

CONTACT POINTS

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Recurrent fixed drug eruption due to metronidazole elicited by patch test with tinidazole

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Key words: cross-reactivity; fixed drug eruption; metronidazole; nitroimidazole; positive lesional patch test; tinidazole.

Among the few cases of fixed drug eruption (FDE) due to metronidazole to have been reported (1–7), patch testing has demonstrated to be useful in diagnosis (5–7).

Case Report

A 34-year-old woman, with a personal history of FDE due to sulphonamides, had been treated 4 months ago with oral metronidazole for trichomonal vaginitis. On the 4th day of treatment, she developed pruritic erythematous and blistered lesions on interdigital areas and on the palmar side of the thumb finger of her left hand. About 3 months later, the same lesions appeared in the same locations some hours after the topical application of the first ovule of metronidazole for recurrent vaginitis, remaining as hyperpigmented macules at these locations. FDE due to metronidazole was diagnosed clinically.

Patch testing with tinidazole and ornidazole 10% in dimethyl sulfoxide (DMSO) was performed on normal skin and on residual lesions. Tinidazole applied on a residual lesion was positive (Fig. 1), though negative on normal skin, while ornidazole was negative on both. The patient declined any further testing.

Discussion

Metronidazole is a drug belonging to the 5-nitroimidazole group. There are few cases reported of FDE due to metronidazole (1–7). Most of them have been diagnosed by oral challenge testing (2–4), but topical provocation testing has been documented as useful and safe for diagnosis when applied on residual lesions (5–7). Various drug concentrations and vehicles [metronidazole 0.8% gel (5), 5% and 10% aq (6) and 50% pet (7)] have been used.

Cross-reactivity among nitroimidazoles has been reported by positive oral challenge testing: mainly between metronidazole and tinidazole (2, 8, 9) and, in one case, between albendazole and metronidazole (10). Such authors found no cross-reactivity with secnidazole (2) or with albendazole, ketoconazole and mebendazole (8).

Gastaminza et al. (7) reported a case of FDE due to metronidazole confirmed by a positive patch test applied on a residual lesion (metronidazole 50% pet.). They also investigated cross-reactivity by patch testing on residual lesions and on normal skin with tinidazole (50% pet.) and tioconazole (Trosid[®] cream as it), with negative results.

We describe a case of recurrent FDE following metronidazole therapy, with cross-reactivity with tinidazole confirmed by positive residual-lesional patch testing, using DMSO as vehicle. As has been reported with other drugs (11,12), patch testing can be useful in the study of cross-reactivity among nitroimidazoles.

References

1. Walfish A E, Sapadin A N. Fixed drug eruption due to doxycycline and metronidazole. *Cutis* 2002; 69: 207–208.
2. Thami G P, Kanwar A J. Fixed drug eruption due to metronidazole and tinidazole without cross-sensitivity to secnidazole. *Dermatology* 1998; 196: 368.
3. Shelley W B, Shelley E D. Fixed drug eruption due to metronidazole. *Cutis* 1987; 39: 393–394.
4. Naik R P, Singh G. Fixed drug eruption due to metronidazole. *Dermatologica* 1977; 155: 59–60.
5. Short K A, Fuller L C, Salisbury J R. Fixed drug eruption following metronidazole therapy and the use of topical provocation testing in diagnosis. *Clin Exp Dermatol* 2002; 27: 464–466.
6. Vila J B, Bernier M A, Gutierrez J V, Gomez M T, Polo A M, Harrison J M, Miranda-Romero A, Munoz C M. Fixed drug eruption caused by



Fig. 1.

- metronidazole. *Contact Dermatitis* 2002; 46: 122.
7. Gastaminza G, Anda M, Audicana M T, Fernández E, Muñoz D. Fixed-drug eruption due to metronidazole with positive topical provocation. *Contact Dermatitis* 2001; 44: 36.
 8. Mishra D, Mobashir M, Zaheer M S. Fixed drug eruption and cross-reactivity between tinidazole and metronidazole. *Int J Dermatol* 1990; 29: 740.
 9. Kanwar A J, Sharma R, Rajagopalan M, Kaur S. Fixed drug eruption due to tinidazole with cross-reactivity with metronidazole. *Dermatologica* 1990; 180: 277.
 10. Mahboob A, Haroon T S. Fixed drug eruption with albendazole and it's cross-sensitivity with metronidazole: a case report. *J Pak Med Assoc* 1998; 48: 316–317.
 11. Tornero P, De Barrio M, Baeza M L, Herrero T. Cross-reactivity among para-amino group compounds in sulfonamide fixed drug eruption: diagnostic value of patch testing. *Contact Dermatitis* 2004; 51: 57–62.
 12. Ordoqui E, De Barrio M, Rodríguez V M, Herrero T, Gil P J, Baeza M L. Cross-sensitivity among oxicams in piroxicam-caused fixed drug eruption: two case reports. *Allergy* 1995; 50: 741–744.

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Photoallergic and allergic reaction to 2-hydroxy-4-methoxybenzophenone (sunscreen) and allergy to cetyl alcohol in cosmetic cream

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Key words: 2-hydroxy-4-methoxybenzophenone; 2-hydroxy-4-methoxy-4-methyl-benzophenone; allergy; cetyl alcohol; cosmetic cream, photoallergy; sunscreen.

In recent years, there has been a great increase in the use of ultraviolet (UV) filters, with the main aim of alleviating the carcinogenic and photoageing potential of solar radiation (1, 2). These agents are also added to cosmetic products such as moisturizers, creams, to reduce premature ageing of the skin and to prolong their shelf life by protecting against photodegradation. As a result of this increase in consumer exposure to UV filters, several reports have appeared in the literature regarding allergy and photoallergy to sunscreens (3).

Case Report

A 24-year-old woman, with no personal history of atopy, developed face eczema after using cosmetic cream named Beautiful morning[®] (Avon Cosmetics, Warsaw, Poland). She was treated at our allergological outpatient clinic and showed improvement with the topical corticosteroids and antihistaminic drug.

Patch testing was performed with European standard series, cosmetic series (Chemotechnique Diagnostics, Malmö, Sweden) and own cream. We used polyethylene chambers attached to a hypoallergenic porous tape (IQ Chambers, Chemotechnique). Readings were made at D2 and D4, according to the ICDRG. Photopatch testing was performed with sunscreen series (Chemotechnique). All photopatch chemicals were applied in duplicate sets. One set of the photoallergens was removed after 24 h and irradiated with 5 J/cm² UVA, using a Waldmann UV 801 K lamp (Villingen-Schwenningen, Germany).

Test reactions were read at D1 and D3 after irradiation. Results are summarized in Table 1. Beautiful morning[®] cream includes, among other things, cetearyl alcohol 1–5% and Benzophenone 3 1–5%.

