

2. Pecquet C, Pradalier A, Dry J. Allergic contact dermatitis from ethanol in a transdermal estradiol patch. *Contact Dermatitis* 1992; 27: 275–276.
3. Holdiness M R. A review of contact dermatitis associated with transdermal therapeutic systems. *Contact Dermatitis* 1989, 20: 3–9.
4. Boehncke W-H, Gall H. Type IV hypersensitivity to topical estradiol in a patient tolerant to it orally. *Contact Dermatitis* 1996; 35: 187–188.

Contact dermatitis from paraphenylenediamine used as a skin paint

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Key words: allergic contact dermatitis; para-phenylenediamine; cosmetics; skin dye. © Munksgaard, 1998.

Para-phenylenediamine (PPD) and related compounds have been used for many years as permanent or semi-permanent chemical hair dyes, and their potential as sensitizers has long been well established (1).



Fig. 1.



Fig. 2.

Case Reports

Case no. 1

A 32-year-old Somali Moslem woman developed an acute blistering eruption on the dorsum of her hands, forearms and feet 2 weeks after a friend had applied a PPD-containing black hair dye (Bigen®) as a decorative skin paint. Blistering was localized to areas of dye application (Fig. 1) and some areas showed additional pustulation. She had previously used henna-containing skin paints, but had never used chemical hair dye. The eruption resolved on treatment with potent topical corticosteroids, but marked post-inflammatory hyperpigmentation was evident on follow-up a year later. Patch testing to the standard series and a hairdressers series showed the following positive results.

	D2	D4
PPD base 1% pet.	++	+++
toluene-2,5-diamine 1% pet.	++	++
N-phenyl-p-phenylenediamine 0.25% pet.	?+	++

Case no. 2

A 23-year-old Somali Moslem woman developed a blistering eruption on the hands and feet a week after application of a 'black powder'-containing skin dye in a local beauty salon (Fig. 2). Areas of skin that had been painted with a henna-containing dye were unaffected. We were unable to confirm the ingredients of the skin dye, but patch testing showed the following positive results:

	D2	D4
PPD base 1% pet.	+	++
toluene-2,5-diamine 1% pet.	—	+
henna powder 10% aq.	—	—

Case no. 3

A 25-year-old woman partook of the local custom of 'henna' skin decoration whilst on holiday in Goa. A large yin-yang sun was painted on her left forearm, and 2 weeks later, a further small decoration was applied to

the upper arm. The following day, she developed an intense itchy, swollen, erythematous reaction which resolved over 3 weeks. She had never dyed her hair or used any temporary colorant. On returning to the UK, she was patch tested to PPD base 1% pet., and showed a ++ reaction at 2 and 4 days.

Comment

The incorporation of PPD into hair dyes in the EU is permitted to a maximum concentration of 6% (as free

base) in the reconstituted product. We have found only 1 brief report of the use of PPD used as a skin 'tattoo' (2) and draw attention to this practice and the associated risk of skin sensitization.

References

1. Kligman A M. The identification of contact allergens by human assay. *J Invest Dermatol* 1966; 47: 393-409.
2. Downs A M R Kirkup M. Minerva-photofinish. *BMJ* 1997; 315: 1722.

Occupational contact allergy to nifuroxazide simulating prurigo nodularis

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Key words: nifuroxazide; p-hydroxybenzoic acid (5-nitrofurfurylidene) hydrazide; CAS 965-52-6; nitrofurans; medication; contact allergy; occupational. © Munksgaard, 1998.

Nifuroxazide is an oral bactericide used in the treatment of acute and chronic diarrhoea. It is marketed under the trade names of Ambatrol, Antinal, Bacifurane, Ercéfur-yl, and Panfurex (France). In Poland, it is manufactured by Polfa Co., Grodzisk Mazowiecki, and marketed under the trade name Nifuroksazyd® as coated tablets and, for children, as a 4% suspension. Exanthems are specified as a possible side-effect of the drug. Acute generalized exanthematous pustulosis following nifuroxazide intake has also been reported, the patient reacting positively to patch tests with 10% nifuroxazide in pet. and aq. (1).

Case Report

A 47-year-old woman, with no personal or family history of atopy, was referred to our Institute because of extensive dermal lesions on her upper extremities and trunk; these included erythema, papules and numerous erosions (Fig. 1). The lesions were associated with very severe itching. Since 1986, the patient had operated a dispensing apparatus filling glass bottles with liquid medicines. Her duties included checking the correct level of liquid in the bottles, checking the caps and cleaning the dispensing apparatus (bottle breakages were relatively frequent). Several different medicines were dispensed, including ibuprofen, pyrantelium, bisseptol, and vit. A, D₃, and E (Polfa Co., Poland). Since 1993, the apparatus had been used to dispense a nifuroxazide suspension. After several months of work, the patient developed skin lesions which she soon associated with nifuroxazide. She was treated with success, but the lesions reappeared when she returned to work.

The 4% Nifuroksazyd® suspension contained nifurox-



Fig. 1. Eczematization and excoriation of a papular eruption in a patient with occupational contact allergy to nifuroxazide.