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Allergic contact dermatitis caused by motorcycle heated grips

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Several reports have documented contact allergy to *N*-isopropyl-*N'*-phenyl-*p*-phenylenediamine (IPPD) resulting from contact with everyday products, such as elastic in undergarments, face masks, boots, gloves, and rubber finger-stalls (1). We report an unusual case of allergic contact dermatitis located on both palms induced by contact with heated motorcycle grips.

Case Report

A 32-year-old non-atopic man presented with a history of pruritic, sharply demarcated erythematous and vesicular eruption of the palms and palmar sides of the fingers. The lesions had started during winter, 2 months after the use of a new motorcycle, equipped with heated grips (Fig. 1). The dermatitis recurred every time that the patient switched on the warm hands controller, and improved with the use of gloves and topical corticosteroids.

Patch tests were performed with the Italian Society of Allergological, Occupational and Environmental Dermatology (SIDAPA) baseline patch test series, and read according to ICDRG recommendations. Allergens were provided by F.I.R.M.A. (Florence, Italy), applied on the patient's back with van der Bend® Square Chambers (van der Bend, Brielle, The Netherlands), and fixed with Medipore™ tape (3M Company, Minneapolis, MN, USA); readings were performed on day (D) 2, D4, and D5. Positive (++) reactions to IPPD 0.1% pet. were observed



Fig. 1. Clinical lesions; positive patch test reaction to IPPD (0.1% pet.); and motorcycle heated grip.

on D2, D4, and D5. *p*-Phenylenediamine (PPD) 1% pet., included in the baseline series, yielded a + reaction; carba mix (3% pet.) remained negative. The weak positive reaction to PPD was interpreted as a cross-reaction, as the patient had never used hair dye and had never had a black henna temporary tattoo.

The distribution of lesions corresponded to the contact area of the hand grips; moreover, the patient gave a positive history of previous eczema resulting from contact with rubber earplugs. Previous contact with bicycle and motorcycle rubber hand grips had, in contrast, been well tolerated. The dermatitis resolved quickly with the use of topical corticosteroids, and the patient has remained asymptomatic when using silicone hand grips.

Discussion

Allergic contact dermatitis caused by IPPD contained in a motorcycle hand grip was first described in 1987 (2);

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another case of a 10-year-old boy with palmar hyperhidrosis after contact with black rubber bicycle hand grips has been reported (3). Friction, heating, and sweating, associated with the repeated use of the hand grip warming system, may have favoured the elicitation of allergic contact dermatitis. Probably, the heated hand grips also

increased the release of the allergen and its penetration through the skin, leading to exposure sufficient for elicitation. We report this case to emphasize the risk of development of allergic contact dermatitis when heated rubber motorcycle grips are used.

References

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