Discussion

Sunscreen allergy is not common. Although the data has shown adverse reactions to sunscreens to be as high as 19% (4), the majority of these were because of irritant rather than allergic reactions to either the sunscreen agents or the base. The prevalence of allergy to sunscreens in general population is not known. The pattern of reactions to active sunscreen agents is also changing. The first filters included p-aminobenzoic acid and its esters. Reports of photoallergy to these agents soon led to their removal from the manufacturing of sunscreens, and filters started to contain benzophenones as an alternative. Subsequently, reports of photoallergic reactions to benzophenone increased, and more positive photopatch tests to members of this group, such as benzophenone-3 and benzophenone-10, are now emerging (5, 6).

Our patient has reacted in patch test to benzophenone-3, but the reaction was more intensive after UVA radiation. Then a cross-reaction to benzophenone-10 appeared. We have also observed hypersensitivity to cetyl alcohol. Cetyl alcohol, often combined with stearyl alcohol (cetearyl alcohol), is an ingredient in many medicaments and cosmetics, in which it acts as an emulsifier and stabilizer. Generally, it is a rare sensitizer, and there are few reports of contact dermatitis due to cetyl alcohol (7, 8).

Table 1. Results of patch tests (PTs) and photopatch tests (PPTs) after irradiation with ultraviolet A

Allergens	Positive PT	Positive PPT
2-Hydroxy-4-methoxybenzophenone (Benzophenone-3) – 10% pet.	++	+++
2-Hydroxy-4-methoxy-4-methyl-benzophenone (Benzophenone-10) – 10% pet.	–	+++
Face cream Beautiful morning [®] – as is	++	NT
Cetyl alcohol – 5% pet.	++	NT

NT = not tested; pet. = petrolatum.

References

1. English J S C, White I R, Cronin E. Sensitivity to UV filters. *Contact Dermatitis* 1987; 17: 159–162.
2. Marguery M C, Bazex J. Photoallergic contact dermatitis due to 2-hydroxy-4-methoxybenzophenone (oxybenzone): report of four cases. *Br J Dermatol* 1989; 121: 59–60.
3. Schauder S, Ippen H. Contact and photocontact sensitivity to sunscreens. Review of a 15-year experience and of the literature. *Contact Dermatitis* 1997; 37: 221–232.
4. Foley P, Nixon R, Marks R, Frowen K, Thompson S. The frequency of reactions to sunscreens: The result of a longitudinal population-based study on the regular use of sunscreens in Australia. *Br J Dermatol* 1993; 128: 512–518.
5. Szczurko C, Domp Martin A M M, Moreau A, Leroy D. Photocontact allergy to oxybenzone. Ten years of experience. *Photodermatol Photoimmunol Photomed* 1994; 10: 144–147.
6. Knobler E, Almeida L, Ruszkowsky A M, Held J, Harber L, DeLeo V A. Photoallergy to benzophenones. *Arch Dermatol* 1989; 125: 801–804.
7. Oiso N, Fukai K, Ishii M. Concomitant allergic reaction to cetyl alcohol and crotamiton. *Contact Dermatitis* 2003; 49: 261.
8. Soga F, Katoh N, Kishimoto S. Contact dermatitis due to lanconazole, cetyl alcohol and diethyl sebacate in lanconazole cream. *Contact Dermatitis* 2004; 50: 49–50.

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Anaphylaxis to patent blue during sentinel lymph node identification

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Key words: anaphylaxis; patent blue; sentinel lymph node.

For the current management of patients with breast cancer and high-risk melanomas in particular, sentinel lymph node identification by patent blue is a frequently used procedure to trace the first regional lymph node (1–5). In the sixties and seventies, allergic reactions to patent blue were primarily attributable to use of this dye for lymphography. However, novel techniques have replaced lymphography as a tool to detect sentinel lymph nodes (1, 4). Thus, since the beginning of the nineties, we are confronted more and more with allergic reactions due to the use of patent blue during the sentinel lymph node procedure (1–5). We here report a case of anaphylaxis to patent blue.

A 62-year-old woman was referred to our dermatology department after she had developed an anaphylactic reaction during lymph node biopsy 3 years ago. In May 2001, she underwent a sentinel node biopsy and a lumpectomy for staging breast cancer of her left breast. The operation was without complications. The histopathology showed a high-graded adenoid cystic carcinoma of 2.2 cm, which was not radically excised. The next step was ablation of the left breast with partial axillary node clearance. During this operation she developed, 15 min after injection of 5 ml of patent blue V, generalized erythema, angioedema and hypotension. Over the following minutes, she was treated with intravenous hydrocortisone, adrenaline and clemastine and she recovered within 30 min. There was no need to break off the surgery.

The patient had no history of previous adverse drug reactions and she was not atopic.

Skin prick tests with patent blue, latex and the medication used during anaesthetic induction, pentothal and atracurium, showed a 3+ reaction to patent blue. She was probably sensitized for patent blue during the first sentinel node biopsy. Skin prick tests with patent blue in 10 healthy volunteers were negative.

Allergic reactions during surgery are quite common. Around 70% of these are caused by muscle relaxants, 10% by latex, and are then followed by antibiotics. Patent blue is an aniline dye and allergic reactions are rare (2). It causes hypersensitivity reactions in 0.8–2.8% (2–5). Possible reactions include urticaria,

oedema, bronchospasm and anaphylaxis (1–4). The mechanism underlying the allergic reaction to patent blue is unclear (1, 3–5). So far specific immunoglobulin E (IgE) to patent blue seems to be never determined. Both direct mast cell activation and cross-linking of specific IgE antibodies are possible causative factors. A recent publication of Wöhrle et al. made an IgE-mediated mechanism with specific IgE to patent blue more likely. Patent blue is widely used as industrial dye in textiles, including carpets, cosmetics, paper, medicinal products and agricultural industries. It has been used as food colourant (E131) until 1974 (1–5). There is a strong cross-reaction between patent blue and isosulfan blue, the clinical alternative. However, methylene blue seems to be a safe alternative (2). With the growing use of sentinel lymph node biopsies, the incidence of adverse events, including anaphylaxis, will also increase.

References

1. Quilquini A, Hogendijk S, Hauser C. Anaphylaxis to patent blue. *Dermatology* 1998; 197: 400.
2. van der Horst J C, de Bock M J J M, Klinkenbijl J H. Anafylactische shock na injectie van patentblauw voor schildklierwacht onderzoek. *Ned Tijdschr Geneesk* 2001; 145: 2086–2088.
3. Wöhrle S, Focke M, Hinterhuber G et al. Near-fatal anaphylaxis to patent blue V. *Br J Dermatol* 2004; 150: 1028–1054.
4. Forscher K, Kleine-Tebbe A, Zuberbier T, Worm M. Type I sensitization towards patent blue as a cause of anaphylaxis. *Allergy* 2003; 58: 457–458.
5. Mullan M H, Deacock S J, Quiney N F, Kissin M W. Anaphylaxis to patent blue during sentinel node biopsy for breast cancer. *Eur J Surg Oncol* 2001; 27: 218–219.

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Late patch test reaction to textile dyes

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Key words: allergic contact dermatitis; late reactions; patch test; textile.

