

CONTACT POINT

Allergic contact dermatitis caused by octylisothiazolinone in a leather sofa

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Email: yassaman.alipourtehrany@hcuge.ch**KEYWORDS:** allergic contact dermatitis, CAS no. 26530-20-1, case report, leather, methylisothiazolinone, octylisothiazolinone, preservative

Octylisothiazolinone (OIT) is a preservative agent with multiple uses in industry. We report a case of non-occupational contact dermatitis caused by OIT.

CASE REPORT

A 50-year-old atopic woman, without a history of contact dermatitis, presented with a severe itchy vesicular rash on the lateral part of her right shoulder and arm. She reported that the eruption was on sites that had come into direct contact with her new leather sofa bought in Switzerland. No extra products had been applied to her sofa. She observed the same eruption on her back after driving her new car with leather seats after long trips.

We patch tested the patient with the European baseline series, a preservative, a textile series, a piece of her sofa's leather, and a piece of her car seat's leather "as is". Patch test materials were supplied by Chemotechnique Diagnostics (Vellinge, Sweden). At the readings on day (D) 3 and D5, the patch tests showed positive results for methylisothiazolinone (MI) 0.2% aq. (++) , OIT 0.1% pet. (++) , and the sofa leather (+++) and the car leather seat (++) samples.

Leather from the sofa was sent for chemical analysis to the Official Food and Veterinary Control Authority of Geneva. Unfortunately, the car seat leather could not be tested, because it was impossible to obtain an adequate piece without damaging the seat. The amount of OIT in the leather was determined with high-performance liquid chromatography with a diode array detector (HPLC-DAD). Thiazolinone compounds were detected at several wavelengths; 274 nm for MI and methylchloroisothiazolinone, and 280 nm for OIT. Substances were identified by comparing retention times and ultraviolet spectra with those obtained for a standard solution (Sigma-Aldrich, Buchs, Switzerland). The presence of each substance in the samples was confirmed by means of its characteristic mass spectrum acquired in scan mode with an Agilent 1290 Infinity

liquid chromatography (LC) system coupled to the 6495 Series Triple Quadrupole (LC-tandem mass spectrometry) equipped with an atmospheric pressure chemical ionization operating in positive mode (Agilent Technologies, Santa Clara, California). Chromatographic conditions were the same as those used with the HPLC-DAD system. For each compound, mass spectra and isotopic pattern were compared with those obtained with the standard solutions. Because of the high concentration ranges, quantification was achieved by HPLC-DAD with reference solutions of each target compound by both external calibration and a standard addition method. The results showed the presence of MI (7.7 mg/kg) and OIT (158 mg/kg) in the sofa's leather.

DISCUSSION

OIT is a preservative agent with antifungal properties that is mainly used in manufactured products, such as water-based paints, household detergents, cutting fluids, and wood preservatives.^{1,2} The majority of reported cases of contact dermatitis caused by OIT are occupational.¹ However, because of its use in the leather and textile industry, cases of non-occupational contact dermatitis caused by OIT have been increasingly described.^{1,3} The high amounts of OIT in the leather of the sofa probably sensitized the patient. Aalto-Korte and Suuronen⁴ have suggested immunological cross-reactivity between MI and OIT. In the absence of evidence for primary sensitization to MI, it is difficult to determine which of the 2 chemicals our patient had first been sensitized to.

This case report shows the importance of testing with OIT when contact dermatitis caused by leather products is explored.

Conflict of interest

The authors declare no potential conflict of interests.

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REFERENCES

1. Aerts O, Meert H, Romaen E, et al. Octylisothiazolinone, an additional cause of allergic contact dermatitis caused by leather: case series and potential implications for the study of cross-reactivity with methylisothiazolinone. *Contact Dermatitis*. 2016;75:276-284.
2. Hamnerius N, Pontén A, Mowitz M. Textile contact dermatitis caused by octylisothiazolinone in compression stockings. *Contact Dermatitis*. 2018;78:419-421.

3. Mose AP, Frost S, Öhlund U, Andersen KE. Allergic contact dermatitis from octylisothiazolinone. *Contact Dermatitis*. 2013;69:49-52.
4. Aalto-Korte K, Suuronen K. Patterns of concomitant allergic reactions in patients suggest cross-sensitization between octylisothiazolinone and methylisothiazolinone. *Contact Dermatitis*. 2017;77:385-389.

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