

showed continuing chickpea and egg sensitivity on the SPT. Full elimination in the patient's diet is therefore continuing.

We wanted to use this case to emphasise concurrent legume and egg allergies, both consumed often in our country.

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Occupational allergic contact dermatitis from monoethanolamine in a metal worker

To the Editor:

Water-based metalworking fluids (MWF) are complex mixtures consisting of a lubricating component and other substances such as emulsifiers, corrosion inhibitors, antimicrobial agents and antioxidants. The MWF concentrates are mixed with water and used for cooling and lubricating as well as for removing metal chippings formed in the machining process.

Several MWF ingredients may cause irritation as well as allergic contact dermatitis.^{1–3} The most common causes of occupational allergic contact dermatitis in metalworkers have been alkanolamines, formaldehyde, formaldehyde releasers, and colophonium.^{4,5} However, in recent years, other ingredients of MWF may also cause contact allergy^{1,4,5} such as diglycolamine or monoethanolamine (MEA).

MEA is used in aqueous solutions for scrubbing certain acidic gases. It is used as feedstock in the production of cosmetics, soaps, textiles, paints, hair dyes, emulsions in pharmaceutical formulations and disinfectants used for sterilisation of dental instruments.

A 49-year-old man had worked in maintenance in a metalworking plant for 15 years and developed micropapular eruptions with exudation and vesicles after about nine years. The lesions were very pruritic and located in abdomen, legs and arms and genitals. While he was away from work, the dermatitis slowly improved and 15 days after resumption of work he again developed dermatitis in the same areas. The patient had no history of atopy or allergy and did not present symptoms of rhinoconjunctivitis and

asthma. He was in constant and chronic contact with soluble oil as MEA, triethanolamine, glutaraldehyde and low concentrations of different metals such as aluminium or titanium dioxide.

Biopsy of the skin lesions revealed oedema of the superficial dermis with parakeratosis focus, vesicle intraepidermal and perivascular infiltrate of lymphocytes.

Patch testing was performed using the standard series of the GEIDC (Grupo Español Investigación Dermatitis de Contacto [Spanish Contact Dermatitis Research Group]) and MEA at 5% aqua and ethanol, MEA at 2% pet, triethanolamine at 2.5% pet, glutaraldehyde at 0.2 and 0.5% aqua, titanium oxide at 5% pet. and aluminium chloride at 2% pet. The patches were applied to the patient's upper back using Curatest (Lohmann, Martí Tor, Barcelona, Spain) and removed after 48 hours. Readings were carried out at 48, 72 and 96 hours, as recommended by the International Contact Dermatitis Research Group.⁶ Both patch tests with MEA showed positive reactions (+++) with erythema, oedema and confluent vesicles (Figure 1) at 48 and 72 hours. The reaction was decreasing (++) at 96 hours. There were negative results to all standard series and to the rest of the products tested. Twenty control subjects (10 atopic and 10 non-atopic) underwent patch testing and all proved negative.

Most metalworker dermatitis is irritant, but occasionally, relevant allergens are found. In fact, MEA is one of the most frequent allergens in MWF and in the last 10 years several cases have been reported in metal workers who have been exposed to this product.^{5,7,8} MEA is used in the production of different products and so it can also cause allergic contact dermatitis in other jobs such as dental nurse⁹ and hairdresser, although it is not a major allergen.



Figure 1 Reaction to patch test with MEA 2% pet. at 48 hours.

We present a patient with a history of occupational dermatitis disease and histological findings which are compatible with acute contact dermatitis. Aetiological diagnosis was done with patch testing that was positive to both concentrations of MEA tested. We think that both the test preparation MEA 2% pet.¹⁰ and MEA 5% aqua and ethanol, can be useful to diagnose this allergic dermatitis. MEA must be tested in workers with dermatitis and exposure to this MWF such as metal workers, dental personal or hairdressers.

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