A 54-year-old woman presented with a 14-month history of recurrent events of acute dermatitis. The rash had a typical distribution and appearance of textile dermatitis. Patch testing for European standard and textile series revealed no reaction at D2 and D4. She returned to the clinic after 2 weeks with a +2 reaction on her back at an unknown site of the patch test area, which had appeared a couple of days before her visit. She was re-tested to these series, with continuous marking. At D10, a +2 reaction to Basic red 46 was noticed. At D17, +1 reactions appeared to Reactive black 5, Reactive violet 5, Reactive red 244, Reactive red 238, Reactive orange 107 and Reactive blue 238.

Discussion

This case report concerns a woman with textile dermatitis with a late reaction to textile dyes. As far as we know, this is the first description of a true late reaction to textile dyes. Although Lazarov (1) described 2 cases of D7 reaction to textile dyes, it was attributed to previous sensitization. In this case, late reaction should not automatically be considered as a sign of active sensitization (2, 3). On 2 separate patch tests, she reacted in a same pattern after at least 10 days. If the first set had caused active sensitization, she should react within the usual time frame at the second time. Although cross-sensitivity between textile dyes has already been described (4), it is probable that the multiple D17 +1 reactions are manifestations of an active sensitization to Basic red 46. At an 18-month follow-up of restraining red clothing, the woman is asymptomatic.

References

1. Lazarov A. Textile dermatitis in patients with contact sensitization in Israel: a 4-year prospective study. *J Eur Acad Dermatol Venereol* 2004; 18: 531–537.
2. Isaakson M, Bruze M. Late patch test reactions to budesonide need not be a sign of sensitization induced by the test procedure. *Am J Contact Dermat* 2003; 14: 154–156.
3. Fowler J F Jr. Late patch test reaction to acrylates in a dental worker. *Am J Contact Dermat* 1999; 10: 224–225.
4. Uter W, Geier J, Lessmann H, Hausen B M. Contact allergy to Disperse Blue 106 and Disperse Blue 124 in German and Austrian patients, 1995 to 1999. *Contact Dermatitis* 2001; 44: 173–177.

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Contact dermatitis due to Dieffenbachia

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Dieffenbachia, a member of the Araceae family, is native to tropical America and the West Indies. The plants are usually tall, erect and possess large leaves that in some species are variegated with ivory markings (1) (Fig. 1).

Case Report

A 26-year-old woman, with rhinoconjunctivitis during April, May and June, was working as housekeeper. She was referred to our department because she had been suffering for the last 3 years episodes of pruritus, erythema and swelling affecting the fingers and the back of her hands. She related those symptoms to the cleaning of an indoor plant (Dieffenbachia). She carried out this task every 2 or 3 days with some water and without gloves. She did not use any other cleaning product. Dermatitis subsided in about 1 week with topical corticosteroids. The patient did not refer symptoms with the manipulation of any other indoor or outdoor plants.



Fig. 1. Dieffenbachia plant.

Skin prick tests with a series of commercially available inhalant allergens (grass, weeds and tree pollens, house dust mites, cat and dog dander and molds and latex) were positive with grass pollen and olive tree.

The patient was patch tested with the GEIDC standard series and with fresh stem and leaf from *Dieffenbachia*. Patch tests were applied to the skin of her upper back. Patch tests' reading was made at 30 min, 2 and 4 days according to the Contact Dermatitis Research Group. Immediate reaction (at 30-min reading) was not elicited. Patch tests with stem (+ + +) and leaf (+ + +) were positive at 2 and 4 days (Fig. 2). Patch test with GEIDC standard series was negative. The results of patch tests with the previously described materials from the plant were negative in five healthy controls were all negative. A skin biopsy from the positive patch test with the stem of the implied plant showed perivascular chronic inflammation, with abundant lymphocytes.

Discussion

Dieffenbachia is a widespread tropical decorative house plant belonging to the family of Araceae (2).

Few cases of allergic contact dermatitis (3) and some cases of irritant contact dermatitis (2, 4), stomatitis (5, 6) and corneal lesions (5, 7) due to this plant are reported in the literature.

There are several reports concerning the toxicity of *Dieffenbachia* (1, 8, 9). Barnes (8) described how the juice of the plants was used experimentally to induce sterility. Gardner

(1) reported that the contact of the sap from a *Dieffenbachia* with the oral mucosa produces a painful oedema, vesicles and ulceration. The oedema may involve the oesophagus and glottis. So, that toxicity may be very dangerous for children. There are different theories about the nature of localized toxicity of *Dieffenbachia* (9–11).

Corazza (2) described a woman with hand dermatitis that appeared 6 hr after pulling out some leaves from *Dieffenbachia*. Patch tests with a 5% ethanolic extract of the plant were negative. Therefore, they concluded that the patient had an irritant contact dermatitis.

In our case, we report a contact dermatitis due to *Dieffenbachia* that has been confirmed with a positive patch test with both the stem and the leaf from the plant. As the results of patch tests with the previously described materials were negative in five controls, an irritant mechanism can be reasonably ruled out.

References

1. Gardner D G. Injury to the oral mucous membranes caused by the common houseplant, *Dieffenbachia*. *Oral Surg Oral Med Oral Pathol* 1994; 78: 631–633.
2. Corazza M, Romani I, Poli F, Virgili A. Irritant contact dermatitis due to *Dieffenbachia*. *J Eur Acad Dermatol Venereol* 1998; 10: 87–89.
3. Van Ketel, Bruynzeel D P. Contact dermatitis to plants in Amsterdam. *Dermatol Allergol Prof* 1987; 2: 132–144.
4. Pereira F. Hand dermatitis in florists. *Contact Dermatitis* 1996; 34: 144–145.
5. Jaspersen-Schib R, Theus L, Guirguis-Oeschger M, Gossweiler B, Abt P J. Serious plant poisonings in Switzerland 1966–94. Case analysis from the Swiss Toxicology Information Center. *Schweiz Med Wochenschr* 1996; 126: 1085–1098.
6. Evans C R. Oral ulceration after contact with the houseplant *Dieffenbachia*. *Br Dent J* 1987; 162: 467–468.
7. Lim K H. External eye allergy from sap of *Dieffenbachia picta*. *Singapore Med J* 1977; 18: 176–177.
8. Barnes B A, Fox L E. Poisoning with *Dieffenbachia*. *J Hist Med Allied Sci* 1955; 10: 173–181.
9. Arditti J, Rodriguez E. *Dieffenbachia*, uses, abuses and toxic constituents: a review. *J Ethnopharmacol* 1982; 5: 293–302.
10. Kuballa B, Lugnier A A, Anton R. Study of *Dieffenbachia*-induced edema in mouse and rat hindpaw: respective role of oxalate needles and trypsin-like protease. *Toxicol Appl Pharmacol* 1981; 58: 444–451.
11. Rauber A. Observations on the idiosyncrasms of *Dieffenbachia*. *J Toxicol Clin Toxicol* 1985; 23: 79–90.

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Occupational contact urticaria from walnut associated with hand eczema

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Key words: contact urticaria; occupational; walnut.

