

Allergic contact dermatitis from urea-formaldehyde resin in medium-density fibreboard (MDF)

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Case Report

A 33-year-old man presented with a 10-month history of an intensely itchy, eczematous rash predominantly on his face, but also involving the chest, back and antecubital fossae. 8 months previously he had changed his job to one which involved cutting and laying laminated flooring composed of medium-density fibreboard (MDF). He had suffered from atopic eczema in childhood which had cleared at the age of 8 years. His total IgE was 472 kU/mL, confirming his atopic diathesis.

He was patch tested to the European standard series, preservatives, plants and corticosteroid series, his own topical medicaments, the following formaldehyde resins (Chemotechnique): phenol-formaldehyde resin 1% pet; 4-tertiary-butylphenol-

formaldehyde resin 1% pet; urea-formaldehyde resin 10% pet; melamine-formaldehyde resin 7% pet; ethyleneurea-melamine-formaldehyde resin 5% pet, and MDF sawdust 50% pet. There were positive reactions to urea-formaldehyde resin 10% pet. (+ +) at D2 and D4, while there were no reactions to formaldehyde, the other formaldehyde resins or his MDF sawdust. Material safety data sheets from his employers declared that the MDF boards with which he was working contained urea-formaldehyde resin.

Discussion

Contact allergy to resins and products based on formaldehyde is well recognized.

However, MDF, a composite of wood and resin, is a relatively new joinery material and allergic contact dermatitis (ACD) from it was first reported as recently as 1999, where the allergen was identified as melamine-formaldehyde resin (1). In the only other reported case of ACD from MDF, the allergen was phenol-formaldehyde resin-2 (PFR-2; 2). To our knowledge this is the first case report of airborne contact allergy to urea-formaldehyde resin when used as a binder in MDF. This resin has previously been responsible for contact allergy to textiles, where it is now less commonly used (3). It has also been reported to cause ACD from protective sports equipment such as shin-pads (4).

Given that urea-formaldehyde resin is a formaldehyde releaser, it is

noteworthy that there was no reaction to formaldehyde 1% pet. in the standard series. Nor was there a positive patch test reaction to MDF 50% pet. Therefore, in a suspected case of contact allergy to medium-density fibreboard, it is important to test with a series of formaldehyde resins.

References

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