

Short Communications

Frequency of delayed-type hypersensitivity to contact allergens in psoriatic patients

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Key words: delayed-type hypersensitivity; irritant reaction; patch tests; psoriasis; medicaments; relevance. © Munksgaard, 1999.

Some authors (1) claim that contact allergy in psoriatic patients has been underestimated, while others (2, 3) report a frequent association. A high frequency of allergic contact dermatitis in flexural and palmoplantar psoriasis has been stressed (4, 5).

Patients and Methods

A cohort of 55 hospitalized psoriatic patients aged between 9 and 83 years (mean 53) were studied. 43 (23 male and 20 female) had diffuse psoriasis vulgaris and 12 (11 female and 1 male) palmoplantar psoriasis, of which 1 had the pustular form. Patients with erythrodermal and generalized psoriasis, and those on systemic corticosteroids or immunosuppressants, were excluded.

Particular regard was paid in the history to previous topical treatment. Disease severity was evaluated on a psoriasis area severity index (PASI) scale. Patch tests were performed with the 1996 GIRDCA standard series and a series of topical treatments for psoriasis (6 galenic and 10 commercial) (Table 1), readings being made at D2 and D3.

Table 1. Additional patch tests

pyrogallol acid 0.1% pet.
pyrogallol acid 0.5% pet.
salicylic acid 0.5% pet.
eosin 1% aq.
coal tar 5% pet.
wood tar mix pet.
allantoin 2% + wood tar 5% lotion (Alphosyle®)
calcipotriol 0.005% ointment (Daivonex®)
methylprednisolone 0.1% cream (Advantan®)
budesonide 0.025% cream (Bidien®)
mometasone furoate 0.1% cream (Elocon®)
clobetasol propionate 0.05% cream (Clobesol®)
betametasone valerate 0.1% ointment (Ecoval 70®)
hydrocortisone butyrate 0.1% lipocream (Locoidon®)
diflucortolone 0.3% ointment (Temetex Forte®)
fluocortolone ointment (Ultralan®)

Results

Mean PASI was 9.5 (range 0.7–31), mean duration of psoriasis 8 years and 7 months. 14 patients had 1 or more positive patch tests (Table 2): 9 in the standard series only, 1 in the additional series only, and 4 in both series. 4 of the 12 patients with palmoplantar psoriasis had 1 or more positive patch tests. 26 irritant reactions to the additional series were observed in 12 patients (Table 2). 7 cases positive to standard patch tests and the 2 cases positive to Daivonex® and Bidien®, respectively, turned out to have relevant reactions.

Discussion

Heule et al. (6) found positive patch tests in 68% of psoriatic patients. Other studies have observed positivity in about 25% of patients (2, 3). 1 study (7) showed no difference in the frequency of allergic reactions between atopsics, healthy persons or psoriatics, whereas Henseler et al. (1), calculated that allergic contact dermatitis was 3 × less frequent in psoriatics compared to a control group.

Our results agree with most studies published (2, 3), with the exception of those of Heule et al. (6) and Henseler et al. (1): the number of positive patch tests in psoriatics is similar to that in the normal population, nickel being the commonest allergen in both groups (2, 3, 8).

Our study did not reveal any higher positivity rate in palmoplantar psoriasis (2–5).

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Table 2. Patch test reactions

Patient no.	Age (years)	Sex	PASI	Type of psoriasis	Positive patch tests	Irritant reactions
1	47	M	3.3	vulgar	colophony Advantan® Bidien® Clobesol® Locoidon® coal tar	++ + + + + Daivonex®
2	80	M	13.2	vulgar	ethylenediamine 1%	+++
3	70	M	13.6	vulgar	paraben mix	+++
4	51	F	9.0	vulgar	nickel sulfate 5%	++
5	51	M	5.8	vulgar	nickel sulfate 5%	+
6	53	F	5.4	palmoplantar	mercury, ammoniated 1%	++
7	83	M	13.7	vulgar	ethylenediamine 1%	+
					Bidien®	+
					carba mix 3%	+
8	20	F	4.5	vulgar		Alphosyle® Bidien® Elocon®
					nickel sulfate 5%	++
					cobalt chloride 1%	++
					potassium dichromate 0.5%	++
					colophony	++
9	56	F	2.4	palmoplantar	wood tar	+
10	48	F	5.4	vulgar	coal tar	+
						Daivonex® Bidien® Daivonex® Alphosyle® wood tar Bidien®
11	77	F	16.5	vulgar		
12	44	M	18.6	vulgar		
13	52	F	6.3	vulgar	Daivonex®	+++
						Advantan® Bidien® Clobesol® Ecoval 70® Elocon® Locoidon® Temetex Forte® Ultralan® Alphosyle® Bidien® Alphosyle®
14	76	M	12.5	vulgar		
15	46	M	31	vulgar		
16	71	F	2.7	palmoplantar		
					imidazolidinyl urea 1%	+
					Alphosyle®	++
17	73	M	18.5	vulgar	wood tar	+
					nickel sulfate 5%	+++
					thiuram mix 1%	+
18	45	F	2.4	palmoplantar	potassium dichromate 0.5%	+
					potassium dichromate 0.5%	+
					cobalt chloride 1%	++
					nickel sulfate 5%	++
19	44	F	6.6	palmoplantar	fragrance mix 8%	++
						Alphosyle® Bidien® Elocon®
20	53	F	5.8	palmoplantar		
21	40	F	9.2	vulgar	thimerosal	+
						coal tar

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Allergic contact dermatitis from natural rubber latex without immediate hypersensitivity

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Key words: contact sensitivity; natural rubber latex; lack of immediate hypersensitivity; thiuram mix; carba mix; occupational; health care workers; nurses; dental patients. © Munksgaard, 1999.

Natural rubber latex (NRL) is obtained from the *Heavea braziliensis* tree. Products such as gloves are formed from concentrated liquid NRL (1). Contact urticaria from NRL has frequently been reported. However, isolated delayed hypersensitivity to NRL has been thought to be rare.

Case Reports

Patient no. 1. A 42-year-old female nutritional support nurse presented with a 2-month history of itchy dry hands. She was treated initially with 1% hydrocortisone cream, but subsequently developed blisters on her hands, particularly the lateral fingers. Her job involved handling central lines, frequently requiring her to wear disposable NRL gloves. She had had previous episodes of eyelid dermatitis, apparently related to using powdered disposable NRL gloves. In 1988, she had an episode of acute generalized dermatitis which resolved spontaneously. She had had rhinitis as a child, her mother had asthma and her sister hay fever.