Food handlers may develop allergic urticarial reactions to foods, leading to protein contact dermatitis (1) in addition to irritant and allergic contact dermatitis.



Fig. 2. Positive patch tests with stem and leaf of *Dieffenbachia*.

Case Report

A 35-year-old man presented with a 14-month history of dermatitis on the dorsal aspect of the hands and wrists. He worked as a baker making walnut cakes. Handling the raw cake mixture and grease contaminated with walnut caused immediate itching of the hands and wrists. His dermatitis improved during holidays and over weekends. He had noticed symptoms of dry mouth and sore throat on consuming walnuts or food containing walnuts for many years prior to the development of dermatitis. He had therefore avoided consuming walnuts. Prick testing was carried out to walnut, egg, flour, control, control (normal saline) and histamine. Positive wheal and flare reactions occurred with walnut and histamine whilst all other prick tests were negative.

Discussion

Walnut trees are deciduous with many uses and hence are widely cultivated. Walnut timber is used in furniture and for veneering and its oil and juice are used as dyes. The fruit of the tree is a nut whose oil may be consumed as food. The tree and its fruit can be responsible for a variety of adverse dermatological and systemic reactions. Food allergy following ingestion of walnuts is well known and can be life threatening. Jug r^1 (2S albumin) and Jug r^2 (vicillin-like) are the important allergens isolated from English walnut kernel (*Jugulans regia*) (2). Juglone, the active ingredient from the green husk of walnuts is a strong irritant (3). Cases of allergic contact dermatitis to walnut wood have been reported (4, 5). On patch testing, 16 patients with dermatoses caused by wood dusts, 2 showed positive allergic reactions to walnut (6).

Contact urticarial reactions may be immunological, non-immunological or caused by unknown mechanisms (7). Contact urticaria may be caused by many foods such as potatoes, seafood, dairy products, flour, spices and meats (1). In a large study of bakers, confectioners and cooks, 36% of bakers had an occupationally relevant type 1 allergic reaction (8). Contact urticaria to walnuts has not been described as far as we are aware. It is known that people with immediate urticarial reactions may subsequently develop hand eczema

and this has been termed protein contact dermatitis (1, 9). We believe our patient developed contact urticaria from walnut with secondary hand eczema. The case reinforces the importance of prick testing food handlers with hand eczema.

References

1. Hjorth N, Roed-Peterson J. Occupational protein contact dermatitis in food handlers. *Contact Dermatitis* 1976; 28–42.
2. Identification and cloning of a complementary DNA encoding a vicillin-like protein, jug r^2 , from English walnut kernel (*Jugulans regia*), a major food allergen. *J Allergy Clin Immunol* 1999; 104: 1311–1320.
3. Mitchell J, Rook A. *Botanical Dermatology. Plants and Plant Products Injurious to the Skin*. Vancouver: Greengrass, 1979: 357–359.
4. Schleicher H. Über phyto gene allergische kontaktekzeme. *Dermatologische Monatsschrift* 1974; 160: 433.
5. Woods B, Calnan C D. Toxic woods. *Br J Dermatol Suppl* 1976; 13: 94.
6. Estlander T, Jolanki R, Alanko K, Kanerva L. Occupational allergic contact dermatitis caused by wood dusts. *Contact Dermatitis* 2001; 44: 213–217.
7. Maibach H I, Johnson H L. Contact urticaria syndrome. *Arch Dermatol* 1975; 111: 726–730.
8. Tacke J, Schmidt M, Fartasch M, Diepgen T L. Occupational contact dermatitis in bakers, confectioners and cooks. *Contact Dermatitis* 1995; 33: 112–117.
9. Jovanoic M, Oliwiecki S, Beck M H. Occupational contact urticaria from beef associated with hand eczema. *Contact Dermatitis* 1992; 27: 188–189.

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Contact dermatitis due to clarifying cream

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A 45-year-old woman developed a severe eczematous reaction localized on the application site after using a clarifying cream. Patch testing showed positively to vitamin K1.

Key words: clarifying cream; phytomenadione; vitamin K1.

Vitamin K1 (phytomenadione) is a liposoluble vitamin used to treat certain coagulation disorders. Several adverse cutaneous reactions have been described in relation to this vitamin, but they are not always diagnosed due to their morphological variety and low incidence.

We present a case of contact dermatitis caused by a cream containing vitamin K1.

Case Report

A 45-year-old woman applied a cream prescribed by her dermatologist for rosacea. After a few days' use, she presented an eczematous reaction accompanied by an intense oedema completely covering the application zone. On her own account, the patient tested the application repeatedly on the forearm, confirming reactivity. She then came to our department (Fig. 1).

We performed patch tests with the European standard series (True-test[®], Pharmacia Upjohn Hillerod AS, Denmark), and with Trolab's (Trolab[®] Hermal, Reinbek, Germany) cosmetic series, vehicles series and preservatives series. The methodology follows the international rules with 48-hr occlusion with Mefix[®] tape. All tests were negative.

After contacting the manufacturers, we applied the ingredients of the cream (vitamin A palmitate, propyleneglycol, glycerine, alpha bisabolol and vitamin K) and found positivity only for the vitamin K1 at 1% and 10% in petrolatum. Tests with 1–10% vitamin K1 in a control group were negative.

Conclusion

Vitamin K1 is the natural form of vitamin K. It is soluble in ethanol, vegetable oils, ether and benzene but not in water. There are 3 types of cutaneous reactions to vitamin K1: an eczematous form appearing at parenteral injection sites 1 week or 2 weeks later, a local morphea-like type and, very rarely, a diffuse



Fig. 1. Eczematous reaction accompanied by an intense oedema completely covering the application zone.

patch form (1). There are also various types of analogous water-soluble vitamin K, such as vitamin K3. Several cases of occupational contact dermatitis due to Vitamin K3 have been reported (2, 3).

The present case differs from previous reports in that the application was topical, and the agent was a cosmetic cream indicated for facial rosacea.

The cosmetic use of topical vitamin K is infrequent and this may account for the rarity of cases of sensitivity reported to date.

Only 1 case of allergic contact dermatitis due to vitamin K1 for topical cosmetic use has previously been reported for topical application in the treatment of periorbital hyperpigmentation with another kind of a mixture containing vitamin K1 and retinol (4).

References

1. Lemmlich G, Green M, Phelps R et al. Cutaneous reactions to vitamin K1 injections. *J Am Acad Dermatol* 1993; 28: 345–347.
2. Romaguera C, Grimalt F, Conde-Salazar L. Occupational dermatitis from vitamin K3 sodium bisulphite. *Contact Dermatitis* 1980; 6: 355–356.
3. Camarasa JG, Barnadas M. Occupational dermatosis by vitamin K3 sodium bisulphite. *Contact Dermatitis* 1982; 8: 268.
4. Veneziano L, Silvani S, Voudouris S, Tosti A. Contact dermatitis due

to topical cosmetic use of vitamin K. *Contact Dermatitis* 2005; 52: 113–114.

