

CONTACT POINTS

CONTACT DERMATITIS 2006: 55: 246–255

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Allergic contact dermatitis due to vitamin K₁ contained in a cosmetic cream

Contact Dermatitis 2006: 55: 246–247

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Key words: contact dermatitis; cosmetic; patch test; vitamin K₁.

Cosmetics are a common cause of eyelid allergic contact dermatitis (ACD). This is frequently caused by dyes, fragrances, resins, preservatives, and vehicles of cosmetics applied on the face, hair, and fingernails. We report 2 cases of eyelid ACD due to vitamin K₁ contained in the same cosmetic cream.

Case 1

A 37-year-old woman with personal antecedents of nickel ACD developed an acute, itchy eczematous reaction of the periorbital area, with oedematous swelling of her lips. The patient had used a new facial make-up and a cream for the past 3 weeks to decrease periorbital hyperpigmentation (Ureadin[®] facial eye contour; Isdin, Barcelona, Spain). The application of all cosmetics was stopped. Topical and systemic corticosteroids were prescribed, resulting in healing of the lesions within 4 weeks.

Case 2

A 36-year-old woman with a personal history of allergic rhinoconjunctivitis due to grass pollen and ACD due to nickel presented with a scaly and pruriginous, periorbital eczematous der-

matitis. Treatment was initiated with a low-potency topical corticosteroid, with a marked improvement of lesions in 2 weeks. For the past 4 weeks, she had been using a cream to decrease periorbital hyperpigmentation (Ureadin[®] facial eye contour; Isdin, Barcelona, Spain).

Ureadin[®] facial eye contour contains vitamin K₁, urea, coenzyme Q10, parabens, perfume, titanium dioxide, and a long list of additives. It was confirmed by manufacturer that it does not contain nickel.

Both the patients were patch tested with a standard series of contact allergens (True Test[®]; Alk-Abello, Madrid, Spain) and also with solar filters mix (2%), *p*-aminobenzoic acid (10%), 8-

methoxypsoralen (0.001%), and titanium dioxide (1%) (all in petrolatum, Aristegui[®], Bilbao, Spain), the make-up supported by patient 1 and Ureadin facial[®] (both as is), and vitamin K₁ (aqueous solution 1 mg/ml, Konakion[®], Roche, Switzerland). In both patients, we founded a positive reaction only to Ureadin cream[®] (+++), vitamin K₁ (+++) (Fig. 1), and nickel sulfate (++). Patch tests with Ureadin cream[®] and vitamin K₁ were negative in 15 control subjects. A mixture containing all the components of Ureadin[®], except for vitamin K₁ and perfume, was sent by the manufacturer, at our request. It was patch tested in both patients with a negative result.



Fig. 1. Positive patch test with vitamin K₁ (aqueous solution 1 mg/ml, Konakion[®]).

Vitamin K exists in different molecular forms: vitamin K₁ (phytomenadione) and vitamin K₂ (menaquinone) are the natural forms. There are several synthetic analogues including vitamin K₃ (menadione). Vitamin K₁ is available for therapeutic use, being mainly employed in patients with hypoprothrombinemia (liver dysfunction), as an antidote of coumarin drugs or in vitamin K deficiency (cystic fibrosis). More recently, it has been introduced in the market for its use in eye contour cosmetics and in creams to reduce the purpura associated with laser therapies.

Type IV hypersensitivity to vitamin K is infrequent. It has been described mainly in patients with liver disease, who developed eczematous local reactions at vitamin K₁ injection sites (1, 2). Occupational ACD has also been reported in employees in either pharmaceutical or veterinary laboratories after handling vitamin K₃ (3, 4). We report 2 cases of ACD due to vitamin K₁ contained in a cosmetic cream. Only 2 similar cases with a different cosmetic have been reported (5, 6).

With the increasing use of vitamin K₁ in cosmetic creams and the subsequent amplification of the exposition to this vitamin, we will probably see a higher frequency of allergic reactions to vitamin K₁ in the near future. Vitamin K₁ must be investigated as a new cause of eyelid ACD.

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