She was patch tested to the European standard, preservative, vehicle, medicament and rubber series, together with small samples of Ansell Conform gloves and Marigold gloves. On both D2 and D4, she had positive reactions (+) to NRL and Marigold rubber gloves (both inside and outside surfaces). All other patch tests were negative. She was also prick tested to latex extract (Alyostal ST-IR, Stallergenes SA, France) and had an allergen-specific IgE test to NRL (Pharmacia CAP method; fluorometric assay): both were negative.

Patient no. 2. A 78-year-old retired female shop assistant presented with a several-year history of a dry scaly eruption on contact with certain rubber products, occasionally associated with peri-orbital oedema. She would develop a sore mouth 24 h after dental treatment. She had a past history of hypertension, hypothyroidism,

and scalp psoriasis, but no family history of skin disease.

She was patch tested to the European standard, preservative, vehicle, emulsifier, cosmetic and facial and rubber chemicals. The results are summarized in Table 1 (thiuram mix and carba mix, each ++ at D2 and D4). A prick test with NRL extract (Stallergenes) was negative, as was her allergen-specific IgE to NRL.

Discussion

Delayed hypersensitivity to NRL was first described by Wyss et al. in 1993 (2), with a further case reported in 1996 (3), in both reports in the absence of contact urticaria and with negative prick tests and normal IgE levels. Van der Walle & Brunsweld (4) described 2 hairdressers with delayed hypersensitivity to NRL and no associated contact urticaria, and described 4 other cases (unpublished data), although patients were not tested for Type I hypersensitivity. Wilkinson & Beck (5) reported 5 patients with delayed hypersensitivity to NRL, with no associated immediate reaction: 1 was considered not clinically relevant and 1 only possibly relevant; of the 3 considered clinically relevant, all had reactions to other rubber chemicals. More recently, Wilkinson and Burd (6) reported 7 cases of delayed hypersensitivity to NRL; and 2 of these were positive to other rubber allergens: 4 of the 7 had a positive prick test, the test being negative in the other 3; none of these patients had allergen-specific IgE tests to NRL performed.

Patients with delayed hypersensitivity to natural latex are increasingly being recognized by the addition of NRL to rubber series for patch testing patients with suspected rubber hypersensitivity. The histories in both our patients suggested rubber allergy. Patient no. 1 showed isolated delayed hypersensitivity to NRL, while patient no. 2 had additional hypersensitivity to other rubber compounds. Both patients were patch tested with the same high-ammonia latex concentrate (supplied by the Malaysian Rubber Board). It is possible, though unlikely, that this concentrate could contain small traces of tetramethylthiuram disulfide (R. Davies, Malaysian Rubber Board: personal communication). However, if it did, this may be of relevance to patient no. 2.

We conclude that NRL should be included when patch testing patients with suspected rubber allergy.

Table 1. Positive patch tests in patient no. 2

Series tested	Allergen (pet.)	D2	D4
thiurams	tetramethylthiuram monosulfide (0.25%)	+	+
	tetramethylthiuram disulfide (0.25%)	+	+
	tetraethylthiuram disulfide (0.25%)	+	+
	dipentamethylenethiuram disulfide (0.25%)	+	+
carbamates	bis (diethyldithiocarbamate) zinc (1%)	+	+
	bis (disbutylthiocarbamate) zinc (1%)	—	+
other rubber allergens	cyclohexyl thiophthalimide (1%)	—	+
	NRL (100%)	—	+

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Oral allergy syndrome with contact urticaria from cosmetic creams

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Key words: oral allergy syndrome; allergic rhinitis; contact urticaria; chamomile; mango; cosmetics; plant extracts.
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A 42-year-old woman had a personal history of infantile eczema and a family history of hay fever. At kindergarten age, she had had diarrhoea after eating citrus fruits and strawberries. Since 1996, she had undergone 2 kinds of changes: first allergic rhinitis during the spring months, outside of which she had slight symptoms of rhinitis only when an orange was being peeled; second, OAS and contact urticaria. She often had itchy wheals caused mainly, but not only, by eating fruit. During the 1st year that she had had rhinitis, she could not tolerate apples, and in the following year it was peaches, apricots and cherries. Eating these fruits resulted in OAS, manifesting itself as lip swelling, numbness of the tongue and swelling of the hand in which she held the fruit. Only apples caused her voice to become hoarse, and for less than 30 min; this had occurred 2× at the beginning of her illness.

The patient, after observing the harmful effects of the above-mentioned fruits, decided to test others before consuming them. Firstly, she would touch the fruit to be tested, then she would hold it in her hand for more than 10 min; next she would eat a small portion of it, and finally, after 30 min, she would consume a bigger portion. If there were still no adverse symptoms, she would conclude that the given food would be safe for her. Many other foods, during this initial testing, caused swelling of her hand or lips: pears, plums, sour cherries, lemons, oranges, sunflowers (including sunflower oil), caraway seeds, and both hazelnuts and walnuts. After peeling a banana, she would experience severe swelling of her hands, which would last several hours.

Independently from eating fruits, the patient would also have swelling after applying cosmetic creams containing plant extracts, especially those of chamomile or mango. Even though she would wash these creams off as soon as she felt itching, the swelling would continue for several hours.

Prick testing with plant pollen allergens and specific IgE testing was conducted (Table 1). Total IgE was 270 IU. Patch tests removed after 15 min were conducted as serial dilution tests with 2 contactants: chamomile oil 2.0%, 1.0%, 0.5% and 0.125%, and a distilled alcohol extract made from chamomile, Azulan (Herbapol, Poland) (20.0%, 10.0%, 5.0%, 2.5% and 1.125%). She was positive (immediate reactions) to all the Azulan dilutions. However, she was negative to all the chamomile oil dilutions. This may have been because of varying tolerance of thermostable and thermolabile antigens.

Occurrence of contact urticaria after using cosmetics containing chamomile and mango constitutes a peculiarity of this case. The positive reaction of this patient to the chamomile allergen on prick testing was the only one among 456 such tests conducted by us on patients with rhinitis.

