

Table 1. Patch test results

Patient no.	GIRDCA	Preservatives	Perfumes	Emulsifiers
1	fragrance mix +/+ +			
2	PPD -/+ + +			
	balsam of Peru -/+ +			
5	nickel +/+ +			
7	fragrance mix -/+ +		oak moss oil +/+	
	colophony +/+ +		peppermint oil +/+	
8	Kathon CG -/+	Kathon CG -/+		
	thimerosal +/+ +	thimerosal +/+ +		
15	fragrance mix -/+ +		oak moss oil -/+	
18	thimerosal +/+ +	thimerosal +/+ +		
20	balsam of Peru +/+ +			
	thimerosal +/+ +	thimerosal +/+ +		
22	p. dichromate -/+			
23	wool alcohols +/+ +			Amerchol L-101 +/+ +
24	thimerosal +/+ +	thimerosal +/+	eugenol -/+	

Results

11 out of 29 patients showed 1 or more positive reactions to the allergens applied (Table 1). Patients were all negative to their own products except for 1 who showed a strong reaction to Kerastase® shampoo (5% aq.) (patient no.23) and 1 to Nizoral® cream (patient no.6); both refused further patch testing.

Discussion

"Cosmetic intolerance" may be due to irritation or less frequently to allergy (3, 4). It is well-known that rosacea patients are more susceptible to irritants (2), but little is known about allergy. In rosacea patients, contact dermatitis has been reported from thimerosal and PPD (5) and clindamycin (6). In our series of 29 consecutive patients, a surprisingly high frequency of allergic reactions was observed, 12 (41%) showing 1 or more reactions to standardized allergens or their own products. Nevertheless, history and ROAT confirmed clinical relevance in only 5 patients, allergy to thimerosal, for example, being

judged not relevant in all 5 cases detected. Nor did we observe any relationship between the clinical features of rosacea and the presence of allergy. Patients with rosacea should be patch tested if they give a history of aggravation of symptoms by cosmetics or medicaments.

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Allergic contact dermatitis from oleyl alcohol in lipstick cross-reacting with ricinoleic acid in castor oil and lanolin

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Castor oil is widely used as an emollient in lipsticks, particularly make-up removers and moisturizers. It is also used as a base for some topical medicaments, as well as a purgative (1). Angioedema, rhinitis, asthma

and rashes due to castor oil during its extraction from the seeds of *Ricinus communis* (Euphorbiaceae) and oral administration of the oil have been reported (2). Oleyl alcohol is used as an emulsifier and emollient in lip-

Table 1. Patch test results at 4 days

Materials	1st test	2nd test	3rd test
lipstick	++		
wool wax alcohols	++		
Amerchol L-101	+		
colophony	+		
cetylstearyl alcohol	-		
castor oil (as is)		++	
pigments in castor oil (10% pet.)		+ / ++	
oleyl alcohol (10% pet.)		+++	
candellila wax (10% pet.)		++	
ricinoleic acid (0.1, 1.0, 10% pet.)			++
oleic acid (0.1, 1.0, 10% pet.)			-

sticks, hair applications and topical medicament bases, superfatting agent, solvent for essential oils and in the manufacture of paper and printing ink (3). Tosti et al. (4) found that oleyl alcohol was the most common cause of contact dermatitis from fatty alcohols.

Case Report

A 29-year-old woman developed sore cracked lips, followed 2 days later by vesicular facial eczema, which settled quickly with topical corticosteroid. She had been using the same lipstick for several years. She was non-atopic but had an identical twin sister who had had childhood eczema and was 'sensitive' to many cosmetics. She herself had had an allergic reaction to contact lens solution.

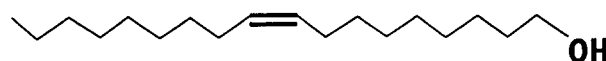
She was patch tested to the European standard, facial and cosmetic series, and to her own lipstick using Finn Chambers® (Epitest). Readings were made at 2 and 4 days in accordance with ICDRG criteria (Table 1). The constituents of the lipstick were included in the 2nd series of tests. The patient was also tested to ricinoleic acid and oleic acid. There was a dose-dependent reaction to ricinoleic acid (0.1, 1.0 and 10% pet.). Castor oil is a major source of ricinoleic acid, which has been reported as allergenic in it (5, 6).

Discussion

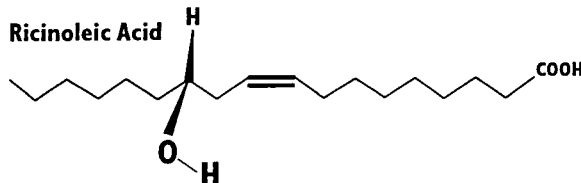
The 1st cases of lipstick dermatitis due to allergy to oleyl alcohol were reported in 1960 (7). Contact dermatitis due to oleyl alcohol in sun lotion, hair lotion and skin cleanser has since been reported (4, 8). Oleyl alcohol cross-reacts with stearyl alcohol (3, 9). Allergic contact dermatitis from castor oil has been reported widely, in lipsticks, make-up remover, wart paints, and zinc and castor oil cream (5, 10–14). Ricinoleic acid has been implicated in castor oil in some cases (5, 6).

In our patient, we believe the positive reactions to oleyl alcohol and ricinoleic acid represent a cross-reaction. The chemical similarity between oleyl alcohol and ricinoleic acid lies in the position of the double bond and an hydroxyl (OH) group (Fig. 1). In oleic acid, the OH group is absent. The oleyl alcohol in the product was derived from lanolin and has since been removed. The positive reaction to lanolin may also represent a cross-reaction with oleyl alcohol.

Oleyl Alcohol



Ricinoleic Acid



Oleic Acid

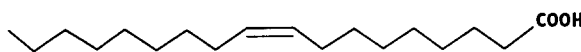


Fig. 1. Molecular structures of fatty alcohol and acids.

Acknowledgement

We are grateful to The Body Shop International plc for supplying the constituents of the lipstick and for their advice on the chemical structures of the compounds.

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