

Allergic contact dermatitis in a nurse caused by airborne rubber additives

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Healthcare professionals are at risk of developing allergic hand dermatitis caused by exposure to accelerators in rubber gloves (1). The prevalence of contact allergy to thiurams peaked during the late 1980s and early 1990s, when as many as 18% of healthcare workers had positive patch test reactions to these chemicals, nearly always in relation to dermatitis on the hands or forearms (1). Monitoring during 1994–1998 showed that thiuram sensitivity had decreased to 12.2% among healthcare personnel, mainly because of a change in rubber glove manufacturing (1). Other investigations have since confirmed this decline (2, 3, 4). We present a unique case suggesting facial allergic rubber dermatitis caused by airborne spread of rubber accelerators.

Case Report

A 48-year-old atopic woman was referred for evaluation of chronic work-related periorbital dermatitis. Working as a theatre nurse for 16 years, she had some years earlier experienced allergic contact dermatitis on the hands caused by thiuram contact allergy, which cleared rapidly after she switched to thiuram-free gloves. However, for several years, she suffered from chronic scaly dermatitis on the eyelids and glabellar region (Fig. 1) although she did not use glasses, cosmetics, or other skin care products. She consulted several ophthalmologists, and had intermittently used eye drop solutions containing chloramphenicol and dexamethasone, with no effect. She experienced clearance of the dermatitis during holidays and time away from work.

Patch testing was performed with the European baseline series, additional extended rubber chemical



Fig. 1. Mild allergic contact dermatitis caused by airborne spread of rubber chemicals.

accelerators, topical medicament allergens, and finally her eye drops and gloves used at the workplace. Finn Chambers® (8 mm; Epitest Ltd, Oy, Finland) on Scanpor tape® (Norgesplaster A/S, Alfarma, As, Norway) were used. The patch tests were applied to the upper back and occluded for 2 days. Readings were performed on D2, D3, and D7, according to the recommendations of the International Contact Dermatitis Research Group (5). There were positive test reactions to tetramethylthiuram monosulfide (2+ on D3, 2+ on D5, and 1+ on D7), tetramethylthiuram disulfide (2+ on D3, 2+ on D5, and 1+ on D7), tetraethylthiuram disulfide (2+ on D3, 2+ on D5, and 1+ on D7), cyclohexylbenzothiazyl sulfenamide (1+ on D3, 2+ on D5, and 2+ on D7), dibenzothiazyl disulfide (1+ on D3, 2+ on D5, and 2+ on D7), and morpholinyl mercaptobenzothiazole (1+ on D3, 2+ on D5, and 2+ on D7). Patch testing with a surgical glove from the workplace gave a positive reaction (2+) on D3 and a doubtful reaction (+?) on D7. Zinc dimethyl dithiocarbamate gave doubtful reactions (+?) on D3, D5, and D7. In addition, a prick test with natural rubber latex proteins was conducted, and gave a negative result.

Discussion

Airborne contact dermatitis is probably an underestimated clinical problem, and is most often observed following occupational allergen exposure (6, 7). Airborne contact dermatitis caused by rubber accelerators is very unusual indeed, and, to our knowledge, has so far been

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described only in a non-occupational setting (8). Our patient most likely developed allergic facial dermatitis because of airborne spread of rubber chemicals or nitrile from surgical gloves and perhaps other rubber-containing materials and devices used in the hospital where she worked. The case was reported to the National Board of Industrial Injuries for worker's compensation, and we advised the patient to change her work situation. This

case report suggests that rubber chemicals, as well as latex proteins, may become airborne and result in allergic contact dermatitis at distant sites.

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