Table 1. Results of the prick tests and specific IgE tests, related to symptoms

	Prick test (mm)		Specific IgE		Clinical symptoms
	wheel	flare	level	class	
hazel	5	20	1.03	2	rhinitis
alder	5	12	2.88	2	rhinitis
birch	4	18	5.77	3	rhinitis
oak	4	25	<0.2	0	rhinitis
sorrel	3	20	2.88	2	–
beech	3	8	–	–	–
black elder	3	6	–	–	–
artemisia	0	0	1.46	2	–
hop	2	1	–	–	–
chamomile fruit	5	7	–	–	contact urticaria
apple	6	25	–	–	OAS
hazelnut	3	8	–	–	OAS

Contact allergy to corticosteroids in asthma/rhinitis patients

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Key words: contact allergy; asthma; rhinitis; corticosteroids; adverse reactions; medicaments; treatment failures. © Munksgaard, 1999.

Patients with asthma and/or rhinitis, when using inhalers or nasal sprays containing corticosteroids, may experience mucosal symptoms, such as congestion of the nose, itching, nose bleeding and worsening of rhinitis, but also eczema of the face sometimes spreading to flexures, and sometimes the corticosteroid simply does not help. Few patients with such symptoms have been found to be allergic to their inhaled corticosteroids (1), and no report on whether contact allergy to corticosteroids could explain treatment failures is available. This issue was investigated in 2 ways: (i) by testing asthma/rhinitis patients for corticosteroid allergy, (ii) by looking at the prevalence of tixocortol pivalate allergy among dermatitis patients with and without asthma/rhinitis, respectively.

Patients and Methods

(i) 34 patients (10 with asthma, 13 with rhinitis, 11 with both), treated with corticosteroid inhalers and/or nasal sprays, and with symptoms such as lack of therapeutic effect, facial rashes, nose bleeding, burning sensations on the neck and arms, urticaria, general pruritus, and nasal septum ulceration and perforation, were patch tested with our standard series, including tixocortol pivalate (1.0% pet.) and budesonide (0.1% pet.), and an additional asthma/rhinitis series comprising 17 substances (Table 1). The tests were read after 3 and 7 days.

(ii) Since tixocortol pivalate was inserted in our standard series, 3951 consecutive dermatitis patients have been patch tested. For comparison, the contact allergy rates for tixocortol pivalate in these patients with and

without asthma/rhinitis (using the DALUK system information (2)) were looked at.

Results

(i) 1 case of tixocortol pivalate contact allergy was detected and 1 patient was found to be allergic to Tween 80. Other substances in the additional asthma/rhinitis series were negative. In 18 patients, 52 positive reactions to 21 sensitizers in our standard series were recorded (nickel 7, gold sodium thiosulfate 6, balsam of Peru 5, perfume mix 4, Kathon CG 3, palladium chloride 3, colophony 3, thimerosal 3, PPD 2, neomycin 2, Amerchol L-101 2, cobalt 2, formaldehyde 2, and tixocortol pivalate, quinoline mix, ethylenediamine, Germal II, Germal 115, benzocaine, chromium and black rubber mix, 1 each).

(ii) 40 out of 3951 (1.0%) dermatitis patients were hypersensitive to tixocortol pivalate. The tixocortol pivalate contact allergy rate for patients, with and without asthma/rhinitis, was 1.4% (1018 patients) and 0.9% (2933 patients), respectively.

Discussion

The patient allergic to tixocortol pivalate was tested with a dilution series of budesonide and also found to be allergic to this corticosteroid, present in both nasal and pulmonary preparations (3). From this pilot study, it appears that corticosteroid contact allergy does not seem to explain a significant number of adverse skin and/or mucosal symptoms or treatment failures in asthma/rhinitis patients. The fact that consecutive dermatitis patients with asthma/rhinitis had a higher, although not statistically significant ($p < 0.2$, χ^2 test), contact allergy rate to tixocortol pivalate, would be expected, since the asthma/rhinitis patients have 2 possible routes of corticosteroid exposure (skin and mucosa), as well as a higher frequency of atopic dermatitis with chronic eczema, a known risk factor for corticosteroid allergy (4).

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Table 1. Asthma/rhinitis patch test series

alclometasone dipropionate	1%	pet.
beclomethasone dipropionate	1%	eth.
betamethasone dipropionate	1%	eth.
betamethasone valerate	1%	eth.
clobetasol propionate	1%	eth.
flunisolide	2%	eth.
fluticasone propionate	1%	eth.
hydrocortisone alcohol	0.5%	DMSO/eth.
mometasone furoate	1%	eth./acet.
triamcinolone acetonide	1%	pet.
benzalkonium chloride	0.1%	aq.
butylated hydroxytoluene (BHT)	2%	pet.
DMSO/ethanol	50/50	
phenoxyethanol	1%	pet.
polysorbate 80 (tween 80)	5%	pet.
propylene glycol	5%	pet.
sodium metabisulfite	2%	pet.

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Acute irritant contact dermatitis from propionic acid used in animal feed preservation

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Key words: irritant contact dermatitis; Luprosil®; propionic acid; agriculture; food preservative; animal feed, occupational. © Munksgaard, 1999.

Case Report

A 29-year-old farmer came with a painful, sharply demarcated erythema on the left calf, measuring 11×7 cm, with widespread blistering. 4 days previously, he had been in contact with Luprosil® (99.5% propionic acid) on setting up pre-wilted silage. The undiluted acid had penetrated his clothing onto this calf. Topical corticosteroids cleared the erythema and relieved the pain.

Discussion

Propionic acid ($\text{CH}_3\text{-CH}_2\text{-COOH}$) is a short-chain carboxylic acid. Some of its derivatives are active components of NSAIDs (e.g., ibuprofen and ketoprofen), occasional causes of (photo)allergic or phototoxic contact dermatitis (1). There have been no previous case reports of dermatitis after contact with unsubstituted propionic acid.

Its bacteriological and fungistatic effects have for a long time made propionic acid a successful preservative for baking products, cereals and other agricultural products, including animal feed. The climate of Southern Germany and neighbouring alpine countries means that, for 6 months of the year, preserved feed has to be provided for dairy cattle. Increasingly, silage is used (e.g., maize and grass silage) as a relatively low-loss preservation method (2). Here, following the creation of aerobic conditions and reduction of the pH value, the growth of lactic acid bacteria is promoted and unwanted micro organisms suppressed.

