

Contact dermatitis due to emulsifiers

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Key words: emulsifiers; allergic contact dermatitis; sorbitan sesquioleate; sorbitan mono-oleate; medicaments. © Munksgaard, 1997.

Case Report

A 63-year-old woman presented in 1994 with a palpable purpura over the legs and thighs, with areas of necrosis, the skin biopsy showing a superficial and deep perivascular infiltrate of neutrophils and lymphocytes, with fibrin deposition and extravasation of erythrocytes, that improved with oral corticosteroids. Over the next year, she developed eczema of her legs and forearms, and a further episode of cutaneous vasculitis. The situation improved with topical and oral corticosteroids, but the dermatitis worsened after discontinuing this treatment and applying a wet dressing containing sorbitan sesquioleate. She had no personal or family history of atopy.

In 1995, she was patch tested with the GPEDC standard, medicament and fragrance series, with the following positive results:

		D2	D4
wool wax alcohols	30% pet.	+	++
fragrance mix	8% pet.	++	++
sorbitan mono-oleate (Span 80)	5% pet.	++	++
sorbitan sesquioleate (Arlacel 83)	20% pet.	++	+++
cinnamyl alcohol	1% pet.	+	++
cinnamaldehyde	1% pet.	+	++
amylcinnamaldehyde	1% pet.	+	++
geraniol	1% pet.	+	++
hydroxycitronellal	1% pet.	+	++
eugenol	1% pet.	+	++
isoeugenol	1% pet.	+	++
oak moss absolute	1% pet.	+	++

As sorbitan sesquioleate is present in fragrance mix and in the fragrance of our series, the patient was patch tested with 2 fragrances without sorbitan sesquioleate, cinnamyl alcohol 2% pet. and cinnamaldehyde 1% pet., and the results were negative. No further topical medicaments with these emulsifiers were used by the patient, and, having been advised to avoid foods containing this kind of emulsifiers, during 12 months of follow-up, she had no new lesions.

Discussion

Sorbitan mono-oleate and sorbitan sesquioleate are non-ionic emulsifiers: the first is a monoester of oleic acid and hexitol anhydrides derived from sorbitol; the

second a mixture of mono- and diesters of the same. Tosti et al. (1) found that 5.3% (39/737) of patients patch tested had at least 1 positive reaction to emulsifiers, triethanolamine being the most frequent. Pasche-Koo et al. (2) found that 25.5% (12/47) of patients patch tested had at least 1 positive result to an emulsifier, Lanette O, Lanette N and Span 80 being the most frequent, and Arlacel 83 also frequent. Mallon & Powell (3) considered sorbitan sesquioleate to be a rare sensitizer in leg ulcer patients.

The EECDRG (4), in their multicentre study on the value of adding sorbitan sesquioleate to the fragrance mix and its constituents, found that 0.71% (5/709) of the patients were allergic to the emulsifier sorbitan sesquioleate itself, and these patients also showed a positive reaction to the fragrance mix with this emulsifier. Nevertheless, not all patients had at least 1 positive result to the constituents of the mix, not even when sorbitan sesquioleate was added.

Our patient had a fragrance mix positive and, when patch tested with its individual constituents, all proved positive. However, she had no history of sensitivity to perfumes and the 2 constituents without sorbitan sesquioleate, when patch tested, were negative. We think that these positive results were due to the presence of the sorbitan sesquioleate, and that our patient developed a contact dermatitis, with clinical features of vasculitis and eczema, due to emulsifiers contained in topical preparations and perhaps in foods.

References

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