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Allergic contact dermatitis caused by colistin sulfate & bacitracin

Contact Dermatitis 2005; 53: 175–176

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Key words: bacitracin; colistin sulfate; contact dermatitis

Case Report

A 27-year-old woman had both ears pierced followed by prophylactic

application of D'ormycin® ointment (colistin sulfate 5×10^4 U, bacitracin 250 U, liquid paraffin and white pet. to 1 g) for 1 week. 3 years later, both ears were pierced again followed by application of D'ormycin® ointment. 1 day after the second piercing, she developed pruritic exudative erythema on both auricles. The skin eruption remitted by application of steroid ointment. She was patch tested with D'ormycin® ointment and its ingredients, using Finn Chambers (Epitest Ltd Oy, Tuusula, Finland) on Scanpor tape (Alpharma AS, Norway). Readings were made at 2 days, 3 days and 7 days according to ICDRG recommendations. She showed positive reaction to D'ormycin® ointment, colistin sulfate and bacitracin (Table 1). We diagnosed the case as allergic contact dermatitis caused by colistin sulfate and bacitracin.

Discussion

Bacitracin and colistin are polypeptide antibiotics and have antibacterial actions against gram-negative bacilli (1). Bacitracin was reported to be a weak sensitizer in an animal study (2). However, Zaki et al. (3) reported that among 85 patients with either long-standing venous ulceration or eczema complication on leg ulcers, who underwent patch testing, 19 patients showed positive reaction to bacitracin. They concluded that chronic usage of topical bacitracin on leg ulcers carried a significant risk of contact sensitization. In our case, the patient neither had leg ulcers nor used bacitracin ointment on a long-term basis but developed allergic contact dermatitis caused by bacitracin.

While contact dermatitis from colistin is rarely reported, contact dermatitis caused by colistin sodium methane sulfonate (1, 4, 5) and colistin sulfate (6) in eye drops were reported previously. Inoue et al. (7) reported contact dermatitis from only colistin sulfate in D'ormycin® ointment. In our case, positive reactions for both colistin sulfate and bacitracin were noted. Because both colistin and bacitracin are obtained from *Bacillus subtilis*, bacitracin may have possible cross-reactivity with colistin (8). Because D'ormycin® ointment contains both colistin sulfate and bacitracin, we were unable to conclude whether the double-positive reactions were a

Table 1. Results of patch test

	Percentage/vehicle	D2	D3	D7
D'ormycin® ointment	As is	++	++	+
Bacitracin	5% pet.	++	++	+
Bacitracin	0.5% pet.	++	++	+
Bacitracin	0.05% pet.	—	—	—
Colistin sulfate	5% pet.	—	+	+
Colistin sulfate	0.5% pet.	—	+	+
Colistin sulfate	0.05% pet.	—	—	—
Liquid paraffin	As is	—	—	—
Pet.	As is	—	—	—

cross-reaction or coreaction. The cause of these double-positive reactions is unknown, but, to our knowledge, this is the first report of allergic contact dermatitis caused by both colistin sulfate and bacitracin.

References

1. Akai Y, Masuda R, Akaeda T. A case of allergic contact dermatitis from colistin. *Skin Research* 1992; 34: 176–180.
2. Goh C L. Contact sensitivity to topical antimicrobials (II). Sensitizing potentials of some topical antimicrobials. *Contact Dermatitis* 1989; 21: 166–171.
3. Zaki I, Shall L, Dalziel K L. Bacitracin: a significant sensitizer in leg ulcer patients? *Contact Dermatitis* 1994; 31: 92–94.
4. Kubo Y, Tanaka M, Nonaka S, Yoshida H. A case of allergic contact dermatitis from Colimy C® eye drop. *Skin Research* 1989; 31: 105–110.
5. Sasaki S, Mitsunashi Y, Kondo S. Contact dermatitis due to sodium colistimethate. *J Dermatol* 1998; 25: 415–417.
6. Lund M H, Plains M. Colistin sulfate ophthalmic in the treatment of ocular infections. *Arch Ophthalmol* 1969; 81: 4–10.
7. Inoue A, Shoji A. Allergic contact dermatitis from colistin. *Contact Dermatitis* 1995; 33: 200.
8. Rietschel R L, Fowler J F Jr. *Fisher's Contact Dermatitis*, 5th edn. Philadelphia: Lippincott Williams & Wilkins, 2001: 172–173.

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Occupational contact dermatitis from potassium sorbate in milk transformation plant

Contact Dermatitis 2005; 53: 176–177

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Key words: CAS registry number [110-44-1]; CAS registry number [590-00-1]; CAS registry number [24634-61-5]; cheese; farmer; occupational dermatitis; patch testing; preservative.

We report a case of occupational severe contact dermatitis due to potassium sorbate in a farmer working at a milk transformation plant. Dermatitis progressively worsened, because of persistent contacts, airborne dissemination of the chemical and clothing contamination. Weak positive patch test to sorbic acid at D7 was not confirmed by a ROAT, and dermatitis totally cleared after eviction of contact with potassium sorbate. In this patient, irritant mechanism seems to be in cause. Sorbic acid and sorbates frequently induce non-specific erythema and oedema, and are known as weak and rare delayed-type allergens, mainly found in food, pharmaceuticals and cosmetics. This report seems to be the first of occupational dermatitis due to sorbic acid salt.

Case Report

A 35-year-old man, without past medical history, was referred with a severe dermatitis that had onset 3 months ago. Lesions initially involved his hands and then had spread over his upper limbs, décolleté and face, abdomen and thighs. They consisted in excoriated and crusted lichenifications of his hands and fingers, with diffuse dermatitis of face, trunk and thighs.

The patient worked as a farmer for many years, essentially at a milk transformation plant to prepare and pasteurize yoghurt, cream, cheese, and a special dressing for a particular Alsatian tart called flammekuche. For such a preparation, he used cream, salt, pepper and several additives such as rennet, calcium chloride and potassium sorbate. The last chemical was available in a raw powdery form, and was then diluted to be used at a 0.2% concentration in the final product. For manipulation of potassium sorbate, the patient usually wore vinyl gloves but his face and upper limbs were not covered by clothing, as clothing and pockets were contaminated by the powder.

Large amounts of betamethasone dipropionate cream once a day permitted total recovery within 3 weeks. Patch testing was then performed with the EECDRG and revised ICDRG series, additional allergens including sorbic acid 2% pet. (Chemotechnique, Malmö, Sweden). Readings at D2/D4/D7 showed positive reactions to *Myroxylon pereirae* +/+ (without identified relevance) and to sorbic acid -/-/+. A ROAT performed with sorbic acid 2% pet. twice daily on the forearm was negative after 7 days.

The patient was invited to avoid any direct contact with potassium sorbate, and to use a granulated form, in order to prevent airborne dermatitis. Eight months later, he is free of symptoms.

