

**Occupational contact
dermatitis of both hands
because of sensitization
of black rubber**

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Elisabeth B. M. Kroft and
Pieter G. M. van Der Valk

Department of Dermatology, Radboud
University Nijmegen Medical Centre,
NL-6500 HB Nijmegen, The Netherlands

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phenylenediamine.



Fig. 1. Clinical picture of a dry hyperkeratotic and lichenoid hand eczema and the egg stamper.

Nickel sulfate, disinfectants and rubber components were reported the most relevant sensitizing agents leading to occupational allergic contact dermatitis among health-care workers (1). In this case, an *N*-isopropyl-*N*-phenyl-4-phenylenediamine (IPPD) contact dermatitis was diagnosed in a man with an unusual profession.

Case Report

A 66-year-old right-handed male patient, without a personal history of eczema or atopy, presented himself with dry hyperkeratotic and lichenoid dermatitis on both hands and lower arms. The dermatitis was more severe on his right hand.

The skin lesions started 2 years after beginning to work in the egg stamper factory of his son. This device is made of black rubber (Fig. 1). His medical history did not show any allergic contact reactions.

Specific serum immunoglobulin E (IgE) to latex was negative. Patch testing with the European Standard Series and the rubber series and material from the egg stamper showed a hypersensitivity of the delayed-type ++ reaction to stamper material and against IPPD. The *para*-phenylenediamine (PPD)-free base showed no positive reaction.

Discussion

This patient showed allergic contact reaction to IPPD. Repeated exposure to IPPD in the black rubber containing egg stampers probably caused his dermatitis. Irritant and allergic contact dermatitis account for 90–95% of all occupational skin diseases.

The vast majority of patients with occupational contact dermatitis present with hand eczema (2). In a series of 145 patients with confirmed rubber allergy, the thiuram mix is the most (68%), frequent sensitizer. The black rubber mix accounted for 23% of the positive test allergens. More than half of these patients had an occupational exposure to rubber leading to sensitization (3). IPPD is chemically related to PPD-free base; cross-reactivities between these substances have been described (4).

N-1,3-dimethylbutyl-*N*-phenyl-4-phenylenediamine (DMPPD) can be used as a substitute of IPPD in the production of black rubber. Unfortunately, many patients allergic to IPPD also have a hypersensitivity of the delayed type for DMPPD (5). Occupational allergic contact dermatitis is an important medical and occupational health problem. If undiagnosed, the disease may persist, resulting in severe and permanent disability to the worker (6).

After establishing this diagnosis, he changed his work and became the accountant of the egg stamper production fabric. The dermatitis of his hands and lower arm healed.

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Address:

Elisabeth B. M. Kroft, MD
Department of Dermatology
Radboud University Nijmegen
Medical Centre
PO Box 9101, NL-6500 HB Nijmegen
The Netherlands
Tel: +31243617245
Fax: +31243541184
e-mail: i.kroft@derma.umcn.nl