

Case Study -Testing for allergy to rubber gloves: patch testing beyond the European standard series

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Introduction

A patient, who had worked in an analytical laboratory for 16 years, presented with rashes on her hands, arms, head, and torso at the NIOH's Occupational Medicine section. Although skin patch tests were negative for common rubber allergens in the European standard series (ESS), she was tested with the rubber series (RS) allergens due to her using nitrile gloves at work and improvement of her skin condition away from work.

Methodology

As the patient presented with contact dermatitis (CD), and since she had work exposures to potentially allergenic substances, she was patch tested at the NIOH's Occupational Dermatology Clinic . She was tested with the ESS, 13 metal allergens, the RS allergens (x27), and specific IgE to latex.

Results

She was thought to be atopic (family history of atopy and positive skin prick tests). IgE to latex was negative, patch testing with the ESS revealed sensitisation to cobalt chloride, nickel sulphate (present in the workplace), formaldehyde and quaternium 15 (in self-care products). The patient reacted to tetramethylthiuram disulphide, tetramethylthiuram monosulfide, tetraethylthiuram disulphide, and methenamine in the RS. Notably, the first three substances are in the thiuram mix in the ESS, to which she did not react. The ESS detected sensitisation to several common workplace chemicals, but only through testing with the more specific RS, were more

informative reactions detected and an allergy to rubber gloves, including nitrile gloves, identified.

Conclusion

Sensitisation to thiuram was instrumental in identifying the specific cause of her occupational CD. While the ESS patch tests are able to detect sensitisation to several workplace chemicals, tailoring testing by using specific series can provide more informative results. This case highlights the importance of investigating the role of putative causative exposures encountered in workplaces, the importance of a careful occupational history and workplace practices, including PPE use (gloves commonly used in various areas where she worked). Workplaces also need to manage those affected at work appropriately for a specific agent, for example, through work adaptation or relocation.

Word count (329)