The use of unsubstituted propionic acid as silage agent is permitted in Germany (3), and it is also success-

fully used in other countries, as it improves the preconditions for good fermentation and generally stabilizes the silage. It is used at concentrations between 0.4% and 0.7%, for cut surfaces at 25% concentration (4). The biostatic effect prevents faulty fermentation with bacteria such as clostridia, or any growth of mould (5) that produces toxins.

Propionic acid, a strong chemical irritant, is widely used as an agricultural preservative. Particular care and attention is vital, especially when used at higher concentrations. The use of adequate protective clothing is recommended to avoid any skin contact with the risk of possible caustic burns.

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Incidence rates of occupational contact urticaria caused by natural rubber latex

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Key words: epidemiology; incidence rates; contact urticaria; protein contact dermatitis; natural rubber latex; health care workers; occupational. © Munksgaard, 1999.

The prevalence of natural rubber latex (NRL) allergy in different populations has been reported (1–13), but little on incidence rates.

Materials and Methods

In Finland, occupational contact urticaria (CU), including protein contact dermatitis (PCD), has been classified as a separate occupational skin disease since 1989 (14,15). The incidence rates of occupational CU, including PCD, caused by NRL in different occupations over a 6-year period (1991–1996), were calculated from the data of the Finnish Register of Occupational Diseases (14,15) and from statistics on the working population in different occupations (16). Analyses were done using the Finnish classification of occupations (17), the structure of which has been reported earlier (14). In this study 1-, 2- and 3-digit coding levels were used (Table 1).

Results

A total of 1079 cases of CU or PCD were reported to the Register during the 6-year period. 288 (27%) of the cases were caused by NRL. There were more than 10 cases in only 6 occupations (at 3-digit level): physicians, nurses, assistant nurses and hospital attendants, dentists, dental assistants, and cleaners (Table 1).

Incidence rates were calculated per 10,000 employed worker years (Table 1): the highest were found at the 1-

digit level in health care and social work (1.3), at the 2-digit level in dental care work (9.3), and medical and nursing work (1.8), and at the 3-digit level in dental assistants (11.8), dentists (6.0), physicians (3.9) and nurses (2.2). The number of cases of CU and PCD annually by occupation has remained relatively stable (Fig. 1).

Discussion

As far as we know, only in Finland is occupational CU registered separately. During a 4-year period, 1567 cases of allergic contact dermatitis were registered and 620 cases of occupational allergic CU (18), 28% of all occupational allergic dermatoses. Unlike many other countries, NRL is 2nd to cow epithelium as a cause of occupational CU in Finland (14, 15).

In European health care workers, the prevalence of NRL allergy has ranged from 2.8% to 10.7% (2, 7–9) (Table 2). Higher such prevalences have been reported from Canada and the USA (1, 3–6) (Table 2). Not only health care workers may be at high risk (19).

NRL is the commonest cause of occupational allergic skin disease in laboratory assistants in Finland (20), the incidence rate being 1.0 per 10,000 worker years (Table 1). Although cleaners frequently use protective NRL gloves, their incidence rate per 10,000 employed worker years was not very high (0.5) (Table 1).

NRL allergy occurs in less than 1% of the general population (Table 2), being found in only 1 (0.12%) of

Table 1. 288 cases caused by NRL, and incidence rates calculated per 10,000 employed worker years; the code refers to the occupation (1-, 2- or 3-digit level)

Code	Occupation	Cases	Incidence
0	technical, scientific, humanistic	12	0.06
012	laboratory assistants	7	1.0
1	health care and social work	198	1.3
10	medical and nursing work	132	1.8
101	physicians	31	3.9
103	nurses	56	2.2
106	assistant nurses	23	1.4
12	dental care work	56	9.3
121	Dentists	16	6.0
122	dental assistants	40	11.8
2	managerial, administrative and	2	0.01
3	commercial work	1	0.01
4	agricultural, forestry and fishing	8	0.1
5	transport and communication work	1	0.01
6/7/8	manufacturing, machine operation	26	0.1
9	service work, etc.	36	0.3
942	cleaners	19	0.5
1–9	ALL OCCUPATIONS	288	0.2

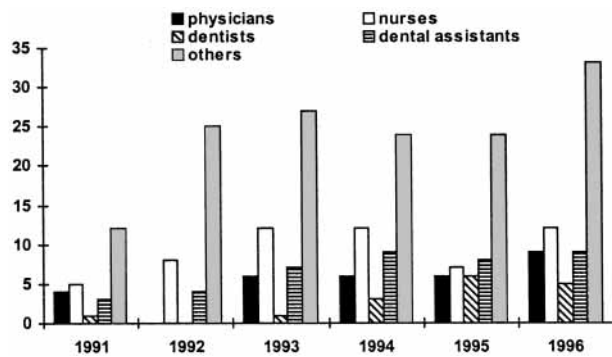


Fig. 1. Annual no. of cases of contact urticaria (including protein contact dermatitis) by occupation and year in Finland, 1991-1996

Table 2. Prevalence of NRL allergy in different populations

Populations	Prevalence (%)	Ref.
health care workers		
health care workers	12.1	(1)
operating room nurses	10.7	(2)
hospital physicians	9.9	(3)
operating room nurses	8.2	(4)
dental workers	6.2	(5)
hospital employees	5.5	(6)
hospital employees	4.7	(7)
hospital employees and dental care employees	3.5	(8)
hospital employees	2.8	(9)
general population		
atopics in an allergy clinic	3.0	(3)
atopics in an allergy clinic	0.85	(10)
non-atopics in an allergy clinic	0.4	(11)
adult surgical patients	0.12	(10)
multioperated patients		
spina bifida children	50.6	(12)
spina bifida children	32.0	(11)
spina bifida children	4.3	(13)

804 unselected adult Finns before surgery (10). A low, 0.4% prevalence rate was also found in French non-atopics attending an allergology clinic (11). Higher prevalences were found of 0.85% in 4708 Finnish patients with atopic symptoms (10) and 3% in 100 atopic patients in Canada (3). The highest prevalences are in spina bifida children (11-13) (Table 2)

Occupational allergic skin diseases are currently increasing in dental personnel (21), dentists running the highest risk (22), which is due to allergy to NRL and dental plastics. Dental assistants and dentists have now been shown to be at the highest risk of contact urticaria or protein contact dermatitis from NRL in Finland. Gloves must be selected to ensure adequate protection (23), but to carry a low risk of inducing NRL allergy (24).

