

Airborne contact dermatitis to methylchloroisothiazolinone/methylisothiazolinone in a boy

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Case Report

A 13-year-old boy presented with erythematous papules and eczematous plaques on his right arm, neck, upper chest region and face with oedematous swelling of the eyelids. Allergic contact dermatitis was diagnosed and treated with topical glucocorticosteroids. Epicutaneous patch testing was performed with the standard series recommended by the German Contact Dermatitis Research Group (DKG), and DKG-series of preservatives, technical oils and metals test (1) according to current guidelines (2). Only one positive reaction to methylchloroisothiazolinone/methylisothiazolinone (MCI/MI, 3:1) was seen; questionable reactions occurred to Peru balsam and formaldehyde.

The initial case history revealed no indication of a causative allergen in this case. After learning of the positive reaction to MCI/MI, we questioned the boy's family about recent changes in their living environment. The parents then recalled that they had repainted their kitchen walls 1 day before their son experienced symptoms. The boy had merely entered the room during the painting but had not been otherwise involved. Examination of the household wall paint used (Conti Super-Objektfarbe®, Chemische Werke Kluthe GmbH, Heidelberg, Germany) revealed a concentration of 30 p.p.m. of MCI/MI Patch testing for bronopol, also contained in the wall paint, was

negative. The paint contained no formaldehyde.

Discussion

Chlormethylisothiazolinone and MI belong to the isothiazolinones, a group of preservatives with antibacterial and fungicidal properties used in water-based skin care products, cosmetics, adhesives, detergents, refrigerants, oils and paints (2, 3). Individuals with contact sensitization react to concentrations as low as 6.5 p.p.m. (4). The increasing frequency of observed allergic contact dermatitis (5) has led to a general reduction of MCI/MI concentrations in leave-on products (6). In our case, the exposure history, delayed course of reaction, development of eczema restricted to areas not covered by clothing, positive patch test with MCI/MI and relapse-free healing strongly indicate an airborne contact dermatitis due to type IV allergic reaction to MCI/MI (3:1) (Kathon™ CG Rohm and Haas, Philadelphia, PA, USA).

Case reports of airborne contact dermatitis attributable to MCI/MI in water-based wall paints have repeatedly been published (7–9). Our case is noteworthy because of the extremely limited and indirect exposure to MCI/MI which was nonetheless sufficient to elicit a severe allergic reaction in a child. A meticulous case history in unclear cases of contact dermatitis affecting exposed skin areas can be very useful in detecting surprising sources of volatile contact allergens which might otherwise be overlooked.

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