Discussion

Sorbic acid also called 2,4-hexadienoic acid, found in some berries, was primarily extracted from berries of mountain ash (*Sorbus aucuparia* L., Rosaceae family), within it is found as the lactone parasorbic acid. Sorbic acid and its salts (Fig. 1) such as potassium, calcium and

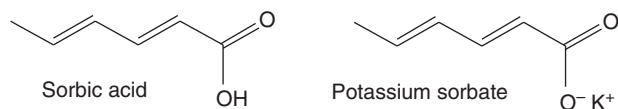


Fig. 1. Structures of sorbic acid and potassium sorbate.

sodium inhibit moulds and yeasts, and are used as preservatives to avoid further fermentation in tobacco and foods such as wines, butter, cheese, yoghurts or dried fruits ... (1, 2). In cosmetics (3) and pharmaceuticals (4), they are used mainly in fatty acids and polyoxyethylene-based products (5). Those chemicals also improve milling characteristics in cold rubber, and may be used in copolymerization, as intermediate for plasticizers and lubricants, in adhesives, glues, inks, paints, varnishes, tanning agents and metalworking fluids (1).

Sorbic acid has been described for years as an inducer of transient non-specific erythema, and non-immunological dose-related contact urticaria (6) or subjective feelings such as stinging sensation (7) or burning mouth. Allergic contact dermatitis is rare, more frequent in patients with leg ulcer (8) and after repeated use of topicals (9), and food-induced systemic contact dermatitis has been reported (10).

This report seems to be the first of occupational allergic contact dermatitis from potassium sorbate/sorbic acid. The delayed D7 and weakly positive patch test reaction, not confirmed by the ROAT, despite severity of the lesions, strongly suggests the irritant role of powdery potassium sorbate in the dermatitis.

References

- Budavari S, O'Neil M J, Smith A, Heckelman P E, Kinneary J F (eds). *The Merck Index*, 12th edition. Whitehouse Station, NJ, USA: Merck & Co., Inc., 2001.
- Le Coz C J. Cigarette and cigar makers and tobacco workers. In: *Handbook of Occupational Dermatology*, Kanerva L, Elsner P, Wahlberg J E, Maibach H I (eds): Berlin, Springer Verlag, 2000: 887–889.
- Wenninger J A, Canterbery R C, McEwen Jr G N (eds). *International Cosmetic Ingredient Dictionary and Handbook*, 8th edition. Washington DC: The Cosmetic, Toiletry, and Fragrance Association, 2000.
- Vidal 2005, 81ème édition. Paris: OVP-Editions du Vidal, 2005.

- Saihan E M, Harman R R M. Contact sensitivity to sorbic acid in 'Unguentum Merck'. *Br J Dermatol* 1978; 99: 583–584.
- Clemmensen O, Hjorth N. Perioral contact urticaria from sorbic acid and benzoic acid in a salad dressing. *Contact Dermatitis* 1982; 8: 1–6.
- Fisher A A. Cutaneous reactions to sorbic acid and potassium sorbate. *Cutis* 1980; 25: 350,352,423.
- Le Coz C J, Scrivener Y, Santinelli F, Heid E. Sensibilisation de contact au cours des ulcères de jambe. *Ann Dermatol Venerol* 1998; 125: 694–699.
- Ramsing D W, Menné T. Contact sensitivity to sorbic acid. *Contact Dermatitis* 1993; 28: 124–125.
- Raison-Peyron N, Meynadier J M, Meynadier J. Sorbic acid: an unusual cause of systemic contact dermatitis in an infant. *Contact Dermatitis* 2000; 43: 247–248.

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Changes in the pattern of sensitization to nickel in different age groups in Poland

Contact Dermatitis 2005; 53: 177

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Key words: age groups; contact dermatitis; nickel.

Since the nickel exposure regulation was introduced in Denmark, the percentage of the nickel-sensitive patients has decreased in the youngest age groups. During the same time, the percentage of the nickel-sensitive patients in the older age groups has increased or remained at the same level (1). We observed a similar trend in Poland in 2004 (Table 1). It is possible that the smaller percentage of the young people who have recently become sensitive to the nickel is a result of the increasingly closer economic ties of Poland with the countries of Western Europe. It might also be caused by the increasing awareness among young people about a possibility of being sensitive to nickel.

References

- Johansen J D, Menne T, Chistophersen T et al. Changes in the pattern of sensitization to common contact allergens in Denmark between 1985–86 and 1997–98 with a special view to the effect of preventive strategies. *Br J Dermatol* 2000; 142: 490–495.

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Table 1. Age distribution in nickel-sensitive patients in some years of the last decade

Year	Total number of tested subjects	Number of Ni + patients, n (%)	Ni + in age groups, n (%)	
			0–20	>20
1995	1712	239 (13.96)	38* (15.90)	201* (84.10)
1997	1690	219 (12.96)	35* (15.98)	184* (84.02)
1999	1418	223 (15.73)	37* (16.59)	186* (83.41)
2003	1504	197 (13.10)	24 (12.18)	173 (87.82)
2004	1664	281 (16.89)	28 (9.96)	253 (90.04)

*Statistically vital differences $P < 0.05$ (χ^2 test) in comparison with the data from 2004.

Occupational contact urticaria caused by seafood handling*

Contact Dermatitis 2005; 53: 178

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Key words: cook; occupational contact urticaria; seafood; shellfish.

Chefs and seafood handlers have a high incidence of contact dermatitis. In the seafood industry, occupational contact dermatitis is about 3–11% (1). Contact urticaria is associated with direct contact to proteins. We report two cases of occupational contact urticaria caused by seafood handling.

Case Reports

Case 1

A 25-year-old man with no personal history of atopy reported contact urticaria after handling raw fish. The patient had been a cook for the past 7 years and had never referred previous symptoms. He started developing urticaria after handling red mullet, haddock and sea bass. 2 months later, he referred oral allergy syndrome after eating cooked red mullet and sea bass, with no problem related with other fishes or shellfish intake.

We performed skin prick-prick tests with the fishes he usually handled – scallop, prawn, angler fish, haddock, red mullet, codfish, sea bream, octopus and baby squid – with positive results to angler fish, haddock, red

mullet, sea bream and codfish. We also performed rub test (the skin of the flexor surface of the patient's forearms was rubbed with these fishes for 20 seconds, readings were made

20 min later), with cutaneous reaction after red mullet, sea bream and haddock. Specific IgE determination to haddock was 0.62 kU/l.

Case 2

A 27-year-old woman with no personal history of atopy reported contact urticaria after handling raw shellfish. The patient had been a cook for the past 10 years. 8 years ago, she started developing urticaria after handling prawn, shrimp, crab and spider crab. 1 year later, she referred oral allergy syndrome and angioedema after eating cooked prawn and shrimp, with no problem related with other shellfish or common fishes intake.

We performed skin prick test with commercial extracts to shrimp, clam, mussel, squid and oyster, with positive results to clam, shrimp, mussel and oyster. We also performed prick-prick tests to shrimp and prawn with positive results to both. Rub test to these shellfishes were positive as well (the skin of the flexor surface of the patient's forearms was rubbed with shrimp and prawn for 20 seconds, readings were made 20 min later). No positive specific IgE determination to any shellfish was obtained.