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Allergic contact dermatitis from povidone-iodine

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Key words: allergic contact dermatitis; povidone-iodine (PVP-I); medicaments; surgical patients. © Munksgaard, 1999.

Iodine tincture is still frequently used because of its efficacy, low cost, and low toxicity. An iodophor is a complex of iodine and a carrier molecule, which not only increases iodine solubility but also releases iodine slowly, prolonging its effect. The most widely used iodophor is polyvinylpyrrolidone (povidone)-iodine (PVP-I).

Case Reports

Case no. 1

A 16-year-old boy presented with post-operative dermatitis on the distal right foot, after surgery on the right big toe nail, following which he had been treated with 10% PVP-I (Freka-cid[®] cream). This treatment was

stopped and, with oral prednisolone for 1 week, the dermatitis gradually resolved.

Patch testing with Freka-cid[®] cream and all its constituents supplied by the manufacturer revealed positive reactions to Freka-cid[®] and PVP-I (Table 1). Additional patch testing with a commercial series of common antiseptics showed a positive reaction to iodine (Table 1).

Case no. 2

A 62-year-old man had been treated on the right flank with povidone-iodine (Betaisodona[®] solution, also marketed as Betadine[®] solution) prior to surgery on the left kidney. Within 24 h after the operation, he developed allergic contact dermatitis at the site where the antiseptic solution had been applied. With topical corticosteroids, the contact dermatitis gradually resolved.

Patch testing with Betaisodona[®] solution and all its constituents supplied by the manufacturer revealed positive reactions to Betaisodona[®] solution and PVP-I (Table 1). Additional patch testing with a commercial series of common antiseptics showed a positive reaction to iodine (Table 1).

Table 1. Patch test results (readings according to ICDRG recommendations)

No.	Vehicle	D2	D3	D7
<i>Case no. 1</i>				
Freka-cid [®] cream	as is	+	+	+
5% povidone-iodine	aq.	++	++	++
10% povidone-iodine	aq.	++	++	++
5% povidone-iodine	pet.	++	++	++
10% povidone-iodine	pet.	++	++	++
0.5% iodine	pet.	++	++	++
povidone	as is	–	–	–
all other constituents of Freka-cid [®] cream		–	–	–
<i>Case no. 2</i>				
Betaisodona [®] solution	as is	++	++	++
10% povidone-iodine	aq.	++	++	++
0.5% iodine	pet.	++	++	++
povidone	as is	–	–	–
all other constituents of Betaisodona [®] solution		–	–	–

Discussion

Contact dermatitis from PVP-I is rare despite its widespread use. Both our patients had a history of previous exposure to PVP-I. The 1st patient had used Frekacid[®] cream several times before his right big toe was operated on. The 2nd patient had been operated on several times before and recalled previous pre-operative applications of a "brown solution". A 10% PVP-I solution contains 1% releasable iodine, but only 0.001% free iodine, which is why PVP-I is less toxic and irritant than iodine, without being less antiseptic. PVP-I is marketed in ointments, creams, lotions, soaps, and shampoos.

Irritant skin reactions and systemic effects have occasionally been reported from PVP-I preparations (6–8).

Allergic contact dermatitis from PVP-I has rarely been described (1–5, 9, 11). In 1980, Pohl-Markl et al. (9) performed patch testing in 2050 patients and found less than 0.5% reactions to iodine. The carrier povidone is believed to have little allergic potential, though there have been a few reports of immediate and delayed hypersensitivity to it (10–13).

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Allergic contact reactions to colophony presenting as oral disease

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Key words: allergic contact reactions; colophony; gum base; chewing gum; oral disease; children. © Munksgaard, 1999.

Case Reports

Case no. 1

A 12-year-old boy was referred from a dental hospital with a 10-month history of painful oral ulcers, which recurred every 2 weeks, in crops of 4–5, and lasted for approximately 1 week. He chewed 1 packet of either Juicy Fruit®, Hubba Bubba-apple® or Arrowmint® gum per day, and reacted to sticking plaster. He was otherwise well and had no dental fillings. Examination revealed shallow ulcers on the inner lower lip.

Case no. 2

A 31-year-old nurse was referred by her general practitioner with 1-year history of burning mouth and agio-oedema, which was particularly troublesome 2 days after working a night shift. She chewed 1 packet of either Juicy Fruit®, Extra Sugarfree-peppermint® or Airway-mint® gum during her night shift, and reacted to striking plaster, costume jewellery and avocado. Clinical examination was normal.

Both patients were patch tested to the European standard series, perfumes and flavours, antimicrobials, food

additives and toothpaste flavours. Patient no. 1 gave a +++ reaction to colophony 20% pet. at D2, which persisted to D4, and a ++ reaction to lanolin 30% pet. Patient no. 2 gave ++ reactions to colophony 20% pet., nickel 5% pet., cobalt 1% pet. and Kathon CG® 0.02% aq. at D4. RAST to avocado was normal but raised to latex (1.13 kU/l).

Both patients were advised on allergen avoidance, particularly chewing gum. At 6-week follow-up, both had improved, with patient no. 1 developing the occasional ulcer and patient no. 2 having no further episodes of burning or angio-oedema. At 3-month follow-up, both were clear of their original oral complaint.

Discussion

Although colophony is in dental cement and cavity sealant, it rarely causes oral disease. Biopsy-proven oral lichen planus caused by colophony from a broken denture has been reported (1). Oral ulceration was thought to be due to hypersensitivity to mint in chewing gum, though patch tests were not performed (2). There are 2 reports of gingivostomatitis caused by chewing gum (3, 4), but 1

group were not patch tested (3) and patch testing in the 2nd report was inconclusive (4), though challenge with chewing gum resulted in recurrence of oral disease (4). Perioral dermatitis has also been reported in a child who chewed gum frequently (5), patch testing being positive to colophony, cobalt, fragrance mix, oakmoss and isoeugenol, as well as to chewing and bubble gums (5).

