

Short Communications

Occupational allergic contact dermatitis from methylchloroisothiazolinone and methylisothiazolinone (MCI/MI) in a silicone-emulsion lock lubricant

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Key words: occupational allergic contact dermatitis; silicone emulsion; methylchloroisothiazolinone and methylisothiazolinone (MCI/MI); antimicrobials; preservatives; biocides; lock lubricant; hand cleanser; skin-care products.
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Case Report

A 39-year-old man presented with a 2-year history of dorsal hand eczema favouring the finger webs. He had been a vehicle locksmith and electrician for 3 years, handling spray-can lock lubricants and washing with industrial hand cleansers.

Patch testing was positive (++) to formaldehyde 1% aq., melamine-formaldehyde resin 10% pet., 2-bromo-2-nitropropane-1,3-diol 0.5% pet. and methylchloroisothiazolinone and methylisothiazolinone (MCI/MI) 0.01% aq. at both D2 and D3.

On enquiry from the manufacturers, the lock lubricant was a non-ionic o/w emulsion of a linear polydimethylsiloxane polymer. We were told that MCI/MI was present, but in too low a concentration to be mentioned on the material safety data sheet. The patient's hand cleanser was also found to have contained MCI/MI up until October 1998. The patient's hand eczema has improved significantly since he stopped using both the lock lubricant and the hand cleanser.

Discussion

Skin sensitization to biocides is well-documented (1, 2). MCI/MI has caused contact allergy in metalworkers

(3) and in the manufacture of binders for paints and glues (4). MCI/MI also sensitizes in cosmetics (5). It does not appear to have been reported before in a lock lubricant.

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Asthma from diisocyanates is not mediated through a Type IV, patch-test-positive mechanism

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Key words: allergic contact dermatitis; occupational; asthma; toluene 2,4-diisocyanate; TDI; 4,4'-diphenylmethane diisocyanate; MDI; 1,6-hexamethylene diisocyanate; HDI; car painter; polyurethane sprayer. © Munksgaard, 2001.

The mechanism of occupational asthma from diisocyanates (DI) (1–10) (Fig. 1) is not fully known; only about 10–30% of such patients have specific IgE antibodies to DI (3, 11, 12). A T-cell mediated immune response has been considered to be involved in DI asthma (13) and we therefore wondered whether patch testing might be of any help in its diagnosis.

Patients and Methods

60 consecutive patients with suspected occupational asthma from DI were patch tested, with readings on removal (1-D occlusion) and 1, 2 and 4–5 D after removal, using TDI and MDI 5%, 2%, and 1% pet., and HDI 0.5%, 0.2%, and 0.1% pet. In 20 unexposed controls, results were negative. Bronchial provocation tests were also performed (11).

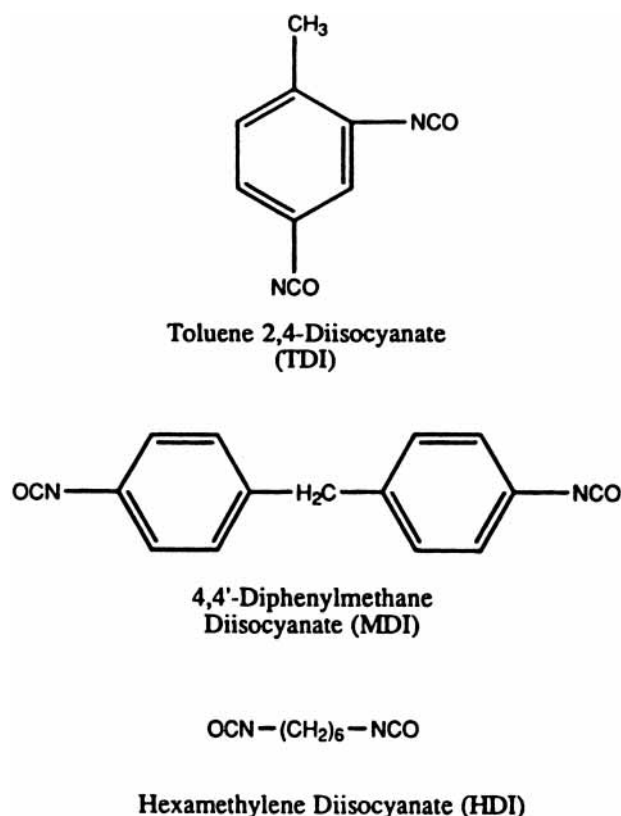


Fig. 1. Chemical structure of commonly-used diisocyanates.

Results

2 out of the 60 patch-tested patients were positive to DI. Both such patients had negative RASTs (11) to DI.

Case no. 1 was a 28-year-old non-atopic woman, who, after 2 months of MDI exposure from polyurethane spraying, developed a very itchy dermatitis on her hands, and soon afterwards asthmatic symptoms. Patch tests with MDI (5%–1% pet.) and TDI (5%–2% pet.) were positive, whereas TDI 1% pet. and HDI 0.5–0.1% pet. were negative. The patient was considered to have occupational allergic contact dermatitis from MDI, the patch test reaction to TDI being considered a cross-reaction. Bronchial provocation testing with 0.004 ppm MDI provoked a late asthmatic reaction.

Case no. 2 was a 50-year-old non-atopic male car painter who used paints containing HDI. After 6 months of exposure, he developed dermatitis on his hands. Asthmatic symptoms developed 2 years later. The patient was patch tested 3× to confirm the diagnosis. HDI gave a positive patch test at 0.5%–0.1% pet. and later even at 0.02% pet. Workplace provocation (spray painting) was positive for occupational asthma. On bronchial provocation testing, the reaction, however, could not subsequently be repeated.

Discussion

The most feasible explanation is that both these patients first developed allergic contact dermatitis (Type IV) from DI, and then occupational asthma from DI via a different mechanism. This is supported by the fact that the majority of the 34 patients diagnosed as having asthma from DI were patch-test negative. Patch testing has not, therefore, been found to be helpful in the diagnosis of DI-induced asthma, though this does not entirely exclude a Type IV mechanism.

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‘Lucky Luke’ contact dermatitis from diapers: a new allergen?

