

CONTACT POINT

Occupational allergic contact dermatitis caused by thiourea in a jewelry cleaner

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KEYWORDS: allergic contact dermatitis, CAS no. 62-56-6, case report, jewelry cleaner, thiourea**CASE REPORT**

An otherwise healthy 42-year-old nonatopic woman was referred to our Contact Eczema Department with a 3-month history of chronic hand eczema. She had begun working in a jewelry store 2 months before the onset of the dermatitis. The hand dermatitis partially improved on weekends. The topical application of high-potency corticosteroids (clobetasol propionate 0.05% cream once daily) did not allow the control of dermatitis. She linked the dermatitis to a jewelry cleaner that she used daily at work without protective gloves. Physical examination revealed a symmetrical, hyperkeratotic and fissured chronic fingertip dermatitis (Figure 1A). The first three fingers of both

hands were mostly affected, mainly the thumbs (Figure 1B). The jewelry cleaner was identified (Jolibijoux Silver Pro Cleaning Solution, Jolibijoux Pessac, France). The event was communicated to the manufacturer, who supplied information on ingredients.

Patch tests were performed with the European Comprehensive Baseline Series, plastic&glue series, rubber series, and disperse Red 17 1% pet. (all from Chemotechnique Diagnostics, Vellinge, Sweden), and the diluted jewelry cleaner at 1%, 5%, and 10%. The patch tests were read, according to criteria of the International Contact Dermatitis Research Group, on day (D) 2 and D4. The patient showed a positive patch-test reaction (++++) to all three dilutions of the jewelry cleaner 1%, 5%, and 10% (Figure 1C), and thiourea 0.1% pet (++). Ten



FIGURE 1 (A) Hyperkeratotic and fissured eczema located on the fingers of the both hands. (B) Hyperkeratotic and fissured pulpitis (thumbs). (C) Positive patch test for own prepared dilutions of Jolibijoux silver pro cleaning solution in D4 (++++)

control patients showed no reaction to the different dilutions of the jewelry cleaner, which according to the manufacturer's information contains thiourea. Thus allergic contact dermatitis caused by thiourea in Jolibijoux Silver Pro Cleaning Solution was diagnosed. The use of two pairs of rubber accelerator-free gloves, such as Sensicare Free gloves (Medline International Iberia S.L.U, San Fernando de Henares, Spain) was recommended. The 3-month follow-up showed a complete healing of the hand dermatitis.

DISCUSSION

Thioureas are used as accelerators in the manufacture of synthetic rubber products, mainly neoprene and foam rubber. Several cases report of allergic contact dermatitis have been published, especially after sensitization with polychloroprene (neoprene).^{1,2} In addition, a report of occupational contact dermatitis have been published.³ Recently, a report describing systemic pustular allergic contact dermatitis caused by thioureas have been published.⁴ The most important sources of contact are protective clothing, swim suits, orthopaedic joint braces, and less frequently photocopy papers and photography products. However, there are also lesser known sources of contact to thioureas, such as jewelry cleaners. Thioureas act as stain remover in these products. The three main thioureas are diphenylthiourea (DPTU), diethylthiourea (DETU), and dibutylthiourea (DBTU).⁵ Sensitization to DETU is most frequent.⁶ In our patient, only thiourea 0.1% pet was positive, with DPTU 1% pet, DETU 1% pet, and DBTU 1% pet being negative. The jewelry cleaner contained thiourea among its ingredients. Knowing the ingredients of the suspected products is crucial to establish the cause of allergic contact dermatitis.

In conclusion, we present the first case of occupational allergic contact dermatitis caused by thioureas as an ingredient in a jewelry cleaner. Although the main source of contact for this allergen is neoprene, we must not forget less frequent sources of allergen exposure.

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CONFLICT OF INTEREST

The authors declare no conflict of interests.

AUTHOR CONTRIBUTIONS

Francisco José Navarro Triviño: Conceptualization; data curation; investigation; methodology; project administration; validation; writing-original draft; writing-review & editing.

INFORMED CONSENT

Written informed consent was obtained from the patient for publication of this case report.

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