

## Airborne contact dermatitis due to methylchloro- and methylisothiazolinone (MCI/MI)

H. SCHUBERT

Wilhelmstr. 13, D-34117 Kassel, Germany

**Key words:** allergic contact dermatitis; airborne contact dermatitis; methylchloro- and methylisothiazolinone; MCI/MI; Kathon® CG; paints; occupational. © Munksgaard, 1997.

### Case Report

A 33-year-old waitress presented with acute dermatitis of the face, neck, forearms, and distal upper arms, together with mild conjunctivitis, 1 day after returning to work after a holiday. On sick leave, she recovered in a week, only to relapse again on her 2nd day back in the restaurant. 2 years ago, she had had a macular contact dermatitis of her face due to MCI/MI in a moisturizing cream, since when she had used MCI/MI-free cosmetics only. However, the walls of the restaurant had been painted a few days before she had originally returned to work, and the paint manufacturer confirmed that the paints used contained MCI/MI as preservative. The patient was transferred to another room (snack bar) that had not yet been painted and her symptoms disappeared. She told us that just passing through the newly painted restaurant was sufficient to make her itch again. After remaining in the snack bar for 6 months, she was able to return to the restaurant without any relapse.

### Discussion

The MCI/MI in the wall paint that had been applied in the restaurant during the patient's holiday was the cause

of an occupational airborne contact dermatitis. Similar cases due to MCI/MI in paints have previously been reported (1–3). Paints are often preserved with other isothiazolinones, i.e., benzisothiazolinone and octylisothiazolinone (4), which were found not to cross-react on further patch testing in our patient, as reported previously (4).

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## Contact allergy in psoriasis

C. J. FLEMING AND A. D. BURDEN

Department of Dermatology, Western Infirmary Glasgow G11 6NT, UK

**Key words:** contact allergy; psoriasis; medicaments; nickel; fragrance mix; coal tar; colophony; neomycin. © Munksgaard, 1997.

It has been suggested that allergic contact dermatitis (ACD) is uncommon in psoriasis (1, 2), but associated with flexural (3) and palmoplantar (4) involvement. We have studied a series of patients to determine the frequency of contact allergy to common allergens and topical treatments and relate this to the pattern of psoriasis.

### Patients and Methods

75 adult patients with psoriasis were patch tested to the European standard series and a series of 32 psoriasis medicaments. The exclusion criteria were psoriasis involving the upper back to such an extent that patch testing was not possible, and concomitant phototherapy or

systemic therapy. Patch testing followed standard protocols with readings on days 2 and 4.

### Results

21 men and 53 women were patch tested, and the mean age of patients was 48 years.

19 patients (25%) had positive patch tests (Table 1). The most common were to nickel, fragrance mix, coal tar, colophony and neomycin (8, 4, 3, 3, 2, respectively). There were no positive patch tests to any topical corticosteroids, ichthammol, cade oil or pine tars. 29 patients (39%) had flexural involvement and 7 of these (24%) had positive patch tests. 37 patients (49%) had past or present palmoplantar psoriasis and 8 of this group (21%) had positive patch tests. There was no significant difference in frequency of contact sensitivity in patients with or without palmoplantar or flexural psoriasis ( $\chi^2$ ,  $p > 0.05$ ). Most patients (74%) in the study had chronic plaque psoriasis, and there were no differences between those with positive and negative patch tests with respect to disease morphology ( $\chi^2$ ,  $p > 0.05$ ).

7 patients described previous irritancy with coal tar, and 13 of these had positive patch tests to this medication. 12 and 14 patients, respectively, reported previous irritant reactions to dithranol and Dovonex<sup>®</sup>, but none had demonstrable sensitivity to these therapies.

### Discussion

Previous studies have suggested an association between site and morphology of psoriasis and allergic contact sensitivity (3, 4), but we found a similar proportion of patients with and without positive patch test reactions had flexural, palmoplantar and chronic plaque psoriasis.

Contact allergy to medicaments, including dithranol (5–11), has been recorded in psoriatics. All the allergic reactions that we observed were to allergens in the European standard series, with the exception of 3 reactions to coal tar and a single patient with sensitivity to Dovonex<sup>®</sup>.

Contact sensitivity to corticosteroids is detected in many patients undergoing patch testing (12). Neither in this study, nor in a previous study of 74 (13) psoriatics, have we encountered a patient with contact allergy to corticosteroid medicaments, and it would seem that such allergy is rare in psoriasis.

We recommend that clinicians consider patch testing in patients with psoriasis unresponsive to conventional topical treatment. In particular, it is useful to patch test patients who report intolerance of coal tar, as this may be due to contact allergy. In patients with coal tar allergy, all coal tar preparations, including shampoos, should be avoided.

