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Contact allergy to methyldibromo glutaronitrile is still of clinical relevance

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The prevalence of contact allergy to the preservative methyldibromo glutaronitrile (MDBGN) has decreased dramatically since its use in leave-on and rinse-off cosmetics was prohibited in EU member states in 2005 and 2008, respectively (1). Importantly, current clinical relevance of positive patch test reactions has almost disappeared in Denmark (2). Here, we present 2 cases of allergic contact dermatitis caused by exposure to MDBGN in a cleaning detergent and sunscreen agent, respectively, showing that positive patch test reactions to MDBGN can, indeed, still be of current clinical relevance, and that possible exposures should be investigated.

Case Report

Case 1

A 62-year-old non-atopic woman was referred with chronic hand eczema and periodic flares throughout the past 3 years. She worked in the office of a property company, primarily with computers, and had no exposure to irritants or allergens. As a leisure activity, she rode horses. Notably, she experienced no skin improvement over the weekends or during holidays, apart from her last vacation, when she, against her habits, had not been horseback riding. One year previously, patch testing (TRUE Test[®] system) had shown a positive (+) reaction to MDBGN. On clinical examination, chronic fissured erythematous eczema was found on the tips and palmar aspects of all fingers and the palms. Patch testing was

repeated with an extended European baseline series and an additional fragrance allergen series, applied with Finn Chambers[®] (8 mm; SmartPractice, Phoenix, AZ, USA) on Scanpor[®] tape (Norgesplaster, Vennesla, Norway) to the upper back for 2 days. Readings were performed on day (D) 2, D3, and D7, according to ESCD recommendations (3). The patch tests showed positive reactions to MDBGN (+) and linalool (+). A doubtful reaction to *Myroxylon pereirae* was also observed. On examination of product labels on the patient's cosmetic and household products, MDBGN was found in a detergent for leather, Stassek Quickstar[®], which she used for hand washing of her riding gloves. Retrospectively, she recalled that the hand eczema had flared last time she used the detergent. Linalool was also contained in this detergent, as well as in the patient's shampoo. However, as she had never experienced dermatitis in response to fragranced products before, the positive patch test reaction to linalool was assumed to be not of current clinical relevance. A diagnosis of contact allergy to MDBGN and allergic contact dermatitis induced by a detergent was made. After elimination of the detergent, the eczema improved over the next month.

Case 2

A 41-year-old non-atopic woman was referred with a generalized eczematous rash starting during a 1-month vacation in Guatemala. She worked as a dentist and had not previously experienced eczema, but had suffered from a few episodes of acute urticaria, including an episode shortly after returning from vacation. Patch testing was conducted as reported in case 1, in addition to photopatch testing and determination of the minimal erythema dose (MED). The patch tests showed positive patch reactions to fragrance mix I (++), MDBGN (+), nickel sulfate hexahydrate (++), and palladium(II) chloride (+). The MED

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test result was normal, and photopatch testing yielded no evidence of photoallergy. On examination of the product labels of all cosmetic and household products, MDBGN was found in a sunscreen agent, Banana Boat®, which the patients had bought and applied during the current vacation. The rash was located on the skin areas where the product had been applied. Fragrances were found in a deodorant and body lotion, whereas the Banana Boat® sunscreen agent did not include 'perfume', according to labelling information. The patient had never previously experienced dermatitis (including axillary dermatitis) in response to fragranced products. Nickel allergy was considered to be of former clinical relevance, as the patient reported previous episodes of eczema in relation to contact with costume jewellery. She was therefore diagnosed with allergic contact dermatitis caused by MDBGN.

Discussion

MDBGN was approved for use in cosmetics in the mid-1980s. However, the marked allergenic potential of MDBGN soon became apparent, and in the late 1990s it caused an epidemic of contact allergy (4). Consumer exposure to MDBGN was subsequently reduced, owing to regulatory interventions in the EU prohibiting the presence of MDBGN in cosmetics (5, 6). This resulted in a significant decrease in the current clinical relevance of positive patch test reactions to MDBGN (2). However, as shown by the 2 cases presented, consumers may still be exposed to the preservative in cosmetic products bought outside the EU, where it is not banned, or in domestic or hobby products.

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