Discussion

The development of immediate contact reactions usually requires repeated skin contact although earlier sensitization through ingestion can also result in protein contact dermatitis (2, 3). Previous cases of contact urticaria after handling seafood have been already reported (4). Just a few are related to occupational exposure, either to fish (5, 6) or to shellfish (7, 8).

In these two cases, the clinical symptomatology, the positivity of immediate skin tests (prick, prick-prick and rub tests) and the demonstration of specific IgE antibodies by CAP assay (Pharmacia[®], Uppsala, Sweden) in one of them suggest a type I hypersensitivity mechanism [although we do not find specific IgE antibodies to any shellfish in case 2, skin prick tests have shown higher sensitivity than specific IgE

determinations in diagnosing food allergy in previous studies (9, 10)].

References

1. Jeebhay M F, Robins T G, Lehrer S B, Lopata A L. Occupational seafood allergy: a review. *Occup Environ Med* 2001; 58: 553–562.
2. Dominguez C, Ojeda I, Crespo J F et al. Allergic reactions following skin contact with fish. *Allergy Asthma Proc* 1996; 17: 83–87.
3. Diaz Sánchez C, Laguna Martínez J, Iglesias Cadarso A et al. Protein contact dermatitis associated with food allergy to fish. *Contact Dermatitis* 1994; 31: 55–57.
4. Porcel S, León F, Cumplido J, Cuevas M, Guimaraens D, Conde-Salazar L. Contact urticaria caused by heat-sensitive raw fish allergens. *Contact Dermatitis* 2001; 45: 139–142.
5. Göransson K. Contact urticaria to fish. *Contact Dermatitis* 1981; 7: 282–283.
6. Múgica M U, Añibarro B, Seoane F J, Lombardero M. Contact urticaria by angler fish. *Allergy* 2003; 58: 682–683.
7. Nethercott J R, Holness D L. Occupational dermatitis in food handlers and bakers. *J Am Acad Dermatol* 1989; 21 (3 Pt 1): 485–490.
8. Valsecchi R, Pansera B, Reseghetti A, Leghissa P, Cortinovis R, Cologni L. Contact urticaria from Loligo Japonica. *Contact Dermatitis* 1996; 35: 367–368.
9. Sharnan J, Kumar L, Singh S. Comparison of results of skin prick tests, enzyme-linked immunosorbent assays and food challenges in children with respiratory allergy. *J Trop Pediatr* 2001; 47: 367–368.
10. Hansen T K, Bindeslev-Jensen C. Codfish allergy in adults. *Allergy* 1992; 47: 610–617.

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Allergic contact dermatitis due to rosemary

Contact Dermatitis 2005; 53: 179–180

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Key words: allergic contact dermatitis; carnosol; plants; rosemary; *Rosmarinus officinalis*.

Rosmarinus officinalis (rosemary) is an evergreen shrub of the Lamiaceae family, originally from the Mediterranean region, where it grows in dry, sandy or rocky soils in a climate characterized by warm summers and mild, dry winters.

Rosemary is considered the herb of remembrance, friendship and love and has been used since ancient Greece and Rome as a medicinal and aromatic herb for thousands of years (1).

Its leaves and twigs are widely used as infusions, oils or tinctures due to its carminative, antispasmodic, antidepressive, rubefacient, antimicrobial, emmenagogue, stimulant, cephalic, tonic, astringent, diaphoretic, nervine and aromatic properties.

The most important constituents of rosemary are carnosol, carnosic acid, caffeic acid and its derivatives such as rosmarinic acid. Carnosol is a natural phytopolyphenol with antioxidant and anticarcinogen functions (2).

Case Report

A 48-year-old woman was referred to the Department of Dermatology of our hospital to be evaluated due to a flare of cutaneous lesions located on the face and hands. Her past medical history included allergic rhinitis and asthmatic bronchitis.

She developed oedema and eczematous lesions on her hands, predominantly on palms, eyelids and face a few hours after taking a walk where she touched several odorous plants. Patch and photopatch tests were performed. Patch tests were performed with the European standard series (True-testTM,

Pharmacia & Upjohn, Hillerød AS, Denmark), photopatch tests were realized with standard photoallergen series (Trolab[®] Hermal, Reinbek, Germany), and patch and photopatch with perfume series (Trolab[®] Hermal) were negative. The results observed after patch and photopatch testing to rosemary extract at 1% was positive (++++) and so was the patch to rosemary leaf (more intense with photopatch ++/++++) (Fig. 1). In view of these findings, we decided to contact with Professor B.M. Hausen (Dermatology Center, Buxtehude, Germany), who provided us with hydrophilic and lipophilic rosemary extracts 10%, which were positive (++++) for patch and photopatch tests. Camphor extract 2% and alpha pinene 10% in diethylphthalate resulted negative. We also obtained carnosol, a constituent of the rosemary plant, and patch tested it at a 0.1% concentration in alcohol solution, which was positive (++) without sun exposure. Patch testing to oregano and sage extract was negative. We performed 5 controls, with negative results in all of them.

Conclusion

Klarman (3) in 1958 and Fousseureau & Benezra in 1970 (4) have documented rosemary as a cause of contact dermatitis.

Despite the wide use of this plant, sensitization is very rare. Few skin reactions due to rosemary have been reported in literature. We did a research in Pubmed database and found only 4 articles of contact dermatitis related to rosemary. The first documented case in Spain was described in 1997 by Fernández et al. (5) and dealt with rosemary for therapeutic use. Guin (6) described the unique case of chronic contact cheilitis, in a man who regularly ate food seasoned with rosemary. Hjorth et al. (7) reported an occupational case, a man working in food processing, who developed contact dermatitis on exposed areas after he started working with an extract of the leaves of rosemary which contained carnosol.

Armisen et al. (8) reported a woman who developed photoaggravated contact dermatitis on exposed areas after picking rosemary on



Fig. 1. Open patch test with rosemary as is and occluded patch test in her arm with an extract 1% pet. With UVA the patch was stronger.

sunny days and a cross-reaction with *Thymus vulgaris* that belongs to the same botanical family.

We present another case of non-occupational allergic contact dermatitis due to carnosol, a natural compound of rosemary. Cross-reactions with other plants of the Labiatae family (*Salvia officinalis* and *Origanum vulgare*) were ruled out. We should consider contact dermatitis from rosemary or its compounds in patients who use this plant because of its medicinal, aromatic or conserving properties.