Colophony is a constituent of the gum base of chewing gum and is particularly found in Juicy Fruit® and Hubba Bubba® gums (personal communication, The Wrigley Company Limited®). Our 2 patients were both positive to colophony, supporting the rare association between contact allergy to colophony in chewing gum and oral disease.

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Oral lichen planus versus oral lichenoid eruption as a manifestation of contact allergy

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Key words: oral lichen planus; oral lichenoid eruptions; mercury amalgam; dental materials; dental patients; contact allergy. © Munksgaard, 1999.

Last year, we saw a patient with an oral lichenoid eruption (OLE) of 10 years standing, due to allergy to mercury in dental fillings, replacement of which completely healed the lesions. We therefore decided to evaluate retrospectively 21 patients with oral lichen planus (OLP).

Patients and Methods

Among 21 patients with a clinical and histopathological diagnosis of OLP, 2 groups were identified: group A – 12 patients (5 female and 7 male) with metallic prostheses or dental fillings currently or in the past; Group B – 9 patients (3 female and 5 male) without such. Both groups included patients with acrylic prostheses. Clinical data are shown in Table 1, histopathological data in Table 2, and the results of patch testing with the

GPEDC standard series and dental screening series (Trolab and Chemotechnique) in Table 3. All biopsy specimens were reviewed blinded to the clinical background, 5 cases being rejected and no difference being found between the 2 groups. 3/12 patients in group A were mercury-positive, 2 in relation to dental fillings; 1 was allergic to chromium in a metal prosthesis. No relevant reactions were seen in group B.

Table 1. Clinical data

Clinical features	Group A (12 patients)	Group B (9 patients)
duration	8 m–10 y	1–11 y
symmetry	9	5
location:		
buccal mucosa	9	6
gingival mucosa	2	2
tongue	5	4
symptoms:		
burning	12	9
leukoplakia	9	4
erosion	0	4
acrylic prosthesis	6	6

Table 2. Histopathological data

Histopathological features	Group A (12 patients)	Group B (9 patients)
erosion	7/12	3/9
acanthosis	8/11	3/5
atrophy	3/11	2/5
granulosis	11/11	1/5
keratosis:		
ortho	4/11	5/5
para	7/11	2/5
degeneration	11/11	5/5
Civatte bodies	5/11	2/5
lymphoid infiltrate	11/11	5/5

Table 3. Patch test results

Allergen	Group A (12 patients)	Group B (9 patients)
ammoniated mercury	2 (1–R; 1–PR)	1 (NR)
metallic mercury	3 (2–R; 1–PR)	1 (NR)
potassium dichromate	1 (R)	–

R: relevant; PR: past-relevant; NR: non-relevant.

Discussion

OLP and OLE are mainly seen in dental clinics. Some studies have identified drugs as responsible (1): we were unable to do so. As in previous reports (2, 3), we found no clinical or histopathological differences between OLP and OLE. Many previous publications have associated OLE with allergy to mercury amalgam (4–7), in agreement with our findings. We consider that the term oral lichen planus should be reserved for the idiopathic condition, all in which a cause can be found being classified as oral lichenoid eruptions. In the presence of dental materials, patch testing should always be performed, since replacement can be curative.

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Allergic contact dermatitis from colophony and Compositae in a violinist

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Key words: colophony; allergic contact dermatitis; Compositae; rosin; violinist; plants; musicians; occupational; gardening. © Munksgaard, 1999.

A 47-year-old man had a 6-year history of persistent pompholyx hand dermatitis. This was controlled by regular potent topical corticosteroids and no aggravating factors were noted. There was no personal or family history of atopy. He was a violinist and had played daily for 30 years. He had managed a music and musical instrument shop for the last 2 years. Our patient was also an enthusiastic gardener, often working with bare hands, but had noted no exacerbate from this.

2 years prior to presentation, he had abruptly developed a severe vesicular eruption on the feet. This was attributed to contact allergy to footwear though no patch tests were performed. Subsequently, he avoided footwear containing PTBPF resin and had had no further foot problems.

Patch testing to the European standard, corticosteroids, medicaments, and plant series were performed, with Finn Chambers on Scanpor removed at D2. D4 readings showed positive reactions to colophony (+++), fragrance mix (+++), PTBPF resin (++), lanolin (++), paraben mix (++), Compositae mix (+++), dandelion (++) and daisy (++).

An informal telephone survey of prominent UK violin retailers suggests that colophony dermatitis (1, 2) is rarely encountered. A much more common problem for violinists is allergic contact dermatitis from nickel. This is conspicuous, as it primarily affects the index finger, due to contact with the ferrule and throat of the bow that are made of metal. Rosin (colophony) applied to the bow contributes importantly to the sound produced.

No suitable alternative is available. Low-dust variety and liquid varieties are marketed, but these are only beneficial in colophony-induced asthma or eye irritation. Cotton gloves are impractical because of the dexterity required. Rosins used in the UK are of unmodified type. Modification of rosins may reduce their capacity for sensitization. However, this alters their consistency and thus the quality of sound produced.

It is no surprise that the patient was positive to fragrance mix, as this is the case in 60% of colophony-allergic patients. Patients with multiple allergies are more easily sensitized (3). It may be that allergy to Compositae developed later, as Compositae allergy can be facilitated by pre-existing allergic contact dermatitis. Patients with Compositae allergy commonly have a pompholyx-type hand dermatitis, as in our patient (4).

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Contact allergy to methyldibromo glutaronitrile presenting as severe scalp seborrhoeic eczema

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Key words: allergic contact dermatitis; methyldibromo glutaronitrile; seborrhoeic eczema; cosmetics; hair products; preservatives. © Munksgaard, 1999.

Euxyl® K400 is a biocide containing 2 active ingredients, phenoxyethanol and methyldibromo glutaronitrile (MDGN), in a 4:1 ratio. Contact allergy to it has been increasing in Europe and the USA since its introduction in the mid-1980s and 1990, respectively (1–4). The allergen in Euxyl® K400 is virtually always MDGN (5–7) and sensitization is most commonly acquired through exposure to cosmetics and moistened toilet tissue. Less common sources include latex paints and emulsions, adhesives, liquid detergents and metalworking fluids.

