

Allergic contact dermatitis from a medical device, followed by depigmentation

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A 50-year-old non-atopic patient was referred from the Pulmonary Diseases Department with eczema of the scalp and neck. He had a sleep apnea for which he had to use nasal continuous positive air pressure (CPAP, Fig. 1). After about a year, he developed erythematopapular vesicular lesions, under the black neoprene attachment bands, followed by hair loss and then regrowth of depigmented hair (Fig. 2). 1 year later, no repigmentation of this hair has yet occurred. He switched to another type of attachment band (fabric and rubber), with which he showed only minimal eczematous lesions, without further hair loss.

Patch tests were applied with the European standard series, a rubber chemicals series, and pieces of attachment bands, with the following results.

	D 2	D 4
standard series	—	—
rubber series:		
diethylthiourea (1% pet.)	++	++
dibutylthiourea (1% pet.)	—	—
diphenylthiourea (1% pet.)	—	—
own material:		
pieces of attachment band	—	—

Pieces of attachment band were analyzed for diethylthiourea, ethanol extracts being made and investigated by HPLC. 2 different mobile phases of acetonitrile and water (20:80 and 10:90, respectively) were used. The column (250×4.6 mm ID) was packed with Nucleosil C₁₈ 5-μm particles, and the UV detector was operated at 240 nm. Diethylthiourea was thus demonstrated at 0.05–0.06% (w/w). Diethylthiourea could not be demonstrated in the alternative band (detection limit 1 ppm), though only a few scrapings were analyzed, to preserve function. Because he still had minimal eczema, we advised the patient to cover these bands with cotton. In this way, he is currently wearing the device without any problems.

Discussion

Contact allergy to thiourea derivatives, used in the manufacture of neoprene, has been reported since 1960. Neoprene is used for diving and surfing suits, other swimming equipment and athletic shoes, fire-resistant clothing, and waterproofing materials (1). Thiourea derivatives have also been identified as contact allergens in limb prostheses, photocopying, silver polish, and other



Fig. 1.



Fig. 2.

sources (2, 3). As far as we know, the present report is the 1st of contact allergy to diethylthiourea in the neoprene attachment bands of a CPAP system.

The occurrence of depigmented hair after the hair had fallen out on eczema sites also make this case unusual. Alopecia areata may possibly have been triggered at these sites: no depigmentation occurred on non-hairy eczema sites. Contact leukoderma has been described with para-phenylenediamine, squaric acid dibutylester, para-tertiary-butylcatechol and hydroquinone (4–9), but not with thiourea derivatives.

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Allergic contact dermatitis from thimerosal in an electrophoresis gel

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Thimerosal is a sodium salt of o-ethylmercurithiobenzoic acid used as an antiseptic and preservative in topical medicaments, cosmetics and vaccines. Sensitization to it has been reported in the UK (1), Denmark (2) and Austria (3).

A 52-year-old non-atopic hospital laboratory technician presented with a 4-year history of symmetrical vesicular eczema of the sides of the fingers and fingertips, which occurred each time that she handled electrophoresis gels in the laboratory and resolved completely when she avoided this work.

Patch testing with the European standard series was negative, but thimerosal (0.1% pet.), using Finn Chambers, was strongly positive at 2 and 4 days. She worked with 2 different electrophoresis gels: serum protein gel containing 0.02% thimerosal as preservative; and alkaline phosphatase gel which did not contain thimerosal. Patch testing to the gels (as is) gave a positive reac-

tion to the serum-protein gel but no reaction to the alkaline phosphatase gel at 2 and 4 days. Other components of the gels were negative.

We recommend that protective gloves should be worn when handling electrophoresis gels.

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