

CONTACT POINTS

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Allergic contact dermatitis from decyl glucoside in an antiseptic lotion

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Decyl glucoside is a mild non-ionic surfactant widely used in rinse-off as well as in leave-on cosmetics, especially in products for individuals with sensitive skin because of its good tolerance. Glucosides are plant-derived and biodegradable, produced by the reaction of glucose from corn starch with the fatty alcohol from coconut oil.

Allergic contact reactions to glucosides are uncommon. The first cases were described in 2003 with cleansing agents, sun sprays (1) and an antiseptic gel (2). Since then, only a few cases have been published (3–5). We describe two additional cases of decyl glucoside contact allergy from the same antiseptic product formulated in a lotion.

Case Reports

Patient 1

After 3 days of using a topical antiseptic lotion for disinfection after cryotherapy of seborrheic keratosis, an 86-year-old woman developed an acute eczema affecting the submammary area and lateral sides of her neck.

Patient 2

An 80-year-old man was admitted because of an acute lower leg eczema. He had an 8-month history of eczema, which was initially successfully treated

Table 1. Patch tests results to the ingredients of the antiseptic lotion

Ingredients	Patient 1		Patient 2	
	D3	D4	D3	D4
Decyl glucoside 1% pet	++	Not seen	++	++
Decyl glucoside 3% pet	+++	Not seen	+++	+++
Chlorhexidine digluconate 0.5% aq	++	Not seen	+ ?	+
Triethanolamine 2% pet	Negative	Not seen	Negative	Negative
Glycerol 10% aq	Negative	Not seen	Negative	Negative

with topical corticosteroids. As his eczema relapsed, an antiseptic lotion was added to the treatment regimen. The eczema worsened a few days later.

In both cases, there was no history of previous eczema nor atopy and symptoms cleared after treatment with topical steroids and avoidance of the antiseptic product.

In both patients, patch tests were performed with the European baseline series (Chemotechnique® Diagnostics, Vellinge, Sweden), additional series GERDA (Groupe d'Etude et de Recherche en Dermato-allergologie) and personal products, using Haye's Test Chambers® (Alphen aan den Rijn, The Netherlands) with readings at D3 and D4. Further patch tests were performed with the ingredients of the antiseptic lotion provided by the manufacturer.

Results

On the first patch testing, patient one showed positive reactions only to lauryl glucoside ++/+++ which is in the GERDA additional series and to the antiseptic lotion ++/+++. Patient 2 had polysensitization and showed positive reactions to IPPD ++/+++, wool alcohols ++/+++, Amerchol® L101 ++/+++, lauryl glucoside ++/+++ and to the antiseptic lotion ++/+++. The results of the further patch tests with the ingredients of the antiseptic lotion showed a strongly positive reaction in both patients to decyl glucoside (CAS n°58846-77-8) 1% and 3% in petrolatum and a weaker reaction to chlohexidine digluconate. Details of the results are summarized in Table 1.

Discussion

C Le Coz described the first case of delayed-type hypersensitivity to decyl glucoside from an antiseptic gel in 2003 (2). Our cases confirm the risk of allergy to the same product formulated in lotion which also contains chlorhexidine and decyl glucoside. Both patients had a stronger reaction to the emulsifier than to the antiseptic, which showed that chlorhexidine digluconate was not the only allergen of the lotion responsible for the eczema. Our patients strongly reacted to lauryl glucoside. As it has been published previously, there is a group allergy towards alkyl glucosides (5). Because of the increasing use of glucosides, especially in cosmetics, the GERDA decided in 2005 to test decyl glucoside in its additional series. Even if the percentage of positive results was only about 0.5%, we decided to keep the commercially available alkyl glucoside, lauryl glucoside, in our additional series because it is sometimes a hidden allergen, as in sunscreen agents. Our results confirm that lauryl glucoside is a good marker of allergy to glucosides and seems a useful test in additional series. Considered as a mild irritant, decyl glucoside rarely elicits allergic contact dermatitis, but our cases show that if the reaction occurs, it may be surprisingly strong. In both cases, there was a deterioration of the skin barrier due to cryotherapy (Case 1) and stasis eczema (Case 2). This could have facilitated the allergen penetration and so enhanced the risk of allergy. These cases, once again, underline the importance of patch testing with patients' own products, and identifying the real allergen from the ingredients to prevent the recurrence of the eczema.

References

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