Steering wheel and gearstick dermatitis caused by chromate

Angela Tewari | Imran Khan | Lucy Ostlere

Department of dermatology, St George's Hospital, London, UK

Correspondence
Dr Angela Tewari, Department of dermatology, St George's Hospital, Tooting, London SW17 0QT, UK.
Email: angela.tewari@kcl.ac.uk

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CASE REPORT

A 37-year-old Caucasian office worker with lifelong atopic eczema presented with a 10-year history of intermittent eczema affecting his hands only. They were worse after prolonged driving, and improved dramatically within a few days off work when the patient was not commuting by car. Treatment with a potent topical steroid improved the rash, which reoccurred on cessation of treatment. There was no relevant past medical history, and the patient was taking no known medications.

On examination, there was erythema in an asymmetrical distribution affecting the centre of the left palm and the palmar aspect of the fingers of the right hand at the proximal interphalangeal joints only. Scaling, crusting and vesicles were present, and these were more prominent at the peripheries of the affected areas (Figure 1A); this is seen more clearly in Figure 1B. Scrapings for mycology gave negative results. The patient was patch tested with the European extended baseline series, and there was a + reaction to potassium dichromate. The distribution of the rash was compatible with direct contact with the leather steering wheel and leather-covered gearstick of his right-hand-drive car. Following the use of silicone covers, there was marked improvement in his hand dermatitis (Figures S1 and S2).

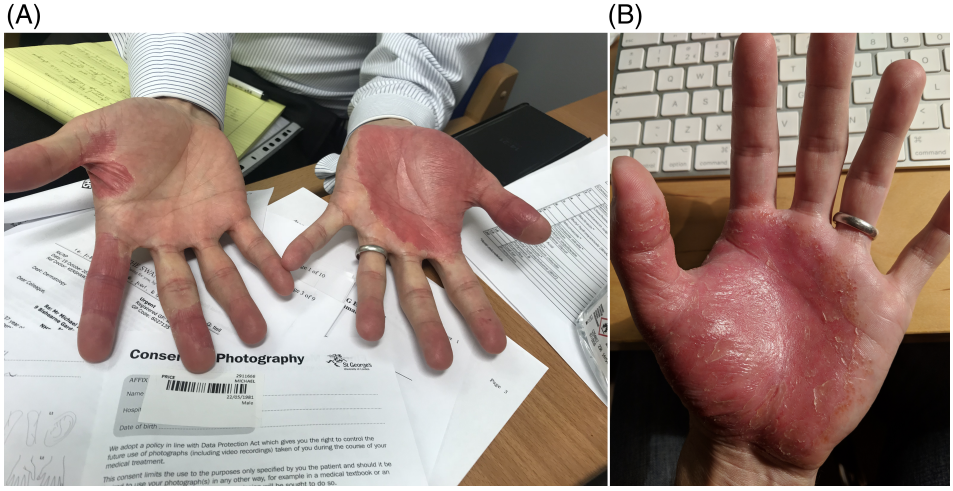


FIGURE 1 (**A**), Scaling, crusting and vesicles are more prominent at the peripheries of the left and right hands. (**B**), A close-up view of scaling, crusting and vesicles on the left hand

DISCUSSION

Contact allergy to chromium is common, and affects 1% to 3% of an adult general population[1]. Historically, chromate contact allergy has been caused by occupational exposure to cement,[1,2] but this situation has now markedly improved following a reduction of the dichromate content to 2 ppm in Europe with the addition of iron sulfate in cement.[3] Chromium salts are also used in machine-manufactured leather products and traditional hand tanning of leather, in order to stabilize collagen fibres by cross-linking, and an increase in the frequency of allergic chromium dermatitis caused by skin contact with leather products has been observed in Denmark.[4] Leather articles are currently considered to constitute the most important cause of chromate allergy in consumers,[1,2] and may contain between 4% and 5% chromate. Other potential sources of chromate exposure include cosmetics, mobile phones, tattoo ink, paint, detergents and bleaches, and metal alloys used in various consumer products and medical implants.[5]

One of the distinctive features of chromate allergy to leather is chronic, recurrent, vesicular hand eczema[2] resulting from contact with leather gloves, furniture, jackets, and bags, although, previously, foot dermatitis was a more common presentation.[6] This is the first reported case of contact allergy to chromate in leather of a steering wheel and/or gearstick causing localized, chronic contact dermatitis of the hands. Our patient may have been sensitized by previous chromate exposure or from prolonged contact with the leather in his car, with sweat being a contributory factor. This case also shows that silicone covers can be effective in management.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

ORCID

Angela Tewari https://orcid.org/0000-0002-8789-7353

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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