

Severe allergic dermatitis caused by lanolin alcohol as part of an ointment base in propolis cream

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In this case report, we show an unusually severe lanolin alcohol contact dermatitis in a young woman. Propolis cream is popular and used widely for domestic use, and is usually known as a natural product. These products commonly use water-absorbing ointment bases containing lanolin alcohol (wool wax alcohols) in different

compositions. Lanolin alcohol is an often used ointment base and a frequent sensitizer, especially in patients with chronic eczema and stasis dermatitis (1).

Case History

A 19-year-old woman presented with widely distributed, erythematous, papular and confluent eruptions on both backs of her hands. Furthermore, there was oedema on the left hand with vesicular eruptions that extended to the interphalangeal joints (Fig. 1). There were also inflammatory, itchy, papular lesions on her cheeks (Fig. 2) and feet.

Her history revealed that 3 days before the occurrence of the exanthem, she had taken oral clindamycin 300 mg three times daily because of planned dental treatment. After the third capsule, a slight maculopapular exanthema on the back of the left hand occurred. She stopped using clindamycin immediately, and self-treated the eruptions with propolis cream that she had already been using for a few days because of dry lips. As the patient owned horses, she had used hoof ointment and new riding gloves on the day of the occurrence of the eruptions. In addition, she had used a new perfume.

Patch tests were performed with our baseline series, fragrance mix I and II series (Almirall Hermal, Reinbek, Germany), with Curatest® (Lohmann and Rauscher, Rengsdorf, Germany), on the patient's back. The reactions were recorded according to the criteria of the International Contact Dermatitis Research Group at D2, D3, and D5. We performed another patch test with the patient's hoof ointment, laurel leaf oil (present in the hoof ointment), and the riding gloves. Next, we performed a patch test with propolis cream and perfume. The propolis cream was composed of lanolin



Fig. 1. Swollen dorsum of the left hand with papulo-vesicular eruptions.



Fig. 2. Papular exanthem on the right cheek.

alcohol, cetearyl alcohol, polyethoxylated castor oil, solid paraffin, paraffin liquidum, petrolatum, cera alba, olive oil, and propolis cera. It did not contain any fragrances. Finally, we performed a patch test with different ointment bases. The results are shown in Table 1. The total IgE level was 10 kU/l, and there was no specific IgE against horse, house dust mite, or clindamycin.

Discussion

We identified the lanolin alcohol, contained in a propolis cream, as the reason for the severe allergic contact reaction. Because of the strong reactions to several fragrance components, we had initially suspected the responsible allergen to be the new perfume, the riding gloves, or the hoof ointment. The propolis cream had not been suspected at the beginning, because:

- (1) it had been used only after the initial symptoms had appeared;
- (2) patch testing with propolis gave negative results;
- (3) the patient had tolerated this propolis cream before;
- (4) we were not aware at this time of the presence of a lanolin alcohol-containing ointment base in the propolis cream.

It remains unclear what caused the skin symptoms initially. Taking into account of all these facts, clindamycin was ruled out as a cause for the eruption.

Lanolin alcohol is a component of cosmetics, topical creams, household products, leather, furs, textile finishing and furniture-polishing materials, shoe polish, papers, and print colours (2). Brasch et al. estimated the frequency of the most important contact allergens in Germany on the basis of 78 067 patch tests

Table 1. Results of the patch tests

Allergen	Concentration	D3	D5
Baseline series			
<i>Myroxylon pereirae</i>	25%	++	++
Colophonium	20%	+++	+++
Fragrance mix 1	8%	++	++
Fragrance mix 2	14%	+++	+++
Lanolin alcohol	30%	+++	+++
Propolis cera	10%	–	–
Fragrance series			
<i>Eugenia caryophyllus</i> (clove oil)	2%	++	++
<i>Cymbopogon schoenanthus</i> (lemon grass oil)	2%	++	++
Itemization fragrance mix 1			
Sorbitan sesquioleate	20%	++	+
Other substances from fragrance mix 1: negative			
Itemization fragrance mix 2			
Farnesol	2.5%	++	++
Other substances from fragrance mix 2: negative			
		D2	D5
Hoof ointment	as is	–	–
<i>Laurus nobilis</i> (Laurel leaves oil)	as is	–	–
Riding glove	as is	–	–
Perfume	as is	–	–
Propolis cream	as is	+++	++
Ointment base			
Unguentum lanalcoli	30% pet.	+++	++
Solid paraffin	as is	–	–
Paraffinum liquidum	as is	–	–
Cetearyl alcohol	20% pet.	–	–
Petrolatum	as is	–	–

performed between 1992 and 2000, and found that 0.6% of the general population suffered from a lanolin alcohol contact allergy (as compared with the 2.3% prevalence of contact allergy caused by nickel allergy) (3).

It is well known that lanolin alcohol allergy is much more frequent in patients with stasis dermatitis. In a study with 423 patients the rate of sensitization to lanolin alcohol was as high as 17.7% (4).

Lanolin alcohol is a mixture of sterine and higher aliphatic alcohols from lanolin. Eucerin obviously

contained only a low concentration of lanolin alcohol, resulting in a negative patch test in our patient (1). Other studies, however, have shown that it is not necessarily the quantity of lanolin alcohol that determines whether or not there will be a positive reaction (5). Sensitizers are probably unknown substances in the free fatty alcohol region, certain contaminants, or detergents, as lanolin alcohol is an unstandardized mixture.

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