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Key words: allergic contact dermatitis; children; diapers; cyclohexyl thiophthalimide; rubber chemicals. © Munksgaard, 2000.

‘Lucky Luke’ contact dermatitis is a particular pattern of diaper dermatitis, reminiscent of a cowboy’s gunbelt holsters (1).

Case Report

A 23-month-old child presented with eczema of the outer buttocks, which had begun at the age of 3 weeks, and evolved by attacks. There was no personal or family history of atopy.

Patch tests (European standard series, corticosteroids series, rubber series and samples of the diapers) showed at D3 a + reaction to cyclohexyl thiophthalimide 1% pet. and to the rubber bands of diapers.

Discussion

Contact dermatitis from diapers has been reported, when an allergen has been identified, as due to rubber chemicals (mercaptobenzothiazole) or glues (p-tertiary-butylphenol-formaldehyde resin) (1, 2). In this case, the

responsible agent appears to be cyclohexyl thiophthalimide, used as a vulcanization retarder in rubber.

This allergen has never previously been reported in ‘Lucky Luke’ contact dermatitis. Untested in previous publications, it might explain at least some of the cases where the responsible allergen in the diapers was not identified (1, 2). Atopy, often present in this type of dermatitis, was not found in our patient. The onset at 3 weeks demonstrates early acquisition of allergic contact dermatitis.

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Rôle of methylchloroisothiazolinone/methylisothiazolinone (Kathon® CG) in poikiloderma of Civatte

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Key words: poikiloderma of Civatte; Kathon® CG; methylchloroisothiazolinone; methylisothiazolinone; cosmetics; preservatives; allergic contact dermatitis. © Munksgaard, 2001.

Case Report

A 24-year-old woman had had hyperpigmentation on the face for the past 8 years. Lesions had appeared first on the forehead, then subsequently involved both the cheeks and neck, but spared the nose. There was a history of photosensitivity. She used perfumes, moisturizers and gram flour. On examination, she had reddish to brownish mottled pigmentation on both cheeks and close to the pretemporal region. There was associated atrophy and telangiectasia. The upper eyelids, nose, chin and posterior auricular area were not involved. A diagnosis was made of poikiloderma of Civatte. Skin biopsy from the cheek showed a thinned-out epidermis with effacement of rete pegs. There was a band-shaped lymphomononuclear infiltrate in the upper dermis, along with basal cell degeneration. Many melanophages filled with melanin were present in the inflammatory infiltrate. The changes were consistent with poikiloderma of Civatte.

Patch and photopatch tests were carried out with Indian standard series, a cosmetics series and the patient's own cosmetics. She was positive only to 0.67% Kathon® CG as supplied (100 ppm aq.).

She was advised to stop using moisturizer and perfume, to use sunscreen and preventive methods for photoprotection, such as covering the involved area and carrying an umbrella, and to stay indoors whenever possible. After 2 months without cosmetics, the lesions improved considerably. She is on regular follow-up and the lesions are showing slow but steady improvement.

Discussion

Poikiloderma of Civatte occurs in middle-aged women. Milder forms are common and patients often do not seek medical advice. It is a benign skin condition of obscure aetiopathogenesis; cumulative exposure to UV radiation (1), hormonal changes associated with the menopause, and photoallergic mechanisms have all been implicated. The distribution on the face and neck implies exposure to light, and photodynamic substances in cosmetics (2) are probably an important factor. A genetic predisposition to the disease may exist, possibly transmitted as an autosomal dominant (3).

Clinically, poikiloderma of Civatte manifests as reddish-brown reticulate pigmentation with telangiectasia and atrophy, which develops in an irregular more-or-less symmetrical pattern on the lateral aspect of cheeks and sides of neck, but spares the area shaded by the chin (4). Histopathological examination shows moderate thinning of stratum malpighi, effacement of the rete ridges

and hydropic degeneration of the basal cells. In the upper dermis, there is a band-like infiltrate which in places invades the epidermis. The infiltrate consists mainly of lymphoid cells but also contains a few histiocytes. Melanin-laden melanophages are also seen within the infiltrate due to pigmentary incontinence (5). Skin biopsy from our patient had all the above features.

Kathon® CG is known to produce irritant/allergic contact dermatitis depending upon its concentration (3, 4). Rates of sensitization to Kathon® CG have varied from 2.9% to 8.4% (6). Kathon® CG was found to be the most important cosmetic allergen (27.7%) in 1 study (7, 8). Our patient was sensitive to Kathon® CG and was using a moisturizing cream which contained Kathon® CG. The negative patch test with cosmetic cream in our patient may have been due to the low concentration of Kathon® CG in the moisturizer, which was thus unable to elicit a positive response. Similar findings were also reported by De Groot et al. (9). Thus, we conclude that Kathon® CG played an important rôle in producing or continuing poikiloderma of Civatte. To the best of our knowledge, a rôle for Kathon® CG in poikiloderma of Civatte has not previously been proposed.

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Allergic contact cheilitis due to shellac

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Key words: allergic contact cheilitis; shellac; lipsticks; Lipcote®; cosmetics. © Munksgaard, 2000.

Case Reports

We report 5 cases of allergic contact cheilitis from shellac in lip-care products. The patients were all women

ranging in age from 22–49 years, who presented with cheilitis and gave a history of having used Lipcote® at some point. In many cases, the cheilitis persisted even after the offending agent was withdrawn.

All patients were patch tested to the European standard series and an extended lipstick series (Table 1) according to EEC DRG recommendations. The results are summarized in Table 2.

Table 1. Departmental lipstick series

ozokerite wax (30% pet.)
beeswax (30% pet.)
propylene glycol (20% pet.)
cetyl palmitate (30% pet.)
myristyl palmitate (0.05% pet.)
candelilla wax (30% pet.)
castor oil (30% pet.)
trilaurin (0.05% pet.)
cetyl alcohol (30% pet.)
microcrystalline wax (30% pet.)
isopropyl isostearate (0.05% pet.)
propyl gallate (0.01% pet.)
liquid paraffin (100% pet.)
shellac (20% alc.)
eosin (50% pet.)

