

Presumed primary contact sensitization to methylisothiazolinone from paint: a chemical that became airborne

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Methylisothiazolinone (MI) in combination with methylchloroisothiazolinone (MCI) is one of the most frequent

causes of preservative contact allergy and dermatitis (1). MCI/MI is widely used to preserve wall paints, and has resulted in airborne allergic contact dermatitis (1, 2). However, MI without MCI has only been used in industrial products for about 10 years, and since 2005 in cosmetic products sold within the EU (2, 3, 4). We have previously reported MI sensitization and dermatitis in workers from a paint manufacturer (2). Furthermore, the first 2 cases of severe allergic airborne contact dermatitis caused by paint

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preserved with MI were recently published (3). Here, we present a case of presumed primary airborne MI contact sensitization following exposure to wall paint preserved with MI.

Case Report

A 23-year-old non-atopic previously healthy young woman was referred to our department with facial dermatitis. Initial symptoms and complaints began 2 months after she started working in a new restaurant, where the walls had just been painted. She began to suffer from peri-orbital oedema, which progressed to vesicular dermatitis. When present in the restaurant, she felt a burning sensation on the cheeks, malaise, and dizziness. The greater the number of consecutive days that she worked in the restaurant, the more the symptoms were aggravated, but they improved when she was off work. Short-course therapy with oral corticosteroids (prednisolone 10 mg/day) was initiated, as topical corticosteroid treatment had no effect. Patch testing was performed with the European baseline series, an extended patch test series including the patient's own cosmetic products, and an extended series of fragrance ingredients. We used Finn Chambers® (8 mm; Epitest Ltd, Oy, Finland) on Scanpor tape® (Norgesplaster A/S, Alpharma, Vennesla, Norway). Patches were applied to the upper back and occluded for 48 hr. Readings were performed according to the recommendations from the International Contact Dermatitis Research Group on day 3, day 6, and day 8 (4). Positive reactions to MCI/MI (2+) (0.01% aqua) and MI (2+) (0.2% aqua) were identified. Also, a positive reaction to nickel sulfate 5% pet. (2+) was identified, as were doubtful reactions to 2% palladium chloride pet. and 1% cobalt chloride pet. The metal allergies were considered to be of past clinical relevance. After presumed primary airborne exposure to

MI, patch testing, and onset of dermatitis, the patients was re-exposed to MI, but this time from a Nivea® Visage cleaning product, to which she had never previously been exposed. Immediately after exposure, she experienced marked aggravation of facial dermatitis. MI was not found in any other cosmetic product that she had been using prior to airborne MI exposure from the wall paint. She stopped using the Nivea® Visage facial cleaning product, and this resulted in rapid clearance of the dermatitis. At follow-up, she still experienced aggravation of skin symptoms when entering other freshly painted rooms.

Discussion

We present a case of presumed primary airborne allergic contact sensitization to MI caused by exposure to paint, which is likely, as nearly all paints currently on the Danish market contain MI, MCI, or benzisothiazolinones (T. Menné, personal communication 2011), and because the patients had never previously been exposed to MI. In this case, MI released from wall paint exceeded the individual threshold level and induced sensitization in a young, healthy woman. We interpret this as another warning about the severe negative effects that MI may have on human health. In line with this, we recently reported that MI from paint caused severe respiratory symptoms in one of our patients (3). As there are currently no maximum permitted concentration of MI in industrial products and no labelling requirements, workers (and consumers) can be heavily exposed to this highly sensitizing chemical. It is important for clinicians to be aware of the association between airborne exposure to MI and the development of allergic contact dermatitis. Patch testing should be performed with MI, as patch tests with only MCI/MI contain a lower MI concentration, and would most likely result in an MI allergy being under-diagnosed.

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