

Benzoyl peroxide as a cause of airborne contact dermatitis in an orthopaedic technician

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Key words: benzoyl peroxide; occupational; airborne allergic contact dermatitis; healthcare workers; allergen replacement, prevention.

Benzoyl peroxide (BPO) is frequently used as a topical treatment for acne patients. 1st industrial use is also frequent in the production of plastics in dentistry, medicine and electronics. While BPO is a strong irritant (1, 2), allergic contact dermatitis has rarely been reported in acne patients (3), though more often in an occupational setting, for example among dental technicians (4–6).

Case Report

A 32-year-old male orthopaedic technician had had recurrent eczema of the face, neck and arms for 2 years (Fig. 1). Symptoms were clearly work-related. He described a dusty working environment as a result of heating and cutting materials such as plaster. He gave a history of allergic rhinitis in March and April, but not of allergic asthma. He showed a normal total serum IgE (43.90 kU/L), low specific IgE to birch pollen (0.70 kU/L) and no specific IgE to grass or mugwort pollen (Pharmacia CAP, Uppsala,



Fig. 1. Eczematous skin lesions of the patient.

Sweden). A prick test was positive for birch (6 mm) and mugwort pollen (4 mm), the positive control histamine (10 mg/mL) being 6 mm, while sodium chloride (0.9%) was negative. Patch testing with the standard, disinfection and adhesive series of the German Contact Allergy Group as well as potential allergens from the workplace was performed. A strongly positive reaction, with papulovesicles, was shown to a hardener substance (Lucidol® hardening gel) and a doubtful positive reaction to BPO 1% pet. With individual ingredients of the hardener (5% BPO and Lucidol BT 50) we obtained clearly positive reactions to BPO 1.0 and 2.5% pet. (Fig. 2), but no reaction when the hardener was tested without BPO. After identification of BPO as the source of the airborne contact dermatitis, the allergen was eliminated at the patient's workplace. 8 weeks later the eczematous skin lesions had resolved completely.

Comment

BPO is a potent oxidizing agent widely used in topical applications and as a preservative in resin synthesis. Allergic contact dermatitis caused by BPO has rarely been reported in long-term treated patients,

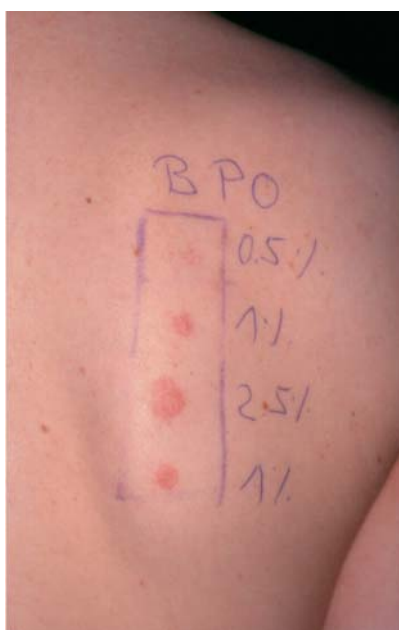


Fig. 2. Patch test results at D3 to BPO at different concentrations.

e.g. in acne (3), indicating its low potential allergenicity. However, allergic contact dermatitis from BPO may develop as a consequence of occupational exposure, affecting, for example, workers in the electronics and plastics (epoxy resins and catalysts) industries. Two similar cases of airborne contact dermatitis in BPO sensitized podiatrists were reported by Dejobert *et al.* (7). The present case demonstrates not only the importance of patch testing with the patient's own material, but also that the guided choice of alternative products in modern resin synthesis technology can then allow BPO-sensitive patients to continue working in the occupation for which they were trained.

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