Discussion

Shellac is a resinous secretion from the female of the insect *Laccifer lacca*, which acts as a protective cover on host trees, from which it is collected, washed and purified. It is both irritant and sensitizing, and is used as a coating in cosmetics, including lipstick sealants, hair lacquers and mascara, as well as in dental impression material, coatings for slow-release tablets and cementing book covers (1).

1 previous case of allergic contact dermatitis of the upper eyelids due to shellac in mascara has been reported (2), along with 1 other case of allergic contact cheilitis from shellac in a lipstick sealant (3).

We propose that shellac may be an under-recognized allergic cause of cheilitis and that it should be included in any lipstick series.

Table 2. Positive patch test results

Patient no.	Age/sex		D2	D4
1	25/F	shellac (20% alc.)	+	++
2	49/F	shellac (20% alc.)	–	+
		colophonium (20% pet.)	?+	+
3	24/F	shellac (20% alc.)	+	++
		colophonium (20% pet.)	–	+
		nickel (5% pet.)	+	+
		cobalt (1% pet.)	+	+
4	22/F	shellac (20% alc.)	++	+
		own lipsalve	++	++
5	23/F	shellac (20% alc.)	++	+++

No other patch test findings were recorded on the patients.

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Consort contact urticaria due to amoxycillin

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Key words: mucosal contact urticaria; immunological; Type I hypersensitivity; consort contact; amoxycillin; antibiotics; prick testing; RAST. © Munksgaard, 2001.

Penicillin is a frequent cause of immediate hypersensitivity, and contact urticaria due to amoxycillin has already been described, e.g., in nurses (1). Mucosal edema is possible after oral intake (2, 3). However, consort urticaria has never previously been reported.

Case Report

A 22-year-old woman had labial urticaria with oropharyngeal edema several min after kissing her boyfriend, who had taken amoxycillin a few min before. A few months before, generalized urticaria had occurred several min after she had ingested the same drug. A prick test with amoxycillin showed a positive reaction, with 20-mm diameter induration surrounded by edema (2× positive histamine dihydrochloride 10 mg/ml control). A prick test with penicillin G was negative. Total serum IgE was 90 kU/l, and class-3 positivity was detected by RAST for amoxycillin (4.74 kU/l).

Discussion

Consort and connubial dermatitis has been described from various substances, including phenylmercuric ni-

trate, clotrimazole, nifuratel and musk ambrette (4, 5). However, such cases concerned delayed hypersensitivity. This is the 1st reported case of immediate hypersensitivity related to consort contact. Mucosal contact urticaria should be considered if oral edema occurs. Patients with a history of Type I hypersensitivity should be aware of this.

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Compositae mix: what is the optimum concentration for patch testing?

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Key words: Compositae mix; allergic contact dermatitis; sesquiterpene lactone mix; patch testing technique; active sensitization; plants; serial dilution. © Munksgaard, 2001.

Previous studies have found Compositae mix (6% pet.) to be more sensitive than sesquiterpene lactone mix (0.1% pet.), but at the expense of irritant reactions and active sensitization (1–5). Dilution of a patch test allergen may, at least partly, reduce such problems (6).

Patients and Methods

Patients who had previously had positive patch test reactions to Compositae mix (6% pet.) participated after informed consent. Compositae mix at 6%, 3%, 1% and 0.6% was tested on the back for 2 days using Finn Chambers and Scanpor tape. 1st readings were done at day (D) 2 and 2nd readings between D4 and D6. Reactions were graded according to ICDRG recommendations and read by a single observer.

Results

11 women and 4 men participated, with a median age of 53 (Table 1). 1 patient was excluded because she had no reaction to any of the dilutions, suggesting a previous false-positive result. The sensitivities of the 3%, 1% and 0.6% mixes were 100%, 93% and 50%, respectively. Patient no. 7 had a late reaction to the 1% and 0.6% mixes at D12, with a rebound flare of the 3% mix, 1 possible explanation for this being active sensitization to a further constituent of the mix.

Discussion

Allergic contact dermatitis from Compositae can be due to various allergens. Compositae mix comprises short

Table 1. Summary of patient details and results of 2nd patch testing readings

Case no. (age and sex)	Occupation	Site	6%	3%	1%	0.6%
1. 62 F	housewife	hands	NT	++	+	—
2. 46 F	nurse	hands	NT	++	+	?+
3. 75 F	retired	hands & face	++	++	++	++
4. 74 F	housewife	hands	++	++	++	++
5. 58 M	textile worker	hands	NT	++	+	+
6. 80 F	housewife	hands & face	++	++	++	++
7. 29 F	nurse	hands	++	+	?+	—
8. 52 F	catering	hands	++	+	+	—
9. 38 F	catering	hands	NT	++	+	?+
10. 57 M	driver	face	NT	+	+	?+
11. 53 F	flower shop	hands	NT	++	++	++
12. 40 F	civil servant	feet	NT	++	++	+
13. 51 M	gardener	hands	NT	+	+	?+
14. 55 M	gardener	hands	NT	+++	+++	+++

ether extracts of yarrow 1%, arnica 0.5%, German chamomile 2.5%, feverfew 1% and tansy 1% (7). Wilkinson & Pollock (5) estimated its risk of active sensitization to be at least 0.5% (5).

We found further dilution of the mix to 1% remained sensitive enough to be acceptable for screening purposes, though our study has 2 main limitations. Firstly, our patients had a wide range of disease severity, and the most useful information probably came from patients with weak positive reactions to the undiluted mix. Secondly, reading was not blinded, introducing observer bias.

In the absence of an ideal single screening test for Compositae dermatitis, we recommend that both sesquiterpene lactone mix (0.1% pet.) and Compositae mix (1% pet.) should be in the standard series. Undoubtedly, this will still miss some cases of Compositae dermatitis, and further research to identify better markers should continue.

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Oral symptoms due to zinc as a minor component of dental amalgam

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Key words: zinc; allergic contact dermatitis; dental amalgam. © Munksgaard, 2001.

Dental amalgam consists of mercury, silver, copper, tin and sometimes zinc (1). Amalgam fillings may cause oral lichenoid lesions (2), though not as often as some think (3). In most such cases, sensitization is to mercury (2).

