

Airborne allergic contact dermatitis caused by tin

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Although contact dermatitis caused by tin is rare, it exists and should not be missed. We report a case of occupational allergic contact dermatitis caused by tin.

Case Report

A 15-year-old-boy presented to our clinic with a 10-week history of work-related dermatitis around the eyes, and on the forehead and arms, which had been present since he started an electronics apprentice. He was exposed to

airborne dust containing tin while manipulating metals and soldering during the assembly of electrical wires. He previously had episodes of asthma, and has a familial history of atopy.

Patch tests were performed with the European baseline series (Hermal, Reinbek, Germany), a preservatives series and a personal series that was customized to the patient's reported exposures, which included the following items: a piece of pure tin, pure copper, and copper sulfate diluted 1% in pet. Patch tests were also performed with tin chloride [concentrated 0.5% in pet. (1)] with IQ Ultra® patch test chambers (Chemotechnique Diagnostics, Vellinge, Sweden). Readings were performed on D2 and D4. On D2, readings were positive for pure tin (+++) and for tin chloride (++) (0.5% in pet.). On D4, readings were positive (+++) for both tin derivatives.

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The patient reported that the dermatitis had resolved once he stopped the apprenticeship but reappeared when he exposed himself to tin again. For this reason, he had to choose another occupation, to avoid contact with this metal.

Discussion

Tin is a chemical element that is used in metal alloys and that has multiple functions, especially in the field of

electronics. It is also used in dental metal preparations, including amalgam. It is known to be an irritant to the skin (2). A few studies (3–5) have reported allergic reactions to tin, but only Nielsen et al. have reported a case of true allergic contact dermatitis. In other studies, the results were doubtful and inconclusive. Tin is widely used in many fields, and should not be missed or ignored, as it can be the cause of significant allergic contact dermatitis, which was the case in the patient presented above.

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