

Linear eczematous lesions caused by an allergen-contaminated skin marker: an iatrogenic complication of patch testing

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Patch testing is a safe method; however, there might be complications of this diagnostic procedure (1–3). Occasionally, linear eczematous lesions occur along the skin marking lines, mainly because of contact allergy to the skin marker ink (4, 5). We herein present another, yet unreported, reason for the development of linear eczematous lesions along the skin marking lines during patch testing.

Materials and methods

Linear eczematous lesions along the skin marking lines observed during patch testing in our department between 2012 and 2014 were photodocumented and recorded, along with the relevant interpretation. The same brands of patch test chamber (plastic, square-shaped IQ Chambers®, area 81 mm²; Chemotechnique Diagnostics, Vellinge, Sweden), skin marker (Chemotechnique® skin marker; Chemotechnique Diagnostics) and adhesive tape (Hypafix®; BSN Medical GmbH, Hamburg, Germany) were used in all patients. Contact allergens were applied by the same patch test technician. Allergens in pet. were applied in an amount that was enough to fill half of the IQ Chamber®, corresponding to 25–30 mg of each allergen, in accordance with the current European Society of Contact Dermatitis guideline, considering that the inside area of IQ Chambers® is greater than that of IQ Ultra™ test chambers listed in the guideline (3). Liquid contact allergens were applied as one drop of the test solution, moistening the filter paper previously placed into the patch test chambers.

Patch test allergens (Brial Allergen®, Greven, Germany and Chemotechnique Diagnostics) were removed at day (D) 2, and test sites were marked with a skin marker, and evaluated on D2, D3, D4, and D7, according to ICDRG criteria (6). The marking lines were redrawn during the observation period if necessary.

Results

Among 435 patch tested patients, 5 (1.1%) showed linear eczematous lesions along the skin marking lines during patch testing. In these 5 patients (2 females and 3 men) the reaction was attributed to linear spreading of the test allergen, to which the patient reacted positively, because of contamination of the skin marker tip with the allergen during skin marking at D2 and/or refreshing the marking

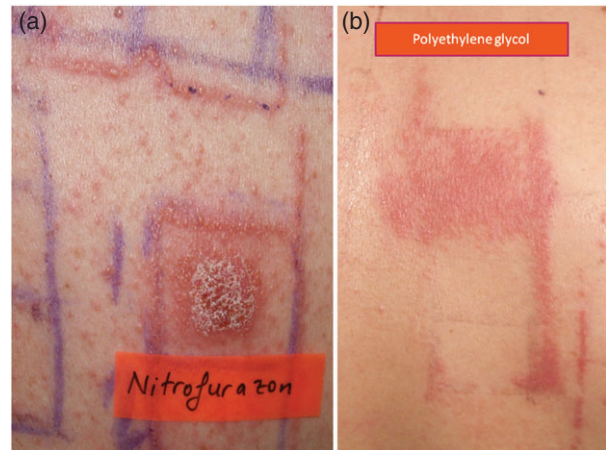


Fig. 1. Linear eczematous lesions next to the strong positive patch test reactions with a contact allergen in pet. (a) and a liquid allergen (b) resulting from linear spreading of the allergen transported by the patch test marker following leakage of the allergen.

lines thereafter (Fig. 1). The reaction was observed at D3 or later, and was exclusively related to strong to extreme positive (++ or +++) patch test reactions (Fig. 1). Linear reactions were mainly induced by liquid polyethylene glycol-400 100% (n = 3), followed by two other contact allergens in pet. Thus, liquid allergens seem to be prone to allergen spreading. Considering the previously reported case with contact allergy to the skin marker ink (5), this possibility could be excluded as only the area adjacent to the responsible patch test reaction was involved.

Discussion

Spreading of the contact allergen beyond the intended patch test area can be regarded as the primary problem, as indicated by the linear eczematous reactions. This may especially, but not only, occur with liquid allergens if the chamber is overfilled and/or adhesion of the tape is not sufficient. However, the use of an adequate patch test technique should prevent such 'leakage' (1–3). Finally, we would like to point to the possibility of transportation of allergens during marking, and possibly remarking, of the test areas with a skin marker pen, which may lead to unwanted eczematous lesions adjacent to strong (++) or extreme (+++) positive reactions.

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