

Allergic contact dermatitis of the hands caused by thiurams in bicycle cuffs

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KEYWORDS: allergic contact dermatitis, bicycle cuffs, case report, thiuram

CASE REPORT

A 28-year-old woman, university student, non-smoker, was referred to our eczema unit for recurrent, intensely itching eczematous lesions of both hands lasting 8 months. A personal and family history of atopic dermatitis was reported. Previous treatment with topical corticosteroids of high potency improved the lesions; however, recurrence usually followed within a few days of stopping treatment. The itching was intense before the appearance of eczematous lesions. In the patient's history, the only relevant fact was that she traveled daily to the university with a bicycle for 1 year, the material of the bicycle cuffs being rubber (Figure 1).

Physical examination showed erythematous and hyperkeratotic eczema located on the palm surfaces of both hands, extending to the lateral fingers (Figure 2). Blood tests were all normal. Patch tests were performed with the European comprehensive baseline series (Chemotechnique Diagnostics, Vellinge, Sweden) and a rubber additives series (Chemotechnique Diagnostics). Moreover, 1 cm of bicycle cuff "as is" was patch tested. The results were interpreted according to International Contact Dermatitis Research Group criteria. Patch tests were read on day (D) 2 and D4. The patient showed positive reactions to thiuram mix and the bicycle cuff. Tetramethylthiuram 1% pet. and tetraethylthiuram disulfide 1% pet. were positive in the rubber additives series. We diagnosed contact allergic eczema to thiurams caused by the bicycle cuffs.

The use of cloth gloves was recommended and the corresponding allergen information was given. Follow-up at 3 months showed complete resolution of eczema without treatment, as well as the absence of new eczematous lesions.

DISCUSSION

The prevalence of thiuram sensitization in European patients is 1.7%–2.4%.¹ Thiurams are used as vulcanizing accelerators in the production of natural or synthetic rubbers. Classically, thiuram allergy is predominantly seen in workers who wear latex or synthetic rubber gloves, such as physicians, nurses, food processors, and cleaners. A relevant epidemiological change has been described in the incidence and

prevalence of thiuram allergy in terms of a decrease in the number of contact allergic cases to these allergens as a result of improved rubber glove production and gloves having barrier linings made of materials such as cotton.²

There are multiple cases in the literature that relate allergic contact eczema to thiuram and different materials such as bandages for venous ulcers,³ mouthpieces of trumpets,⁴ and even in mobile phone cases.⁵ Similar to metals or preservatives, contact with materials made with rubber and vulcanization accelerators is quite frequent. These allergens are present in many everyday objects that the patient usually does not specify in the consultation. For this reason, the history plays a crucial role in identifying possible sources of exposure, as in our case. The bicycle cuffs



FIGURE 1 Bicycle cuff of our patient

FIGURE 2 Erythematous and hyperkeratotic eczema located on the palms



were responsible for contact eczema in our patient. Associated factors such as increased palmar sweating or a history of atopic dermatitis could have played a relevant role in the development of sensitization.

Excluding risk groups, mainly sanitary and cleaning, the use of cloth gloves is sufficient to solve the problem. In an article published by Goodier et al,⁶ the gloves recommended mainly for health-care professionals are discussed. In conclusion, we present a new case of allergic contact eczema to thiurams present in the bicycle cuffs our patient was exposed to.

CONFLICTS OF INTEREST

None to declare.

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How to cite this article: Navarro-Triviño FJ, Ruiz-Villaverde R. Allergic contact dermatitis of the hands caused by thiurams in bicycle cuffs. *Contact Dermatitis*. 2020;82:176-177. <https://doi.org/10.1111/cod.13420>