

Short Communication

Positive patch tests to nigrosine

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Nigrosine is a dye mixture prepared by heating (180–200°) nitrobenzene, aniline and aniline hydrochloride, in the presence of an iron or copper catalyst. It is virtually insoluble in water, slightly soluble in ethanol, benzene and toluene, and very soluble in stearic and oleic acids (1). Industrially, this blue-black solvent dye is used to color alcoholic solvents, varnishes, shoe polishes, lacquers, wood stains, marker-pencil inks, printing inks and spirit finishes for leather. It is also used as a shark-repellent.

Case Report

A healthy 40-year-old construction worker presented with flares of hyperkeratotic eczema involving his palms and soles for the last 10 years. The lesions did not heal during holiday periods, and were not adequately controlled with topical corticosteroids. He had no atopic background, and used leather gloves at work because of intolerance to rubber. At home, he cleaned his shoes with coloured shoe polishes without any protection: this caused him slight pruritus and hand dermatitis. After putting on recently cleaned shoes, a pruriginous scaly erythema involved both feet. The following patch tests were positive (Table 1).

Discussion

We found only 1 previous case of contact dermatitis with a positive patch test (1% pet.) to nigrosine (2). To rule out an angry back syndrome, we patch tested the patient again only to nigrosine 1% pet., 1 month later, giving a +++ reaction at both 2 and 4 days. 12 healthy persons

were used as controls, with no reaction in any of them. The patient's condition has disappeared just by avoiding cleaning his shoes and wearing only new cotton shoes. We concluded that nigrosine in shoe polishes might have been at least partly responsible for allergic contact dermatitis, and are reporting the case because of the rarity of positive patch test reactions to nigrosine.

References

1. Clark G. *Staining procedures*, 4th edition. Baltimore: Williams and Wilkins, 1981: 412.
2. Calnan C D, Connor B L. Carbon paper dermatitis due to nigrosine. *Berufsdermatosen* 1972; 20: 248–254.

Table 1. Positive patch test results

Allergen	D2	D4
GEIDC standard series		
potassium dichromate	+	+
epoxy resin	+	+
carba mix	+++	+++
mercaptobenzothiazole	+++	+++
PPD	–	+
mercapto mix	+++	+++
thiuram mix	+++	+++
Shoe series (Chemotechnique)		
IPPD	+++	+++
Disperse Orange 3	–	+++
thiuram mix	+++	+++
potassium dichromate	+++	+++
2-mercaptobenzothiazole	+++	+++
epoxy resin	+++	+++
4-aminoazobenzene	+++	+++
nigrosine (1% pet.)	+++	+++