

CONTACT POINT

Relapsing polyisoprene glove allergic contact dermatitis: Another call for more complete glove package label declaration

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A 63-year-old surgical technician developed recurrent dorsal hand eczema when his hospital stopped providing his previously utilized special-order neoprene gloves. Despite a previous history of industrial hand dermatitis, the patient had remained free of signs and symptoms for the last decade while using these special-order gloves, emollients, and fragrance-free products.

The patient re-presented with marked hyperpigmentation over his dorsal hands bilaterally. A clinical diagnosis of occupational allergic contact dermatitis (ACD) was made, and limited work and avoidance of gloves were prescribed. Patch tests were performed according to ICDRG methods, and showed ++ positive reactions to diphenylguanidine and carba mix. The same results were seen in patch testing in 2003.

Two months later, additional patch testing was performed with all gloves from the patient's workplace, tested "as is". The results showed +++ positive reactions to all gloves except one, confirming the diagnosis of occupational ACD secondary to glove allergy. Upon contact with the glove manufacturer, the culprit gloves were later found to be polyisoprene gloves containing the rubber accelerator diphenylguanidine. Retesting with the non-reactive polyisoprene glove gave a negative result, and, after repeated calls and emails, this glove was declared to be diphenylguanidine-free.

DISCUSSION

Since the 1980s, there has been a great increase in glove use among healthcare workers (HCWs) in order to prevent blood-borne infections. Concurrently, a growing number of allergic reactions to rubber

gloves have dominated the medical literature. Because rubber gloves have excellent physical and protective properties and are cost-effective, it is expected that they will remain in use. Thus, occupational ACD secondary to glove allergy may remain a common diagnosis in occupational dermatology.

Rubber accelerators constitute an important group of contact allergens for rubber glove users. In fact, HCWs have been found to have a high prevalence of positive patch test reactions to rubber accelerators.¹ In rubber glove production, these chemicals speed up the process of rubber vulcanization. Goodier et al outlined the accelerators used in medical examination and surgical gloves for 11 major glove manufacturers within the United States—the most common were thiurams, dithiocarbamates, 1,3-diphenylguanidine, and mercapto-benzothiazole.² Accelerator-free medical gloves were found to be efficacious in the secondary prevention of ACD caused by rubber accelerators in HCWs.¹

After several interactions with the glove manufacturers, the gloves causing allergic reactions were found to contain diphenylguanidine, whereas the patch test-negative glove—also polyisoprene—did not. The patient has worn the patch test-negative polyisoprene gloves for one year without recurrence of dermatitis.

The chemical constitution of gloves is accessible through telecommunications with the glove manufacturing companies. However, this valuable information, which may have prevented the relapse of our patient's hand dermatitis, was not readily available on the packaging. As preventive measures, allergens should either be entirely excluded from the manufacturing process of rubber gloves, or noted on the package label if they are present. Others have also argued for more precise labeling of gloves to assist dermatologists in choosing the right gloves for patients.^{3,4}

Conflict of interest

The authors declare no potential conflict of interests.

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