

a cream containing 1% hydrocortisone and pramoxine. He reacted to 1 pair (of 3 pairs) of work shoes.

His response to gold sodium thiosulfate 0.5% pet. (Chemotechnique) was + at D3 and ++ 38 days later. When told that the last response was probably not relevant, he uncovered a pruritic area of black dermatographism under the earpieces of his gold-rimmed glasses, and, when the black smudge was removed, raised erythema of contact dermatitis were clearly visible.

Case no. 2

A 44-year-old woman was seen with dermatitis of both lower eyelids, extending onto the cheeks. Her patch test to gold sodium thiosulfate 0.5% pet. (Chemotechnique) was + at D2 and ++ at D6. She also had mild (+) positives to Disperse Blue dyes 106 and 124. Otherwise, she had negative tests to other items in the standard tray and products that she used in the area.

She had a history of a reaction on her nose under her glasses, along the area where the earpieces touched her temples and where they would be exposed to make-up. There was a history of smudging which was considered contributory. The eyelids cleared by avoiding hand contact. She had never had a reaction under her gold jewelry.

Discussion

Gold responses can appear late even in those already sensitive (3). Their high frequency has been an enigma and many are not considered of current relevance, as the metal is not released in significant amounts by the chloride content of sweat (4). Belsito (5) found that some gold-allergic patients became clear after removing gold jewelry as a precaution, but many others were also clear without doing so.

The 2 patients here seemed to have greater bioavailability in areas where they experienced black dermo-

graphism, suggesting that gold located in the smudge may be more likely to cause dermatitis. Neither had ever had a reaction to a gold ring.

Rapson (6) presented the historical background of black dermatographism, as well as a detailed discussion of the probable mechanism for the phenomenon. For gold (and copper), natural substances such as glutathione- and sulfur-containing amino acids, e.g., L-cysteine, sometimes solubilize these metals, especially when alloys of the 2 are high in copper content (6). Gold alloys with copper and zinc seem to be released in greater quantity as the gold (or other precious metal) content decreases (7). Is it possible that gold can be made more bioavailable when abraded to smaller particles (increasing the surface area)? If so, some of the gold responses in persons with eyelid and facial eruptions may possibly be relevant.

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Allergic contact dermatitis and osteomyelitis due to sternal stainless steel wire

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Case Report

A 68-year old woman with myocardial infarction underwent coronary artery bypass grafting through a midline sternotomy incision. Stainless steel sutures (Ethicon; 316L stainless steel, 16 to 18% chromium, 10 to 14% nickel, 3% molybdenum, 60% iron, 0.03% sulfur, and 0.04% phosphorus) were used to close her sternum.

2 months postoperatively, she presented with fever at the Division of Cardiovascular Surgery, Suwa Central

Hospital. Antibiotics was administered and, 3 days later, she developed chest pain around the sternal scar. Computer tomography of the chest showed partial non-union of sternum and osteomyelitis. After a 10-day fever, erythema began to appear at the site of the sternal scar. Local treatment with corticosteroid ointment was applied, but the erythema worsened. She was referred to Division of Dermatology, where erythema on and around the sternal scar was observed, accompanied by soft nodules at the site of sternal wire. She complained of slight pain.

Patch testing showed +++ reactions to nickel and cobalt. Thus, we decided to remove the sternal wires. 7 such wires were removed and closure provided with braided polyester. Histologic examination of samples of granulation-like tissue around the sternal wire revealed a granulomatous inflammatory infiltrate with epithelioid macrophages and foreign body giant cells.

1 month later, erythema around the sternal scar and soft nodules were reduced, but soon soft nodules began to develop again at the site of sternal wire. These nodules consisted of some sequestra, granulation tissue and remnants of subdermal sutures. Repeated removal of the sequestra and granulation tissue was performed and finally the nodules disappeared.

Discussion

Stainless steel devices have been used widely for internal fixation and there are many reports of sensitivity

to stainless steel. However, there are few reports of allergic reaction to sternal wire (1, 2). In 1 case, there was itching and erythema widely around the sternal scar (1). In another, there was granuloma and erythema narrowly around the sternal wire (2). Our patient's reaction was stronger than in either of these previous reports.

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Dithranol treatment of psoriasis in dithranol-sensitive patients

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Extreme sensitivity to dithranol has been described by several authors (1–5). The irritant potential of dithranol makes the distinction between allergy and irritation by patch testing difficult. Dithranol treatment may remain possible even in very sensitive patients.

Case Report

A 39-year-old female psoriatic patient had been successfully treated with dithranol elsewhere. During short contact treatment with dithranol in our day-care centre, she developed a generalized severe exanthemic reaction after 2 days of widespread application of dithranol cream

0.1% for 15 min. A biopsy showed subacute dermatitis. She recovered in a few days and after 2 weeks, the majority of her psoriatic lesions had disappeared. We performed patch testing with the constituents of the dithranol cream base (Table 1), to which she showed no reaction. 9 months later, we performed patch testing with serial dilutions of dithranol in the cream base (Table 2).

When her psoriasis deteriorated (PASI 11.3, with 20% involved skin), she started short contact therapy with 0.01% dithranol cream. The cream was applied widely, left in place for 5 min and washed off with tap water only. After 3 days, the exposure time was pro-

Table 1. Constituents of the dithranol cream base

Vehicle
cetiol V
cetomacrogol emulsifying wax
liquid paraffin (viscosity 110–230 mPa)
Stabilizers
sorbic acid
ascorbic acid
salicylic acid pulv <90
distilled water

Table 2. Patch test results after 1 day (D) of application of serial dilutions of dithranol cream, read after D2 and D3

dithranol concentration	D2	D3
0.00025%	–	?+
0.0005%	–	?+
0.001%	+	?+
0.0025%	+	?+
0.005%	+	+
0.01%	+	+

?+: erythema, no induration; +: palpable erythema.