

Occupational cobalt sensitivity in 2 hard-metal press operators

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Key words: cobalt; metal press operators; occupational contact dermatitis.

Cobalt often contaminates nickel and coexists with chromate in cement. Cobalt allergy is frequently accompanied by sensitivity to nickel (1, 2) or chromate (3), and rarely isolated (4).

Case Reports

Case no. 1

A 46-year-old press operator presented with a 6-month history of work-related hand and wrist dermatitis. For the past 9 months, she had scooped a powder mix of tungsten carbide, tin, nickel and cobalt into the press, and worked a lever to punch out objects of compressed powder. These were transferred by hand to be sintered (heated), when cobalt, having the lowest melting point, binds together the unmelted carbide to form 'hard metal'. Gloves, overalls and a barrier cream were provided. The patient was not atopic and did not report any previous reactions to metal objects.

She was patch tested to standard, preservatives, vehicles and emulsifiers series, and hard-metal powder mix (Table 1). She was positive to co-

balt and the powder mix. A prick test to latex was negative.

Case no. 2

A 27-year-old press operator in the same factory presented with a 13-month history of work-related hand and wrist dermatitis. He had had childhood asthma but not eczema, and reported no previous reactions to metal objects. He was patch tested to standard and metals series, and the powder mix (Table 1). He was positive to cobalt and sodium thiosulphatoaurate. Prick test to latex was negative.

Discussion

In the UK, cobalt is implicated in around 3% of occupational contact dermatitis (unpublished data from EPIDERM). Occupational sources include pigments, paint driers, printing inks, electroplating, cement, catalysts, electronics, textiles, soil and animal food additives, and hair dyes (5, 6). Isolated cobalt sensitivity has been reported in pottery painters (7), offset printers (8), etchers (9), animal feed operatives (10), goldsmiths (11), machine operatives in the rubber (12) and fibreglass reinforced plastics industry (13) and in a cleaner from a hard-metal factory (14). Our 2 cases, both from the same factory, reported no previous reactions to metal objects and were negative to both chromate and nickel. At work, they both handled hard-metal powder containing cobalt and may therefore have been sensitized by occupational exposure. The reaction to sodium thiosulfatoaurate in Case no. 2 was of unknown relevance.

The factory was advised to improve local measures to avoid dust ex-

posure. In consumer products, cobalt very rarely occurs in the absence of nickel (15) and therefore, when there is isolated sensitivity to cobalt, a work-related cause should be sought.

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Table 1. Pertinent patch test results

	% / vehicle	Case no. 1		Case no. 2	
		D2	D4	D2	D4
Potassium dichromate	0.5% pet.	–	–	–	–
Nickel sulfate	5.0% pet.	–	–	–	–
Cobalt chloride	1.0% pet.	+	+	–	+
Hard-metal powder mix	As is	–	+	–	–
Sodium thiosulfatoaurate	0.25% pet.	NT	NT	+	+

NT, not tested.

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Fragrance sensitization caused by temporary henna tattoo

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Key words: cedar wood oil; contact sensitivity; fragrance mix; henna; hypopigmentation; Myroxylon Pereirae resin (balsam of Peru); pink oil; tattoo.

Case Report

A 22-year-old woman, with no previous history of fragrance sensitivity, had a temporary skin tattoo applied



Fig. 1. Postinflammatory hypopigmentation 12 months later.

at the end of her holiday in Tunisia. The tattoo was painted on her right ankle with black henna powder in oil. Though applied to the surface of the skin, the design was not removable by washing or scraping. 10 days after the initial application, erythema, oedema and vesicles developed at the site of the tattoo.

On day 14, pruritic urticarial eruptions appeared on her lower extremities and neck. Treatment was started with a corticosteroid injection (40 mg methylprednisolone) and followed by potent topical corticosteroid (mometazone furoate 1%) twice daily and oral antihistamine (dimethindene maleinate 4 mg) once a day for 2 weeks. Postinflammatory hypopigmentation persisted at the site of the tattoo for 12 months (Fig. 1).

On patch testing the patient with the European standard series, the fragrance mix was +++ at D1, +++ at D2, and +++ at D3. Balsam of Peru (Myroxylon Pereirae resin) was negative at D1, but +++ at D2 and D3. PPD (*p*-phenylenediamine 1% pet.) was entirely negative, and henna powder (10 and 5% pet.) was also. Of the allergens of a fragrance series (Brial, Allergen GmbH, D-Greven), pink oil (*Dianthus* sp.) 0.5% pet., though negative at D1, was +++ at D2 and D3, and cedar wood oil (10% pet.) was ++ at D1 and +++ at D2 and D3. During testing, we observed no immediate reactions.

Comment

To the allergens already reported in 'henna' tattoos (1–11), mainly PPD

rather than henna, we suggest the addition of essential oils, used as their vehicle. Hypopigmentation should also be noted as a sequela.

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