Case Report

A 45-year-old woman presented with a long history of coated tongue, gingivitis and glossodynia. She had a

pronounced mucosal erythema. She had had 8 dental fillings with amalgam of unknown composition before a 9th zinc-containing amalgam filling (Septalloy Non Gamma 2 – NG70, Spécialités Septodont, France: Ag 70%, Sn 18.5%, Cu 11%, Zn 0.5%; mixed with mercury at 1:1.2). Subsequently, she experienced a 1-week episode of facial buccal dermatitis that resolved spontaneously. Since then, she had had headache, hyperhidrosis and fatigue.

Table 1. Results of re-patch testing to 21 dental allergens

	D2	D3
zinc chloride 1.0% pet.	?+	+
amalgam 5.0% pet. (zinc free)	—	—
mercury 1.0% pet.	—	—
copper sulfate 2.0% pet.	—	—
colloidal silver 0.1%	—	—
other 16 dental allergens	—	—

Patch testing with 54 standard and dental allergens (Briall Allergen, Germany) using EPIcheck (Innovall Medica, Germany) gave a ++ reaction at D3 to zinc chloride 1.0% pet., while all other patch tests, including 1.0% metallic zinc, remained negative. Re-testing with 21 dental allergens confirmed these results (Table 1).

Discussion

Zinc has not previously been reported as causing clinical hypersensitivity to amalgam, and though used widely, is an extremely rare allergen (2, 4–6). Patch testing is the most specific test for zinc sensitization (7, 8). There are also reports of zinc sensitization unrelated to dental exposure (9–11). Facilitation occurs with continual exposure (12, 13).

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Keyboard wrist pad

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Key words: occupational; computer; keyboard; knuckle pad; callosities; office workers. © Munksgaard, 2001.

Case Reports

Case no. 1

A 34-year-old Japanese woman presented with an asymptomatic eruption on her left wrist of 2 months duration. She was otherwise healthy and had no habit that might have caused repeated hand trauma. She was an office worker who had spent 10 years using a keyboard, on an average of 6 h a day each weekday. Examination revealed a well-defined, slightly elevated, whitish sclerotic patch on the ulnar side of her wrist (Fig. 1A).

Case no. 2

A 40-year-old Japanese man presented with an unknown length of history of an asymptomatic eruption on his

right wrist. He had spent 20 years using a personal computer, on an average of 6 h a day each weekday. Physical examination disclosed well-circumscribed keratoderma on the ulnar side of his right wrist (Fig. 1B).

Both cases were both diagnosed as having “keyboard wrist pad”.

Discussion

Keyboard wrist pad has not previously been reported. There are various other computer-related skin conditions, including computer palms (1) and both irritant (2) and allergic (3) contact dermatitis from computer mice. Patient no. 2 rested the ulnar aspect of the right wrist, overlying the styloid process, directly on the desk

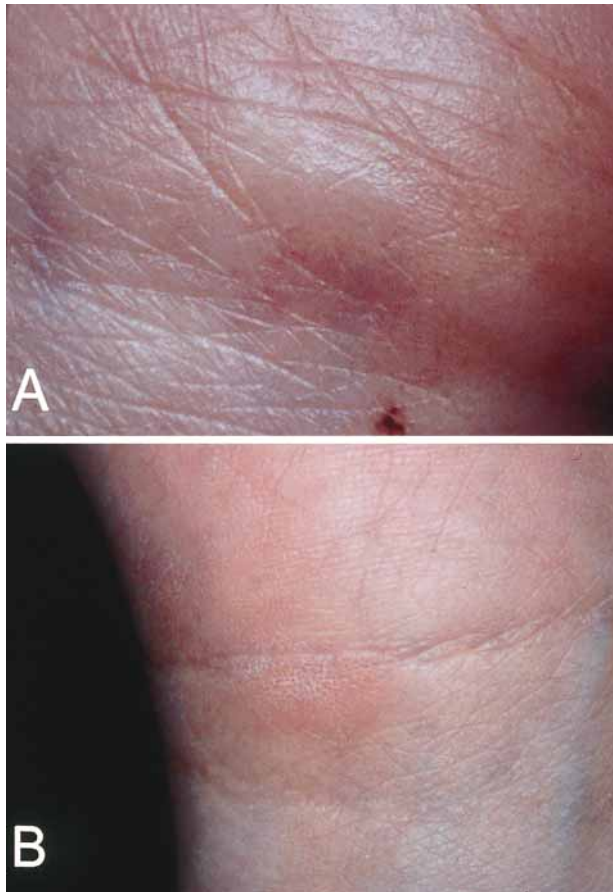


Fig. 1. (A) Well-demarcated, slightly elevated whitish sclerotic patch on the ulnar side of the left wrist (case no. 1). (B) Well-circumscribed keratoderma on the ulnar side of the right wrist (case no. 2).



Fig. 2. Patient no. 2 resting the ulnar surface of the right wrist directly on the desk, while the left wrist is protected by his watchstrap.

(Fig. 2), whereas the left wrist was protected by a watchstrap.

The condition described here is similar to knuckle pads, which occur either idiopathically or due to an occupation or hobby providing continual pressure or friction (4). These are most commonly seen over the extensor surface of the proximal interphalangeal joints (5, 6) and usually present between the ages of 15 to 30 years (7). They may even develop in younger children (8). "Fiddler's neck" is also similar in that it is also caused occupationally by local pressure or friction on the skin (9, 10).

Our treatment was to recommend a soft cushion material under the wrists and we followed up case no. 1 for 3 months and case no. 2 for 6 months. The symptoms in case no. 1 seemed to be improved, while they were unchanged in case no. 2.

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Fixed drug eruption from quinolones with a positive lesional patch test to ciprofloxacin

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Key words: fluoroquinolones; quinolones; cross-sensitivity; fixed drug eruption; positive lesional patch test; ciprofloxacin; antibiotics; cutaneous adverse drug reactions. © Munksgaard, 2001.

The prevalence of cutaneous adverse drug reactions to the (fluoro)quinolone antibiotic ciprofloxacin is only 1–2% (1), mostly IgE-mediated. Late and local reactions have been related to memory T lymphocytes (2, 3).

Case Report

A 28-year-old woman, 8 h after a 400 mg dose of norfloxacin, developed pruritic erythematous macules on the dorsum of both hands, with subsequent residual pigmentation. A 2nd such episode, 1 year later, developed 2 h after 250 mg ciprofloxacin, with reappearance of the old and new lesions.