Case Report

An 18-year-old woman presented with a 6-month history of severe scalp eczema, in association with mild eczema of the axillary, presternal, interscapular and inguinal areas. Morphology and distribution were consistent with seborrhoeic eczema, though the severity of scalp involvement was unusual and conventional therapy had failed to improve this. Patch testing showed positive responses to MDGN (0.3% pet.) (++) and to a hair mousse (+) used daily by the patient. MDGN was also identified as an ingredient in a leave-on hair conditioner that she applied weekly. Elimination of these products resulted in rapid improvement.

Discussion

This case highlights the importance of recognizing the potential for allergic contact dermatitis developing in the setting of endogenous eczema. Contact allergy to MDGN usually presents with facial, hand or perianal dermatitis, though patch testing with suspected products

often gives false-negative reactions due to low allergen concentration (8, 9). Presentation with severe scalp dermatitis, in the setting of seborrhoeic eczema, and the positive patch test to a suspected hair mousse, are unusual findings in this case.

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Sensitization to cocamidopropylbetaine: an 8-year review

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Key words: cocamidopropylbetaine; allergic contact dermatitis; hairdressers; occupational; shampoos; cosmetics; surfactants; residues. © Munksgaard, 1999.

Cocamidopropylbetaine (CAPB) is an amphoteric surfactant commonly used in rinse-off products such as shampoos, shower gels and skin cleansers. In patients being patch tested because of suspected contact derma-

titis, the reported frequency of sensitization to CAPB has ranged from 1.4–7.2% (1–4). Sensitization frequencies among hairdressers with dermatitis have been reported in the range of 3.7–5.0% (1, 5). Dimethylam-

inopropylamine (DMPA) and amidoamine (cocamidopropyl dimethylamine), 2 residues remaining after manufacture, have been suggested as the actual allergen in CAPB (2, 3, 6, 7).

Patients and Methods

CAPB has been added to our standard series since January 1991. From 1991–1994, patch testing was performed with Tegobetaine L7 1% aq. (Goldschmidt), and from 1995 onwards with CAPB 1% aq. (Hermal). The former contains significantly higher levels of reactant and intermediate residues. From January 1991 to September 1998, 10,798 patients with suspected contact dermatitis were patch tested.

Results

29 patients (22 female, 7 male) (0.27% of total) showed a positive reaction to CAPB during this period (Table 1). During 1991–1994, 24 positive responses (0.40%) were noted. From 1995 to September 1998, 5 positive responses (0.11%) were noted. The allergen was regarded as of current or past relevance in 23 (79%) cases. Only 1 of the 29 was a hairdresser. The commonest sites were the face and neck (11 cases), widespread (8 cases) and the hands (5 cases).

During the same period, 184 hairdressers (108 with hand dermatitis) and 2504 patients with eczema of the face and neck or scalp were patch tested, which gives a frequency of sensitization to CAPB in this occupation of 0.54%, and one of 0.44% in patients with head and neck eczema.

Discussion

This study showed a relatively low frequency of sensitization to CAPB throughout the period examined compared with other series (1–4), there being a further decline in the frequency of CAPB allergy after the patch test substance was changed from Tegobetaine L7 to a purer grade. The frequency of CAPB allergy in hairdressers is also much lower than previously reported (1, 5). CAPB may produce irritant false-positive reactions

Table 1. Patch test results with CAPB: 1991–September 1998

Year	1991	1992	1993	1994	1995	1996	1997	1998
CAPB +ve	8	6	5	5	2	1	0	2
total tested	1689	1657	1515	1181	1092	1395	1462	807
% +ve	0.47	0.36	0.33	0.42	0.18	0.07	0.00	0.25

(8). If the actual allergen in CAPB is indeed a residue, CAPB with minimal levels of impurities should be used, for cosmetic manufacture. The declining frequency of CAPB sensitization may reflect the increasing commercial use of higher purity grade CAPB in such products. On the other hand, patch testing with these residues may identify contact allergy that may be missed with purified CAPB, and studies are ongoing to examine this possibility.

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Eyelid dermatitis caused by delayed-type hypersensitivity to natural rubber latex

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Key words: allergic contact dermatitis; eyelid paste; natural rubber latex; cosmetics. © Munksgaard, 1999.

Single-edged eyelids are seen in about 40% of the Japanese population. Application of so-called “eyelid paste”, which causes eyelid skin to be adherent and appear double, has become popular among teenage girls.

Case Report

An 18-year-old non-atopic healthy Japanese woman had a 1-year history of itchy, erythematous, scaly eruptions



Fig. 1. Erythematous scaly eruptions on the patient's eyelids.

on her eyelids (Fig. 1). She did not use eyelash curlers or any other cosmetics, but had applied an eyelid paste on her upper eyelids every morning for 2 years for cosmetic purposes. The dermatitis disappeared soon after discontinuing the eyelid paste application followed by treatment with topical corticosteroid.

Patch testing with an occlusion time of 2 days on her back gave positive reactions on days 3, 4, and 7 to the eyelid paste (as is) and its chief ingredient (50% v/v) natural rubber latex (NRL) (low ammonia, 10% pet.). No reactions were detected to parabens, fragrances or other ingredients, including rubber additives and pre-

servatives. Serum total IgE was 148 IU/ml. She had never worn rubber gloves. A prick test with NRL solution from rubber gloves (1) was negative as was also a RAST to NRL.

Comment

There are few reported cases of delayed-type hypersensitivity to NRL, in spite of the current frequency of immediate-type reactions (2–4). We propose 3 mechanisms that may have contributed to its induction in this case: (i) weak barrier function of eyelid skin, (ii) repeated and long-term application of NRL, and (iii) application of liquid NRL, which has shown an earlier, stronger reaction than dried rubber latex on patch testing (4).

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Drug eruption due to flavoxate hydrochloride

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Key words: adverse drug reactions; flavoxate hydrochloride; positive patch test; oral challenge; medicaments. © Munksgaard, 1999.

An 83-year-old man presented with pruritic erythema all over the body, accompanied by fever and loss of appetite, which had started 1 month before. He had been taking Bladderon® (flavoxate hydrochloride; Nippon shin-yaku Co. Ltd., Kyoto) 200 mg t.d.s., tamsulosin hy-

drochloride 0.2 mg u.d.s., and allylestrenol 25 mg d.d.s. for prostatic hypertrophy for about 6 months. Histological findings of erythema on the right forearm demonstrated a dense perivascular infiltration of lymphocytes and a small amount of eosinophils.

