

## Long lasting allergic contact dermatitis to methylisothiazolinone misdiagnosed as atopic dermatitis

Deschamps T<sup>(1)</sup>, Nosbaum A<sup>(1-3)</sup>, Delcroix F<sup>(1-3)</sup>, Marc Vocanson M<sup>(2-3)</sup>, Berard F<sup>(1-3)</sup>, Nicolas JF<sup>(1-3)</sup>

(1)Department of Allergology and Clinical Immunology, CHU Lyon-Sud; (2) Lyon University; (3) CIRI-INSERM U1111

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Correspondence: Thibaut DESCHAMPS, M.D., Allergy Department, Lyon Sud University Hospital  
165, Chemin du Grand Revoyet, 69310 Pierre-Benite France. Tel: +33613568422  
Email: [thibaut.deschamps@chu-lyon.fr](mailto:thibaut.deschamps@chu-lyon.fr)

To the Editor,

Allergic contact dermatitis (ACD) caused by methylisothiazolinone (MIT) is frequent and the skin involvement is often severe (1). The clinical presentation may be atypical leading to delays in diagnosis, particularly in cases of diffuse or generalized eczema (2). We report the case of a patient with a long lasting atopic dermatitis-like eczema that was finally diagnosed as an ACD to MIT.

A 51-year-old atopic woman was referred to the dermato-allergology department in 2017 for the management of a pruritic eczema dermatosis (Figure 1). The dermatosis has been evolving since February 2011, punctuated by spring flares. Topographies affected were the face, including periorbital areas, ears, cheeks, the neck, the forearms and the elbow folds and the back. There was no skin atrophy and no mucosal involvement. There was also no extra-cutaneous involvement. She consulted several dermatologists and allergologists who diagnosed an adult atopic dermatitis and prescribed topical treatments including emollients and topical corticosteroids.

Her history was marked by atopic dermatitis in childhood, asthma, allergic rhinoconjunctivitis, photosensitivity and a TRAPS syndrome (TNF-receptor associated autoinflammatory syndrome) well stabilized by Enbrel® (etanercept) as a weekly injection of 50 mg since 2007.

She was hospitalized for the treatment of an eczema flare in May 2017. The first diagnostic hypotheses were: (i) a flare-up of atopic dermatitis as the patient had a marked history of childhood eczema ; (ii) an etanercept hypersensitivity expressing as eczema or lupus as previously reported (3); (iii) a skin involvement of the TRAPS syndrome which can present as a maculopapular or oedematous erythema (4).

Histopathology showed eczematiform changes of the epidermis, associated with perivascular dermal infiltrate. Direct immunofluorescence was negative. Biological tests showed a hypergammaglobulinemia (6.3 g/L) and a rise of total IgE (232 kU/L). The lupus autoimmune bioassay was negative.

The allergological work up revealed: (i) a sensitization to 2-n-octyl-4-isothiazolin-3-one (one cross) and methylisothiazolinone (two crosses) in the standard European contact allergen series; (ii) no sensitization to protein respiratory allergens from prick and atopy patch tests.

At the end of the hospitalization, the suspected diagnosis was “generalized ACD to MIT”. A prescription of topical corticosteroids was given and more importantly, the patient was asked to check carefully all her personal products containing MIT and to avoid them strictly.

At the follow-up visit, 8 weeks later, an excellent skin condition was noted with complete disappearance of the eczema although the topical corticosteroids had been stopped for 4 weeks (Figure 2). The patient reported that she had found many personal products containing MIT: (i) cosmetics (moisturizing creams, shower gel, deodorants); (ii) paints recently used for the renovation of her apartment. The total elimination of these products had been carried out the day after leaving hospital. Therefore, the final diagnosis was “generalized allergic contact dermatitis to MIT”.

In our case, the delay in diagnosis can be explained by the unusual clinical presentation which is probably due to two distinct types of ACD to MIT: (i) a classical ACD by skin exposure to MIT-

containing cosmetics. Indeed, the patient presented throughout the year significant lesions of eczema of the face and limbs which could be attributed to the use of body creams/lotions and shampoos; the severe dermatitis of the axillary folds may correspond to an irregular use of deodorants (Figure X); (ii) an airborne ACD to MIT-containing paints. Regarding this exposure, long-lasting evaporation may lead to chronic ACD with features of atopic-dermatitis like dermatosis (5). In this respect, the patient retrospectively reported that she renovated her apartment almost every spring by painting different rooms herself. She also noted an improvement in the symptoms, with disappearance of the facial, and especially the nasal eczema when she left her home for holidays. The positive reaction to octylisothiazolinone probably represents cross-reactivity to methylisothiazolinone (6).

In conclusion, we must think of ACD to MIT before any generalized or severe eczema or atypical eczema.

## Figure Legends

**Figure 1:** Eczematous dermatosis of the face and neck (A, B), forearms (C) and elbow folds (D) in May 2017. Complete resolution of the eczema 2 months after avoidance of MIT (E).

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