

Contact dermatitis caused by nickel release from hair clasps purchased in a country covered by the EU Nickel Directive

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Nickel sensitization became prevalent among Western European consumers after World War II (1, 2). Besides exposure to buttons, zippers, and spectacle frames, the nickel epidemic was mainly driven by exposure to inexpensive jewellery during the 1970s and 1980s (3, 4). Hence, nickel exposure was regulated in Denmark by the Danish nickel regulation in 1990 and in the EU by the EU Nickel Directive in 1994 (2, 5, 6). Briefly, the EU Nickel Directive dictates that nickel release from certain consumer products should not exceed 0.5 µg/cm²/week (except

items inserted into pierced parts of the body) (5, 6). The Danish nickel regulation also dictated that companies should display information about nickel release from hair clasps. If hair clasps released more than 0.5 µg nickel/cm²/week, they should be labelled 'release nickel'. Currently, the EU Nickel Directive (which has now replaced the Danish nickel regulation in Denmark) does not limit nickel release from hair clasps and does not dictate that information should be displayed on hair clasps.

Case Report

A 46-year-old non-atopic Danish woman was referred to our department with rosacea. She also complained about an itchy scalp wound. Her medical history was unremarkable except for nickel allergy and dermatitis caused by exposure to jewellery. On examination, a scaly contact dermatitis reaction on the scalp was identified (Fig. 1). Patch testing with the European baseline series was performed using Finn Chambers[®] (8 mm; Epitest Ltd, Oy, Finland) on Scanpor[®] tape (Norgesplaster A/S, Alpharma A/S, Vennesla, Norway). The tests were applied to the upper back and were occluded for 2 D. Readings were carried out on D2, D3, and D7 according to the recommendation from the International Contact Dermatitis Research Group (7). Thus, homogeneous redness and infiltration in the entire test area were scored as a 1+ reaction. Homogeneous redness, infiltration, and vesicles in the test area were scored as a 2+ reaction and homogeneous redness, infiltration, and coalescing vesicles in the test area as a 3+ reaction. Patch test readings showed a doubtful reaction to 1% cobalt chloride on D2 and irritant reactions on D3 and D7, whereas a 2+ reaction to 5% nickel sulfate was identified on D2, D3, and D7. The patient used a hair clasp that she had purchased from a supermarket in Denmark. This hair clasp was in contact with the skin at the site of contact dermatitis. A dimethylglyoxime (DMG) test prepared by a hospital pharmacy in the Capital Region of Copenhagen was used to identify excessive nickel release (i.e. > 0.5 µg/cm²/week) and showed a positive reaction. When the patient was informed about the test outcome, she purchased new hair clasps at a well-known department store (price

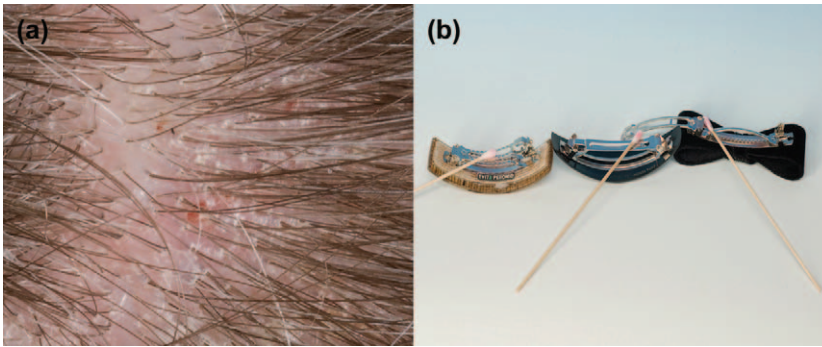


Fig. 1. Nickel contact dermatitis at site of contact with hair clasp (a). Positive dimethylglyoxime test reactions from hair clasps purchased in Denmark in 2008 (b).

40 € each) (Fig. 1). However, subsequent DMG testing also showed positive test reactions from these hair clasps. The scalp eruption cleared when the patient stopped using the hair clasps.

Discussion

This case report shows that excessive nickel release from hair clasps may cause contact dermatitis and also that such reactions may occur following contact with both inexpensive and expensive hair clasps purchased in an EU country. A large Swedish study also showed that excessive nickel release could be identified in hair clasps after the country entered the EU (8). In addition, a recent case report from Italy described an 18-year-old woman with scalp nickel dermatitis from wearing a hair clasp (9). Thus, European dermatologists should inform nickel-sensitized patients about the risk of nickel release from hair clasps. Furthermore, nickel dermatitis should, in some cases, be suspected in itchy scalp lesions of unknown cause. Finally, we believe that this situation should be followed closely as metal hair clasps are widely used by both toddlers and children.

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