We performed patch tests with 1, 5, and 10% pet. of flavoxate hydrochloride, tamsulosin hydrochloride, and allylestrenol. Only flavoxate hydrochloride showed a positive response at D3 to 10% pet. Patch tests with 1, 5, 10% pet. of flavoxate hydrochloride in 4 normal subjects showed no erythema or papular response at D2 and D3. Oral challenge test with flavoxate hydrochloride 600 mg produced pruritic erythema all over the body, with fever. LST (lymphocyte stimulation test) with flavoxate hydrochloride was negative.

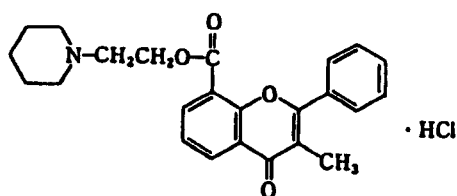


Fig. 1. Chemical structure of flavoxate hydrochloride.

Discussion

Flavoxate hydrochloride, a flavoxate derivative, is used for the treatment of urinary frequency and urinary retention due to neurogenic bladder, chronic prostatitis and chronic cystitis in Japan, UK, USA and Italy. Flavoxate hydrochloride causes certain other adverse effects, e.g., gastrointestinal symptoms and sleepiness (Nippon shin-yaku, personal communication), but no case of drug eruption due to flavoxate hydrochloride has been reported in the English literature.

Flavoxate suppresses the overactive bladder by its relaxant activity on the detrusor muscle, and its central suppressive effect on the micturition reflex (1). No case of drug eruption due to the similar well-known drugs,

oxybutynin hydrochloride and propiverine hydrochloride, has been reported. The structural formula of flavoxate hydrochloride is shown in Fig. 1. As this drug is commonly used for urinary frequency and urinary retention in elderly people, attention should be paid to the erythematous type of drug eruption well-seen in our case.

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Contact dermatitis from pheniramine maleate in eyedrops

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Key words: antihistamines; allergic contact dermatitis; pheniramine maleate; eyedrops; cross-reactivity; medicaments; ophthalmics. © Munksgaard, 1999.

Case Report

A 30-year-old woman, with a history of allergic oculorhinitis from Gramineae pollen, presented with bilateral conjunctivitis and eyelid dermatitis for the past 4 months.

She was patch tested with the GIRDCA standard series and the ophthalmic preparations that she was using, showing positive reactions to nickel sulfate 5% pet., para-phenylenediamine 1% pet. and Tetramil® (as is), an eyedrop containing tetrazoline chloride (sympathomimetic) and pheniramine maleate (H1-receptor antagonist). Further patch testing with the individual constituents of Tetramil® revealed a positive reaction to pheniramine maleate (D2 +/D3 ++) (Table 1), and the patient completely recovered after abandoning the eyedrops.

1 month later, we recalled the patient to test other alkylamine derivatives, including dexchlorpheniramine maleate, chlorpheniramine maleate and dimethindene maleate, together with promethazine hydrochloride and

diphenhydramine hydrochloride, a phenothiazine and an ethanolamine antihistamine, respectively. Positive reactions were found with dexchlorpheniramine, chlorpheniramine and diphenhydramine (Table 1). A careful history revealed that in the past, the patient had occasionally used a cream containing chlorpheniramine maleate without problems.

Comment

Allergic contact dermatitis due to antihistamines of the alkylamine group, such as pheniramine maleate, is described mostly in Italy (1), where they are used in various preparations (Polaramin® cream, Trimeton®, Fenistil® gel, Tetramil®, Visuglican®) (2–4). Tetramil® eyedrops, like other antihistamine eyedrops, may be sold in Italy without a prescription.

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Table 1. Patch test results with antihistamines

Allergen	D2	D3
pheniramine maleate 1% aq.	+	++
dexchlorpheniramine maleate 1% aq.	+	++
chlorpheniramine maleate 1% aq.	+	++
dimethindene maleate 0.1% pet.	–	–
promethazine hydrochloride 0.1% pet.	–	–
diphenhydramine hydrochloride 2% pet.	+	++

Allergic contact dermatitis due to epirubicin

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Key words: allergic contact dermatitis; epirubicin; mitomycin; cytotoxic antibiotics; medicaments. © Munksgaard, 1999.

Case Report

A 73-year-old man with bladder cancer, who had previously been treated with intravesical mitomycin, developed a widespread dermatitis 12 h after his 1st instillation of Farmorubicina® (epirubicin). A patch test with epirubicin 0.1% aq. was positive, the European standard series negative.

Comment

Mitomycin has previously been reported as a contact allergen (1–4). This case raises the question as to

whether there might be cross-sensitivity between mitomycin and epirubicin.

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Pigmented contact dermatitis due to *Plathymenia foliosa* dust

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Key words: pigmented contact dermatitis; plants; phytophototoxic; Leguminosae; *Plathymenia foliosa*; airborne; occupational; carpenter. © Munksgaard, 1999.

The vinhático (*Plathymenia foliosa*) is a tropical tree of the Leguminosae family that is native to Brazil.

Case Report

A 35-year-old carpenter had a 3-year history of pigmented lesions on the face, trunk, neck and hands after protracted contact with vinhático. There were brown areas on the forehead (Fig. 1), cheeks, temples, chin, neck and dorsa of the hands. A biopsy from a pigmented facial lesion showed chronic lichenoid dermatitis with

pigmentary incontinence. Patch and photopatch tests with a standard series and *Plathymenia foliosa* dust were negative, but after 10 weeks, the patient noted pigmentation in the area where we had applied the powder.

Discussion

The vinhático (*Plathymenia foliosa*) tree is frequent in Brazil and can reach a magnificent size and beauty. It is used in naval and civil construction and traditionally in furniture manufacture (1). It belongs to the Leguminosae family and is therefore believed to contain furocoumarins (psoralens), which can produce phototoxic reactions (2). Our patient developed pigmented lesions in photo-exposed areas after occupational exposure to vinhático dust as a carpenter. The photopatch test reproduced the pigmentation 10 weeks later. Hyperpigmentation following phototoxicity is well-described (3).

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Fig. 1. Pigmented lesions on the forehead.