Prick tests with the quinolones norfloxacin (4 mg/ml), ciprofloxacin (2 mg/ml), levofloxacin (5 mg/ml) and piperimidic acid (4 mg/ml), and intradermal tests with the same antibiotics diluted with saline to 1/100 and 1/10 were performed. Patch tests on normal and previously involved skin were performed with the same substances (10% pet.) 30 days later. Oral challenge with 500 mg piperimidic acid was performed 60 days later.

Prick tests and intradermal tests, both immediate and late, were negative. Patch tests on uninvolved skin were negative at D2 and D4. Patch tests on lesional skin (residual pigmentation) were positive only to ciprofloxacin, with pruritic erythematous macules and vesicles at D2, remaining until D20. Oral challenge with piperimidic acid was well-tolerated.

Discussion

No cases of fixed drug eruption (FDE) from quinolones (4–10) with a positive patch test have previously been reported. In some published reports of FDE from quinolones, cross-sensitivity among fluoroquinolones has been described (4, 5), though others (6, 9) have not

found this. Our patient showed *clinical* cross-sensitivity between norfloxacin and ciprofloxacin, but this cross-sensitivity was not reproducible on patch testing. Piperimidic acid belongs to the original group of quinolones, reported not to cross-react with the fluoroquinolones.

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Contact dermatitis from Solvent Yellow 146 in a permanent marker

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Key words: allergic contact dermatitis; dyes; permanent marker; Orasol Yellow 4 GN®; Solvent Yellow 146. © Munksgaard, 2001.

Case Report

A 62-year-old woman presented with skin lesions on her left breast. After a lumpectomy of an invasive-ductal carcinoma, she had undergone radiotherapy. The irradiation field was initially marked with a black permanent marker (Edding 3000, Col. 004). On subsequent days, the patient repeatedly traced these contours with a green pen (Edding 3000, Col. 004). Pruritic, erythematous and infiltrated plaques, with vesicles and papular spread, developed on these lines within a few days.

Patch testing was performed with the standard, ointment and textile dyes series of the DKG. In addition, we tested various colour solutions for marking pens of the same manufacturer, the dye Orasol Yellow 4 GN® in a single open test (at a concentration equivalent to the end product), as well as spare nibs for the Edding 3000 series

(occlusive). Day (D) 2 and D3 readings were made according to the recommendations of the ICDRG. 5 control persons underwent the same test procedure (Table 1).

Discussion

Orasol Yellow 4 GN® is a metal-free monoazo dye, its generic name being Solvent Yellow 146. It is mainly used in liquid inks and wood stains and, to our knowledge, has not previously been described as a contact sensitizer. According to the manufacturer, the green colour of the Edding 3000 contains Orasol Yellow 4 GN® at 2.6%. Additionally, this is contained in all the other patch-test-positive colours (Cols. 004, 005, 007 and 016) but not in Col. 001, which was negative. Sensitization was related to the patient's repeated contact with various permanent markers (among them Edding 3000) in painting with her children and grandchildren.

Patch testing with the black colours and with spare nibs for marking pens, which consist of an acrylic resin, was negative. The manufacturer of the permanent markers emphasizes that Edding 3000 products are not legally registered for marking the skin. Contact reactions to other components of markers have been described (1, 2).

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Table 1. Patch test results

	D2	D3
standard series	—	—
ointment series	—	—
textile dyes series	—	—
Edding 3000 Col. 001 without xylol/toluol	—	—
Edding 3000 Col. 001 with xylol/toluol	—	—
Edding 3000 Col. 004	?+	+++
Edding 3000 Col. 005	—	++
Edding 3000 Col. 007	—	++
Edding 3000 Col. 016	—	++
Orasol Yellow 4 GN®	?+	+
(colour powder in 0.9% NaCl)		
spare nibs	—	—

The control persons showed no positive reactions.

Sensitivity to adipic acid used in polyester synthesis

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Key words: adipic acid; polyester synthesis; occupational; chemical industry; allergic contact dermatitis; patch testing technique. © Munksgaard, 2001.

Case Report

A 51-year-old machine repairman presented with a 3- to 4-year history of work-related dermatitis of the hands and other exposed sites when working with powders in the synthesis of polyesters.

Patch testing was done to the chemicals used, after borate buffering and testing for pH. At 0.1%, he was negative but, at 1% alc. (pH 6.0), he showed a ++ reaction to adipic acid at D2, while controls were negative. He also had a ?+ response to isophthalic acid (1% aq., pH 7.5). He had a less prominent ++ reaction to adipic

acid at D5 and a ?+ response to terphthalic acid (1% aq., pH 6.5). Controls were again negative.

Other positive tests included Zonalon cream (as is), paraben mix 16% pet. (Chemotechnique), budesonide 0.01% pet. (Chemotechnique), gold sodium thiosulfate 2% pet. (Chemotechnique), Euxyl K 400 1.5% pet. (Chemotechnique), cobalt chloride 1.0% pet. (Chemotechnique), desoximetasone cream 0.25% (as is), fluocinolone 0.025% (as is), and a ?+ response to 4 other commercial corticosteroids.

Comment

Adipic acid is a naturally-occurring dicarboxylic acid (1,4-butanedicarboxylic acid) found in beet juice (1). It has a structure similar to that of azelaic acid (1,7-heptanedicarboxylic acid), with which it is sometimes compared in basic studies. Adipic acid has been used as a reactant in the production of nylon (2), as well as in unsaturated polyester resins, terpolymers, copolyamides

and paper additives (3). It can be a polymer additive for epoxy-curing agents and plasticizers, and used as an intermediate in the synthesis of polyesters, polyester polyols, adiponitrile, cyclopentanone, 1,6-hexanediol, and dimethyl sebacate. It can also be found in solder flux and chrome tanning of leather (3).

Despite such widespread use, contact dermatitis from it seems to be largely unknown.

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Allergic contact dermatitis caused by palladium on titanium spectacle frames

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Key words: palladium; gold; titanium; metal spectacle frames; allergic contact dermatitis. © Munksgaard, 2001.