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Table 1. Details of patients with positive patch tests

| Age (years) | Sex | Flexural psoriasis | Palmoplantar psoriasis | Type of psoriasis | Previous intolerance         | Positive patch tests                              |
|-------------|-----|--------------------|------------------------|-------------------|------------------------------|---------------------------------------------------|
| 49          | M   | no                 | no                     | CPP               | no                           | Dovonex, fragrance mix                            |
| 56          | F   | no                 | yes                    | pustular          | dithranol, Dovonex, coal tar | coal tar                                          |
| 74          | F   | yes                | no                     | CPP               | no                           | colophony, fragrance mix                          |
| 31          | F   | no                 | no                     | CPP               | Dovonex                      | nickel, benzalkonium chloride                     |
| 45          | M   | yes                | yes                    | CPP               | no                           | quaternium-15                                     |
| 30          | F   | no                 | no                     | guttate           | no                           | nickel                                            |
| 26          | F   | no                 | yes                    | pustular          | no                           | nickel                                            |
| 67          | F   | no                 | yes                    | pustular          | no                           | diazolidinyl urea                                 |
| 62          | F   | no                 | no                     | CPP               | steroids                     | ethylenediamine                                   |
| 63          | F   | no                 | no                     | CPP               | no                           | nickel, fragrance mix                             |
| 65          | F   | no                 | yes                    | palmoplantar      | no                           | neomycin                                          |
| 59          | F   | yes                | yes                    | CPP               | dithranol, Dovonex, coal tar | coal tar, fragrance mix, colophony, quinoline mix |
| 21          | F   | yes                | yes                    | CPP               | no                           | butylhydroxytoluene                               |
| 29          | F   | yes                | no                     | CPP               | no                           | nickel, thimerosal                                |
| 38          | F   | no                 | no                     | CPP               | no                           | nickel                                            |
| 47          | F   | no                 | no                     | CPP               | coal tar, dithranol          | nickel, neomycin                                  |
| 25          | F   | yes                | no                     | CPP               | Dovonex                      | nickel                                            |
| 61          | F   | yes                | yes                    | CPP               | dithranol, Dovonex, coal tar | coal tar thiuram                                  |
| 72          | M   | no                 | no                     | CPP               | Dovonex                      | colophony                                         |

CPP: chronic plaque psoriasis.

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## Pustular contact dermatitis from fluorine in an antirust solution

A. STÉCIUK<sup>1</sup>, A. DOMPMARTIN<sup>1</sup>, J. SAUSSEY<sup>2</sup>, S. LOUVET<sup>1</sup> AND D. LEROY<sup>1</sup>

<sup>1</sup>Service de Dermatologie, CHU, Avenue Georges Clemenceau, 14033 Caen, France

<sup>2</sup>Faculté de Sciences, Université de Caen, Esplanade de la Paix, 14000 Caen, France

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Antirust solutions often contain hydrofluoric acid or oxalic acid, which are strong acids and calcium-chelating agents. These acids can burn and necrose the skin (1-3).



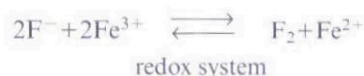
Fig. 1. Erythematous pustular dermatitis on the dorsum of the right foot.

### Case Report

A mother decided to clean the rusted buckles of the shoes of her 19-month-old son. She applied an antirust solution Eau Ecarlate<sup>®</sup> (SA Eau Ecarlate, Sainte Geneviève des Bois 91000 France) only on the right shoe. 12 h later, the little atopic boy wore both shoes; the antirust composition had not been rinsed or wiped from the right shoe. The next day, he developed an erythematous pustular dermatitis on the area of the treated buckles. There was no pruritus. The lesions were over the whole the dorsum of the right foot (Fig. 1). There was no fever, no adenopathy and no lymphangitis. Culture of a swab was sterile. He stopped wearing the shoes and the lesions cured spontaneously within 7 days with no relapse.

### Discussion

Rust appears after oxidation of iron into ferric ions. Antirust action is the result of reduction of these ferric ions ( $\text{Fe}^{3+}$ ) into ferrous ions ( $\text{Fe}^{2+}$ ). The antirust composition Eau Ecarlate<sup>®</sup> contains 20% ammonium bifluoride diluted in water. The halogen fluorine ( $\text{F}_2$ ) is released from ammonium bifluoride in a redox system between fluoride ions ( $\text{F}^-$ ) and the ferric ions ( $\text{Fe}^{3+}$ ) of the rust.



Topical use of fluorine can induce cutaneous manifestations. The use of fluoride toothpastes can cause an acne-like eruption extending from the corner of the mouth to the chin (4, 5). A severe case of acne with systemic involvement was reported following occupational exposure to a fluorinated aromatic compound, dihydrotrifluoromethylphenyl benzothioipyranopyrazolone (6). Papulonodular eruptions were reported after the use of fluoride gel

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