

Active sensitization to cadmium, tin, and indium

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doi:10.1111/cod.12826

Key words: allergic contact dermatitis; case report; metals; patch test.

According to published guidelines, at least two readings of the patch test reactions are required, ideally on day (D) 2, D3, or D4, and around D7 (1). This is fundamental for the possibility of detecting late reactions, which are more frequently described for acrylates, metals, steroids, and antibiotics. If a later reaction is observed, the repetition of patch tests will allow differentiation between a true late reaction and active sensitization.

Case Report

A 50-year-old woman was referred to our department for assessment of metal allergy prior to the placement of a dental prosthesis. She referred to the occurrence of occasional episodes of vesicular, oozing lesions after contact with jeans buttons or belt buckles. The patient was patch tested with the European baseline series (TRUE Test[®]) and a metals series from Chemotechnique (Vellinge, Sweden). The patch tests were applied on the upper back, and occluded for 2 days. Readings were performed on day (D)3 and D7. Patch test results were positive on D7 for nickel, cobalt, and gold sodium thiosulfate, and a diagnosis of allergic contact dermatitis caused by these metals was made.

The patient returned to our department 20 days after the tests, because new lesions had appeared on the back, where the patches had been placed. The new positive reactions were caused by cadmium chloride 1% aq. (++), tin 50% pet. (++), and indium 1% pet. (++). The patch tests were repeated with these metals, and resulted in positive reactions on D3 to cadmium, tin, and indium

(all ++); hence, active sensitization to these metals was diagnosed.

Discussion

In patch test sensitization or active sensitization, a patch test reaction that is initially, until D7, negative is followed by a positive reaction after 10–20 days. At retesting, a positive reaction after 3 days is observed (2). Active sensitization is thought to be uncommon, amounting, according to some series, to 0.1% of all reactions (3). Some allergens have been associated more frequently with active sensitization, such as *p*-phenylenediamine (4), acrylates (5), *p*-tert-butylphenol-formaldehyde resin (6), chloracetamide (7), isothiazolinones (8), and *Primula* extracts (9). The literature concerning active sensitization is sparse and confusing, being almost exclusively based only on isolated cases or retrospective studies (3, 7, 8). There are very few cases in which active sensitization has been confirmed by a second patch test, according to the above definition.

Although metals are among the group of allergens that are most frequently associated with late reactions, there are very few cases in which active sensitization to metals has been documented (10), and we found no case in the literature reviewed with simultaneous active sensitization to cadmium, tin, and indium. The use of these metals in dental prostheses is quite exceptional today, except for indium. Therefore, patch testing with cadmium, tin and indium should probably be restricted to cases in which previous exposure has been ascertained.

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Conflicts of interest: The authors declare no conflict of interests.

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