

Occupational allergic contact dermatitis from monoethanolamine in a dental nurse

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Case Report

A 44-year-old woman worked as a dental nurse since 1977 and developed a work-related vesicular dermatitis on both hands about 1 year later. She quit her job in 1982 because of the worsening hand dermatitis. Until 2002, she was a housewife and was working as a cashier. During this time, she had recurrent vesicular hand dermatitis (pompholyx) of the palms and fingertips without any other signs of inflammation like reddening or swelling. In 2002, she worked again as a dental nurse. After 4 weeks, massive skin changes occurred on both the volar and the dorsal parts of the hands, including reddening and swelling. These skin changes improved rapidly during sick leave but returned repeatedly within 1 or 2 days after working again. After a few months, she had to quit her job again.

Patch tests with German Contact Dermatitis Group series showed positive reactions to cobalt (both 1% and 0.1% pet.), nickel (both 5% and 1% pet.), povidone-iodine (10% aq.), benzalkonium chloride (0.1% pet.), ethylenediamine (1% pet.) and monoethanolamine (2% pet.) on day (D) 2 and D3. There was also a positive *cre-scendo* reaction to the disinfectant 'BIB forte™' (Alpro Dental Produkte GmbH, St. Georgen Schwarzwald) (0.01% and 0.001% aq. of the use solution, + on D1 and +++ on D2 and D3), which was used for cold sterilization of dental instruments. According to the declaration of the manufacturer, BIB forte™ contains

2-aminoethanol, which is synonymous to monoethanolamine. Unfortunately, we could not carry out patch tests with the other components of BIB forte™, but to our knowledge, the disinfectant did not contain any other known allergen. There were also no indications for a current clinical and/or occupational relevance of the other mentioned allergens, especially not benzalkonium chloride. Thus, we diagnosed an occupational allergic contact dermatitis from monoethanolamine.

Discussion

Occupational skin diseases are common in dental nurses and the most common diagnosis is the allergic contact dermatitis (1). The most common allergens are (meth)acrylates and rubber chemicals, followed by disinfectants like formaldehyde, glyoxal or glutaraldehyde, which are commonly used for the cold sterilization of instruments.

Monoethanolamine is one of the most frequent allergens in water-based metalworking fluids (2) and is also used in hair dyes (3).

To our knowledge, this is the first time, that monoethanolamine is reported as a possible allergen in disinfectants, used for sterilization of dental instruments.

References

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