

Tosylamide/formaldehyde resin allergy – a consideration in the atopic toddler

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Tosylamide/formaldehyde resin is a chemical added to nail varnish to facilitate adhesion of the varnish to the nail while improving shine, rigidity, and flow of application (1). It has been reported that up to 6.6% of adult women who use nail cosmetics and present with dermatitis are found to be allergic to the nail cosmetics (2). Today's youths are experimenting with nail cosmetics at earlier ages and becoming sensitized to tosylamide/formaldehyde resin (3).

In 2003, Duarte et al. (4) reported a high clinical relevance of positive reactions (12%) to tosylamide/formaldehyde resin in their female adolescent population. The prevalence of tosylamide/formaldehyde resin sensitization in young children is not known.

Case Report

A 4-year-old black Hispanic female presented to the Contact Dermatitis Clinic with eyelid dermatitis and worsening atopic flexural dermatitis. As per our centre protocol, in children under 6 years of age, a high clinical suspicion for an allergen has to be demonstrated before patch testing with that allergen is performed. Based on the child's exposure history, chemicals were selected for patch testing. Patch tests were constructed with Chemotechnique allergens in IQ-ultra chambers™ (Dormer Diagnostics/Chemotechniques Diagnostics, Malmö, Sweden) and secured with Hypefix™.

A clinically relevant patch test reaction was found to tosylamide/formaldehyde resin 10% in petrolatum [1+]. The toddler's nails were regularly painted by her elder sister



Fig. 1. Painted nails on a toddler.

(Fig. 1). Discontinued use of tosylamide/formaldehyde resin products by all members of the family resulted in clinically significant improvement of the child's atopic dermatitis.

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Discussion

A statistically significant association between tosylamide/formaldehyde resin and eyelid dermatitis has been identified (5, 6). Moreover, in a recent retrospective case study of 114 children (66 girls and 48 boys) aged from 3 to 15 years, Beattie et al. (7) found that the highest rate (86%) of clinically relevant positive reactions was among the children with eyelid involvement. This case demonstrates the importance of considering tosylamide/formaldehyde resin in the toddler. As we believe that scratching of her atopic dermatitis with tosylamide/formaldehyde resin-varnished nails was a significant factor in the sensitization of our patient, we recommend that children who are unable to comprehend and overcome the need to scratch should not have their nails varnished.

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