

Maintenance of hand eczema by oral pantothenic acid in a patient sensitized to dexpanthenol

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Dexpanthenol, an alcoholic derivative of pantothenic acid (vitamin B₅), is present in many vitamin preparations and topical medicaments. It is also increasingly added to cosmetics. Despite its wide use, contact dermatitis seems to be rare (1).

Case Report

A 33-year-old woman presented with chronic dermatitis of the face, with multiple slightly scaly lesions on her forehead, temples, cheeks and neck, and pronounced erythema along the entire scalp margin. Nummular-eczema-like lesions were present on arms and trunk. She was patch tested with a standard series, and special series of emollients, perfumes, preservatives, acrylates, metals and rubber chemicals, with negative results. A detailed history revealed frequent use of a dexpanthenol-containing baby cream for skin care. A ++ reaction (D3) was obtained by patch testing the product as is; subsequent testing with the ingredients of the cream revealed a ++ reaction to dexpanthenol 5% pet.

When use of the cream was stopped, the dermatitis improved but did not permanently clear. Dispersed lesions remained periorally, and recurrent nummular-eczema-like lesions were found on her right hand. To prove the clinical relevance of the patch test result, the patient was orally challenged with a daily dose of 3×60 mg of Ca-D-pantothenate (Pantogar[®], Salus-Braunapharm, Austria; capsule containing 60 mg Ca-pantothenate and 220 mg L-cysteine) over 3 days. While there was only moderate worsening of facial eczema, severe exacerbation of hand lesions started on D4, showing yellowish crusts with densely packed papulovesicles and flare-up at previous sites. The same results were obtained on a 2nd challenge following the same protocol. Following a diet low in vitamin B₅, the dermatitis improved within 2 weeks; change-over to B₅-rich nutrition provoked worsening of facial and hand eczema within 1 week.

Discussion

As generalized dermatitis was also present in several previously described cases (1), nutritional vitamin B₅ may therefore cause systemic contact dermatitis following contact sensitization to topical dexpanthenol, her nummular-eczema-like lesions being an atypical manifestation of this. Hypogammaglobulinemia G, M and A and increased levels of IgE, as previously reported in nummular dermatitis (2, 3), were not present.

Sensitization to dexpanthenol is mainly caused by topical medicaments intended to stimulate re-epithelization (1), in which it is usually present at 5%. Sensitization by cosmetics has been described only from sunscreens (4, 5) and a d-panthenyl-ethyl-ether-containing hair lotion (6). Schmidt-Grendelmeier et al. (1) found 2 positive reactions to dexpanthenol among 273 patients patch tested (0.73%). We added dexpanthenol 5% pet. to our standard series in 1474 patients and observed 5 positive reactions (0.34%), 4 of which were considered relevant. 3 of our patients seemed to have been sensitized by everyday cosmetics, suggesting that concentrations below 5% may also sensitize.

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