Case Report

A 36-year-old dental nurse, with previously healthy skin, developed dermatitis at contact sites of her metal spectacle frames. She bought new frames, which the optician claimed to be made of titanium and free from nickel, but her symptoms continued. On patch testing with a modified European standard series, plus mercury 0.5%, gold sodium thiosulphate 0.5%, metallic gold as is, copper sulfate 2.0%, aluminium chloride hexahydrate 2.0%, tin 50% and palladium chloride 2.0% (all pet.), palladium chloride was +++ at D4 and gold sodium thiosulphate ++. The remainder of the patch tests were negative. The frames were declared as 99.7% titanium but with gold-plating using gold (90%), copper (3%) and palladium (7%). There was no nickel or cobalt. Both the old and new spectacle frames were negative with the dimethylglyoxime test (1, 2).

Discussion

On clinical and patch-test grounds, our patient had allergic contact dermatitis from palladium. Titanium has, on rare occasions, been claimed to cause contact allergy (3–5), but our report shows that its decorative plating presents other risks. Patients reacting on patch testing

to palladium mostly also react to nickel (6), which may be due to cross-sensitivity (6, 7), but our patient did not, as has rarely been reported before (8, 9). To our knowledge, palladium allergy from spectacle frames has not previously been reported (10).

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Report from the register of occupational skin diseases in northern Bavaria (BKH-N)

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Key words: occupational skin disease (OSD); register of OSDs; BKH-N; epidemiology; population-based study; incidence rate. © Munksgaard, 2001.

Population-based epidemiological data on the incidence of occupational skin diseases (OSD) are scarce (1). We report on the incidence of OSD in Northern Bavaria between 1990 and 1999.

Methods and Results

The register of OSDs in Northern Bavaria (BKH-N) was founded in co-operation with the Bavarian State Department of Occupational Medicine, outpost Nurem-

berg, and the Department of Dermatology at the University of Erlangen. The BKH-N was implemented at the beginning of 1990, and since then, all initial reports of OSDs have been recorded (2–4). Because in Germany occupational diseases are compensated by non-profit insurance companies (*Berufsgenossenschaften*), the number of reported cases is probably nearly complete: the health insurance schemes (*Krankenkassen*) are keen to pass such cases on to the competent insurance companies. Since the records of the German Federal Employ-

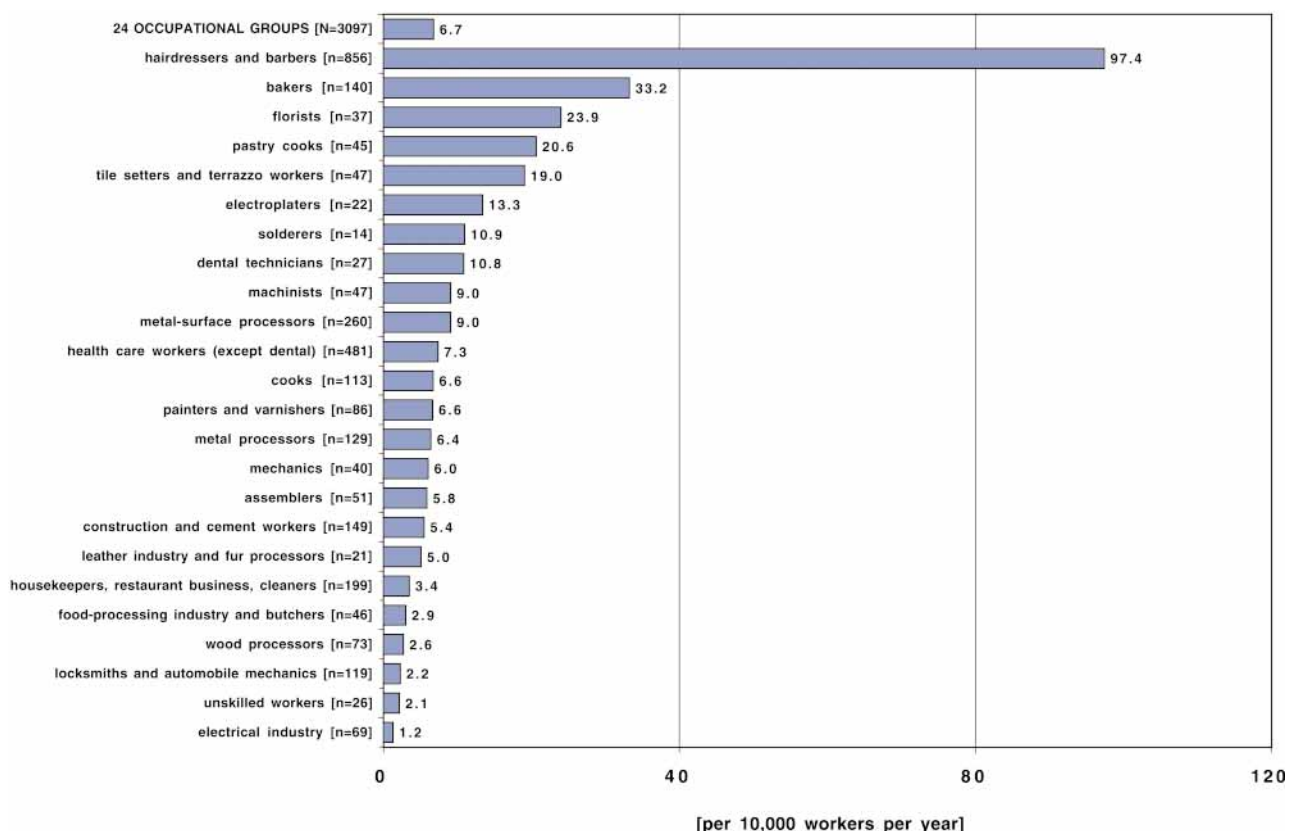


Fig. 1. 1-year incidence rate of OSDs in 24 occupational groups in Northern Bavaria (1990–1999).

ment Office (*Bundesanstalt für Arbeit*) provide specific occupational data in relation to the total employed population of Northern Bavaria, it is possible to estimate incidence rates of OSDs in various occupations (1, 3, 4).

