

Airborne allergic contact dermatitis caused by disulfiram

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doi:10.1111/cod.12381

Key words: airborne; alcohol; allergic contact dermatitis; CAS no. 97-77-8; connubial; rubber chemicals; systemic drugs; tetraethylthiuram disulfide; thiuram mix.

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Conflicts of interest: The authors declare no conflict of interests.

Disulfiram [tetraethylthiuram disulfide; CAS no. 97-77-8] is used for the treatment of alcohol dependence. The development of widespread allergic dermatitis in rubber-sensitive patients following ingestion or implantation of this medication is known but often forgotten. Here, we describe a man who developed airborne allergic contact dermatitis after he had crushed disulfiram tablets for his spouse.



Fig. 1. Airborne contact dermatitis on the face.



Fig. 2. Airborne lesions on the neck of the same patient as in Fig. 1.

Case Report

A 61-year-old atopic (asthma) Caucasian man was referred to our department with a history of oedema of the eyelids and itchy, erythematous and scaly lesions on the face (Fig. 1), neck (Fig. 2), and upper chest, and once also on the shoulders and elbow folds, which he ascribed to cutting down pine trees for Christmas, and also, 2 months previously, to varnishing and painting a staircase. Previous patch testing by a private dermatologist had revealed contact allergy to 'rubber' (allergen not specified). Although the patient used to wear rubber boots and gloves when working in the garden, no lesions on his hands or legs were noted. As medication, the patient had been taking omeprazole daily for 2 months, and cetirizine.

Patch tests were again performed with the European baseline series, including methylisothiazolinone 0.05%

aq. (Trolab[®], Hermal, Reinbeck, Germany), and the cosmetic and rubber series (Chemotechnique Diagnostics, Vellinge, Sweden). As the patient was known to be allergic to 'rubber', and in order to avoid simultaneous multiple reactions, the individual ingredients of the rubber mixes in the baseline series were not tested. Omeprazole (tablet crushed and diluted in pet.), his own fragrance products and certain potential sensitizing ingredients of his shampoos and soaps were also tested, with IQ Ultra[®] patch test chambers (Chemotechnique Diagnostics) covered with Mefix[®] (Mölnlycke Health Care, Göteborg, Sweden). Readings were performed according to ICDRG guidelines, and showed positive reactions only to thiuram mix (D2, +; D4, +; D7, +), carba mix (D2, +?; D4, +), and methylisothiazolinone (D4, +).

As the patient had been in contact with paints that most probably contained methylisothiazolinone, airborne contact dermatitis caused by another allergen was still suspected. Therefore, we reassessed the patient's history, and he reported that he crushed Antabuse[®] tablets (Sanofi Aventis, Paris, France) for his spouse, which could explain the occasional occurrence of air-exposed skin lesions. He was advised to take preventive measures, and since he has been using a pill crusher, his problem has completely resolved.

Discussion and Conclusion

Disulfiram has been used in the management of alcohol abuse for > 50 years, and is also a rubber accelerator. Thiuram mix contains four compounds: disulfiram, tetramethylthiuram disulfide (TMTD), tetramethylthiuram monosulfide, and dipentamethylenethiuram disulfide. Cross-reactions between thiurams, especially between disulfiram and TMTD, has been proposed (1). The use of rubber gloves is the most common cause of sensitization to these compounds, which are structurally related to dithiocarbamates (also positive here).

Systemic allergic dermatitis following ingestion and implantation of disulfiram in patients previously sensitized to rubber was described by Wilson in 1962 (2), and by Lachapelle in 1975 (3), respectively. An occupational allergic contact reaction to disulfiram with lesions on the hands, arms and face in a nurse working in a mental hospital, in whom worsening after handling of disulfiram and wearing of rubber gloves was noticed, has also been described (4). To our knowledge, this is the first case report of connubial airborne contact dermatitis caused by this drug.

Patients sensitized to thiurams, whether or not in an occupational context, should be advised to use a device when crushing disulfiram tablets.

References

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