dermatitis from myristyl alcohol was also once described (4). Myristyl lactate did not react singly, though the mixture of myristyl lactate and maleated soybean oil, as used in the product, repeatedly gave positive reactions. As there was a doubtful reaction to maleated soybean oil in the final patch tests, and also with reference to the recent literature (5), we suggest that maleated soybean oil was the cause of this allergic reaction.

In conclusion, our patient showed contact dermatitis from Clinique Advanced Cream[®], and to its ingredients jojoba oil and, probably, maleated soybean oil, both being rare contact allergens.

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Possible cosmetic dermatitis due to mercaptobenzothiazole

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Key words: allergic contact dermatitis, cosmetics; rubber sponge; butadiene-acrylonitrile copolymer; nitrile rubber; mercaptobenzothiazole. © Munksgaard, 1996.

An executive in the cosmetics industry was referred with acute severe dermatitis of most of her face. There was marked facial erythema and edema, which cleared on discontinuing all facial cosmetics. Patch testing with the standard series and her cosmetics showed only a ++ reaction to mercaptobenzothiazole (MBT) at 2 and 4 days.

The potential source of MBT was considered to be the cosmetic sponge that she used many times daily. The supplier denied that the sponge, composed of butadiene-acrylonitrile copolymer (nitrile rubber), contained MBT.

Extracts of the sponge (high-performance liquid chromatography) revealed that the sponge contained, in triplicate analyses, 2, 3, and 4 ppm MBT. Provocative use tests with the sponge were not performed; because of this, the diagnosis of allergic contact dermatitis due to mercaptobenzothiazole in the cosmetic sponge remains putative.

If further such cases are documented, MBT will be another material to add to the growing list of allergens that may elicit allergic contact dermatitis at the few ppm level.

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