The present study is based on analysis of the BKH-N over a 10-year period (1990–1999). In 3730 out of 5285 cases (70.6% of all initial medical reports), the presence of an OSD was recognized. Of these, 3097 (83%) occurred in the 24 occupational groups shown in Fig. 1. The overall incidence rate of these 24 occupational groups combined was 6.7 per 10,000 workers per year. The highest incidence rates within the specific groups were in hairdressers (97.4), bakers (33.2), and florists (23.9), while the largest number of cases was in hairdressers (856), health-care workers (481), and metal-surface workers (260).

Discussion

Diepgen & Coenraads (1) estimated the incidence rate of OSD at 5–19 per 10,000 full-time workers per year, based on data in various western industrial countries. In Germany, Approved Codes of Practice (ACOP), e.g.,

TRGS 530 “hairdressing”, TRGS 531 “wet-work”, TRGS 540 “sensitizing substances”, have been established in the last 5 years. However, according to newer statistics from the German Federal Ministry of Labour and Social Affairs, initial reports of OSD (*Berufskrankheitenanzeigen nach nr. 5101 der Berufskrankheitenverordnung*) continued to increase in 1998. Further analyses are needed to determine if the assumed steady incidence rates continue to apply to all occupational groups.

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The usefulness of patch testing on the previously most severely affected site in a cutaneous adverse drug reaction to tetrazepam

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Key words: cutaneous adverse drug reactions; maculopapular rash; tetrazepam; benzodiazepines; medicaments; positive patch test; lack of cross-sensitivity. © Munksgaard, 2001.

Case Report

A 46-year-old woman developed a maculopapular rash while taking Panos[®], containing tetrazepam, which disappeared in 5 days after discontinuation of the drug. 3 months later, 6 h after taking 2 Myolastan[®] pills, also containing tetrazepam, she developed a widespread pruriginous macular rash with symmetrical bullous lesions on the elbows. 6 days after discontinuation of the myorelaxant, the rash had disappeared completely. According to the criteria of Moore et al. (1), tetrazepam was very probably responsible.

6 weeks after discontinuation of tetrazepam, patch tests were done with the commercial drugs Panos[®] and Myolastan[®], ground to very fine powder and diluted to 30% in pet., water and ethyl alcohol. Pure tetrazepam was also tested at 30% and 10% pet. Patch tests were applied on the back under Finn Chambers on Scanpor tape[®], Myolastan[®] 30% pet. and tetrazepam 10% pet. also being applied on the left elbow at the site previously affected with bullous lesions. Readings were made at 20 min, day (D) 2 and D4.

Patch tests were negative or doubtful on the patient's back, tetrazepam 10% pet. and Myolastan[®] 30% pet.

being ?+ at D4, but at D2 and D4 both were ++ on the elbow (Table 1). 20 controls, recruited as previously described (2), were negative to tetrazepam 10% and 30% pet.

Discussion

Patch tests can be of value in maculopapular rashes due to drugs (3, 4), depending on the drug, with tetrazepam

Table 1. Patch test results

	D2	D4
<i>Patch tests on the back</i>		
Myolastan [®] pure, 30% pet., 30% aq., 30% alc.	–	–
Panos [®] as is	–	?+
Panos [®] 30% pet.	–	?+
tetrazepam 30%, 10% and 1% pet.	–	?+
Lexomil [®] (bromazepam) 30% pet.	–	–
Tranxene [®] (clozapate) 30% pet.	–	–
Valium [®] (diazepam) as is	–	–
<i>Patch tests on the left elbow</i>		
Myolastan [®] 30% pet.	+	++
tetrazepam 10% pet.	+	++

frequently being positive (2, 5–8). In fixed drug eruptions, patch tests (4) or repeated application tests (9) with the suspected drug are more often positive when done on residual lesional skin than on non-lesional skin of the back. In 1 case of toxic necrolysis, Klein et al. (10) obtained positive patch tests with co-trimoxazole only on skin that had previously been the most severely affected. Our case demonstrates that this may also be true in maculopapular rashes. In fixed drug eruptions, localized abnormal responses of keratinocytes to γ -interferon or tumor necrosis factor- α and long-lasting epidermal CD8+ T-cells (11, 12) may be involved. Maculopapular rashes are related to delayed T-cell hypersensitivity (11), where memory T cells might subsequently become most numerous in the most severely affected skin sites.

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Systemic contact dermatitis from cinchocaine

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Key words: local anaesthetics; cinchocaine; dibucaine; CAS 61-12-1; allergic contact dermatitis; lack of cross-sensitivity; systemic contact dermatitis; baboon syndrome; medicaments. © Munksgaard, 2001.

Case Report

A 62-year-old woman presented with erythematovesicular lesions of the perianal area, and an erythematous, oedematous rash of the face, axillae, elbow flexures and upper inner thighs., after several days' application of DoloPosterine N[®] ointment to the perianal skin and rectal mucosa for haemorrhoids. When treatment with DoloPosterine N[®] was stopped, all lesions cleared within 10 days on oral prednisolone.

6 weeks later, patch tests with the DKG standard series, including benzocaine 5 % pet., a series of preservatives, an antihæmorrhoidal medicaments series, including cinchocaine (dibucaine) 5% pet., local anaesthetics, DoloPosterine N[®] ointment and all its individual components, kindly supplied by the manufacturer, gave a positive reaction only to cinchocaine, the active ingredient of DoloPosterine N[®] (Table 1).

Discussion

Cinchocaine, used mainly in topical antihæmorrhoidals, is a well-known contact sensitizer (1–5). To our knowledge, it has been reported as a cause of systemic contact dermatitis only once before (6), as in our case in the form of the baboon syndrome (7). Systemic contact dermatitis has also been described from other medicaments, as well as from metals and other compounds (8).

In previous studies, patch testing with a series of local anaesthetics has shown cross-sensitivity among either ester or amide local anaesthetics (4, 9–13), though this is far from being the rule (4, 9) and a patient with contact allergy to 1 local anaesthetic does not necessarily

Table 1. Results of patch testing with DoloPosterine N[®] and local anaesthetics

Substance	Vehicle	(%)	D2	D3	D7
DoloPosterine N [®]	as is		++	++	++
cinchocaine	pet.	5	++	++	++
articaïne	pet.	1	–	–	–
benzocaine	pet.	5	–	–	–
lidocaine	pet.	15	–	–	–
mepivacaine	pet.	1	–	–	–
prilocaine	pet.	5	–	–	–
tetracaine	pet.	2	–	–	–

have to avoid all other local anaesthetics of the same group.

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The dental face mask – the most common cause of work-related face dermatitis in dental nurses

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Key words: occupational; irritant; protein contact dermatitis; natural rubber latex; protective gloves; dental face mask; questionnaire study. © Munksgaard, 2001.

Dental face masks filter out 40% of respirable particles (1). In a computer-assisted telephone interview study of occupational skin and respiratory symptoms of dental nurses (2), 1 question related to face dermatitis. 799 out of 923 (86.6%) dental nurses participated. 8% ($n=66$) reported face dermatitis connected with work, and 65% ($n=43$) of these that their face mask caused this. Thus, face mask dermatitis was reported by 5.4% (43/799) of dental nurses.

Case Report

A 28-year-old dental nurse developed hand dermatitis. Prick tests were positive for natural rubber latex (NRL), and a RAST confirmed NRL allergy. She also had several positive prick tests to vegetables and spices, though not to standard environmental allergens. Thereafter, she avoided NRL products, including gloves, and her hand eczema healed. 3 years later, she consulted a dermatologist because of recalcitrant face dermatitis. Patch testing was positive to nickel and cobalt, which were considered to be the cause via metal part of her mask. The insurance company sought our 2nd opinion.

Not wearing her dental mask had kept her face symptomless, and our patch testing confirmed nickel sensitivity down to 0.32% and cobalt allergy down to 0.01%. The

mask itself was negative. Prick testing gave a positive reaction to NRL only (Stallergènes), and not to the mask.

We then clarified the constituents of face masks that the patient had used or that were available on the Finnish market. 3 face masks contained NRL in the ribbon, and 2 face masks contained stainless steel coated with polypropylene in the metal piece of the mask. The metal parts of the 2 masks that the patient had used were analyzed by energy-dispersive X-ray analysis, and both contained aluminium but no nickel or cobalt.

Discussion

In Finland, dental personnel run a high risk of occupational skin disease (3, 4), but this usually manifests on the hands. 4.5% of Swedish dentists reported itching of the face from composite and bonding materials, compared to 3.1% from other materials (5), whereas Finnish dental nurses considered their masks to be the main cause. The face mask was also the most common cause among Norwegian dental hygienists (6).

Stainless steel occasionally causes allergic contact dermatitis in nickel-allergic individuals (7), but hardly when coated with polypropylene. 2 face masks contained NRL, but our patient had not used these.

We concluded that our patient had an atopic consti-

tution, and that her face dermatitis was probably caused by irritation, as we suspect it usually is in other dental personnel. Our patient's positive prick test and RAST to NRL reflected occupational protein contact dermatitis of the hands (8).

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Protein contact dermatitis in a fisherman using maggots of a flesh fly as bait

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Key words: larvae/maggots of flesh fly; protein contact dermatitis; bait; fisherman; *Calliphora vomitoria*. © Munksgaard, 2001.

Case Report

A 53-year-old atopic man presented with hyperkeratotic desquamative dermatitis of his hands, mainly involving the pulps of the thumb and index finger of both hands. This had appeared 6 months earlier, during the summer when, while fishing, he repeatedly handled uncoloured and red-stained maggots of a flesh fly used as bait (Fig. 1).

Patch tests with the GIRDCA-SIDAPA standard series were negative. Open tests with coelomic fluid from the maggots, on both healthy and damaged skin, were

negative, as well as an occlusive patch test. Rubbing and handling tests were both positive. Total IgE was 128 kU/l. The patient insisted that we proceed with a prick-by-prick test with coelomic fluid, which gave a strong wheal reaction at 30 min.

Discussion

Protein contact dermatitis (1) has been reported in fishermen using midge larvae (*Chironomus thummi thummi*) and marine annelid worms like *Nereis diversicolor* or *Lumbrinereis impatiens* as bait (2–7), but we could find no previous report of it from flesh fly maggots, though we suspect that it may be quite common.

The flesh fly maggot is a limbless carnivorous maggot born from eggs laid on animal flesh. In Italy, maggots of *Calliphora vomitoria* (a dipteran of the Calliphoridae family) are usually the ones used as fish bait, but the only scientific way of identifying the fly is to wait for the final metamorphosis of the maggot, which we declined.

Such maggots are sometimes coloured red or yellow to render them more attractive to various fish. Allergic contact dermatitis from azo dyes has thus been reported (8). In our case, there was no such sensitivity detected to azo dyes and, furthermore, results of all tests in our patient, whether with uncoloured or red maggots, were the same.

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Fig. 1. Protein contact dermatitis of the pulps from maggots used as bait.

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Seat-belt dermatitis from disperse blue dyes

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Key words: allergic contact dermatitis; seat belt; clothing dyes; Disperse Blue 106; Disperse Blue 124. © Munksgaard, 2001.

Case Report

A 53-year-old woman was originally seen in May 1999 with a contact dermatitis where a bra and girdle would fit her. Patch testing to a screening series showed a ++ response to gold sodium thiosulfate and + reaction on 2nd reading at 5 days to Disperse Blue 106 and Disperse Blue 153. Her clothing dermatitis cleared on avoidance of darker underclothing that might be expected to contain those dyes. However, she returned in June with a typical clothing pattern that had appeared some 12–15 h after she had worn a darker dress to a funeral. After this cleared, she broke out on her left shoulder the day after wearing an off-the-shoulder dress. She observed that this rash was located exactly where the dark blue shoulder (seat) belt in her car contacted her bare skin when wearing this dress. Avoidance again cleared the problem.

Comment

Disperse Blue dyes have become a common source of contact dermatitis. In 1 study, 33 of 788 patients reacted

to 2 textile dyes tested in either textile or screening series, and some 10% complained of perineal pruritus (1). Reactions to textile dyes, and especially Disperse Blue 106 and 124, have become common and may be occupational (2). Reactions to these textile dyes are not only an important source of contact allergy to clothing (3), they may apparently also be associated with allergy to other colored materials.

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