References

1. Katerinopoulos H E, Pagona G, Afratis A, Stratigakis N, Roditakis N. Composition and insect attracting activity of the essential oil of *Rosmarinus officinalis*. *J Chem Ecol* 2005; 31: 111–122.
2. Lo A H, Liang Y C, Lin-Shiau S Y, Lin J K. Carnosol, an antioxidant in rosemary, suppresses inducible nitric oxide synthase through down-regulating nuclear factor kappaB in mouse macrophages. *Carcinogenesis* 2002; 23: 983–991.
3. Klarman E G. Perfume dermatitis. *Ann Allergy* 1958; 16: 425–434.
4. Foussereau J, Benezra C. *Les eczemas allergiques professionnels*. Paris: Masson & Cie, 1970: 170, 391.
5. Fernández L, Duque S, Sanchez I, Quinones D, Rodriguez F, Garcia-Abujeta J L. Allergic contact dermatitis from rosemary (*Rosmarinus officinalis* L.). *Contact Dermatitis* 1997; 37: 248–249.
6. Guin J D. Rosemary cheilitis: one to remember. *Contact Dermatitis* 2001; 45: 63.
7. Hjørther A B, Christophersen C, Hausen B M, Menne T. Occupational allergic contact dermatitis from carnosol, a naturally-occurring compound present in rosemary. *Contact Dermatitis* 1997; 37: 99–100.
8. Armisen M, Rodriguez V, Vidal C. Photoaggravated allergic contact dermatitis due to *Rosmarinus officinalis* cross-reactive with *Thymus vulgaris*. *Contact Dermatitis* 2003; 48: 52–53.

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Walking difficulties due to an allergic reaction to a temporary tattoo

Contact Dermatitis 2005; 53: 180–181

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Key words: contact dermatitis; cross-reactions; henna tattoo; *p*-phenylenediamine; tattoo; temporary tattoos.

Contact allergic reactions to temporary henna tattoos are, in general, not due to henna itself, but due to the additives which may be *p*-phenylenediamine, *p*-toluenediamine and various essential oils. We present this case because of the severity of the symptoms.

Case Report

Every year on vacation in Morocco, a 51-year-old woman had had a henna tattoo on both feet. A year ago, she had decided to have a tattoo with a darker colour than usual. Several days later, her feet started itching, but no other skin reactions occurred and she was able to ignore it. This year, a few days after the application of a second dark henna tattoo on both her feet, severe oedema and blister formation developed exactly following the tattoo pattern (Fig. 1). When she consulted us, she could hardly walk. Treatment

with oral steroids was initiated and remission obtained in 3 weeks. Post-inflammatory hyperpigmentation was still visible after 3 months.

Patch testing showed positive reactions (severe blistering on several test sites) to *p*-phenylenediamine, tested 0.01% pet. only (1), several azo dyes (disperse yellow 3, disperse orange 1 en 3, disperse red 1, disperse blue 106, 124 and 135), hair dyes (*p*-toluenediamine, *p*-aminofenol), rubber additives (isopropyl *p*-phenylenediamine, black rubber mix, diaminodiphenyl methane), sulfonamide antibiotics (sodium sulfadimidine, sodium sulfamerazine, sulfanilamide, sulfaguanidine, all 5% pet), and local anaesthetics (benzocaine in the Trolab standard series and procaine, butoform, butacaine, butanilcaine, procainamide and procaine HCl, all 5% pet.). The patient had never experienced any contact dermatitis before, which points to the 'black henna' tattoo as the primary sensitization source. A positive reaction to *Myroxylon pereirae* (balsam of Peru), of unknown relevance, was also found. The allergens in the standard series were obtained from Trolab, Hermall, Germany, the dyes from Chemo- technique, Malmö, Sweden, and some were formulated in house (the patch-test concentration and vehicle being indicated).

Discussion

Since the end of the 1990s, there have been frequent reports of allergic contact dermatitis, also in children (2–5), from temporary henna tattoos, which, in order to obtain faster drying and to make the pigmentation



Fig. 1. Severe dermatitis from black henna tattoo.

darker, often contain *p*-phenylenediamine, *p*-toluenediamine and essential oils. *p*-Phenylenediamine, which is not a legal ingredient of skin paints, is the main culprit in dark tattoos.

Since *p*-phenylenediamine is part of the group of *p*-aminobenzene compounds, sensitized subjects often cross-react to many of these chemically related substances, as did our patient. This extended contact allergy pattern can thus have long-term and, sometimes, severe consequences (6).

References

1. Ho S G, White I R, Rycroft R J, McFadden J P. A new approach to patch testing patients with para-phenylenediamine allergy secondary to temporary black henna tattoos. *Contact Dermatitis* 2004; 51: 213–214.
2. L  uchli S, Lautenschlager S. Contact dermatitis after temporary henna tattoos – an increasing phenomenon. *Swiss Med Wkly* 2001; 131: 199–202.
3. Brancaccio R R, Brown L H, Chang Y T, Fogelman J P, Mafong E A, Cohen D E. Identification and quantification of para-phenylenediamine in a temporary black henna tattoo. *Am J Contact Dermat* 2002; 13: 15–18.
4. Marcoux D, Couture-Trudel P M, Riboulet-Delmas G, Sasseville D. Sensitization to para-phenylenediamine from a streetside temporary tattoo. *Pediatr Dermatol* 2002; 19: 498–502.
5. Neri I, Guareschi E, Savoia F, Patrizi A. Childhood allergic contact dermatitis from henna tattoo. *Pediatr Dermatol* 2002; 19: 503–505.
6. Jasim Z F, Darling J R, Handley J H. Severe allergic contact dermatitis to para-phenylenediamine in hair dye following sensitization to black henna tattoos. *Contact Dermatitis* 2005; 52: 116–117.

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Methacrylates allergy in a professional beautician

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Key words: allergic contact dermatitis; occupational; patch test.

We present the case of a 50-year-old woman with a 4-month history of eczema on the back of both her forearms, hands and fingers. Her patch test was positive (++) for ethylene glycol dimethacrylate (EGDMA), triethylene glycol dimethacrylate (TREGDMA) and for the acrylic nail powder she used. The adoption of vinyl gloves while working and discontinuation in the use of photobonded nails were enough for the resolution of dermatitis.

Case Report

A 50-year-old woman showed a 4-month history of eczema on the back of both forearms, hands and fingers, extended on thumb and index fingertips of her right hand, without onycholysis or periungual eczema. The patient was a professional beautician ('nail technician') and worked with nail tips, gel and/or acrylic nails, glue and nail lacquer. She had been applying artificial acrylic gel nails with brush (photobonded nails) for 7 years to her customers and once per month to herself, sculpturing nails with a small electric mill and producing acrylic nail powder. The eczematous dermatitis regressed during holidays. The patient was patch tested with the European standard series and selected food additives and with the artificial nail series (FIRMA, Florence, Italy). Furthermore, her acrylic nail powder 10% in pet. was directly applied on the skin. Patch test was performed according to the

guidelines established by the International Contact Dermatitis Research Group. Patch testing was positive (++) for EGDMA, TREGDMA and for her acrylic nail powder. Discontinuation of the use of photobonded nails and use of vinyl gloves to protect her hands during the application of sculptured nails resulted in a rapid improvement and resolution of allergic dermatitis.

Discussion

Various cases of onycholysis, onychodystrophy and periungual eczema caused by professional exposure or by personal use of nail tips, gel and/or acrylic nails, glue and nail lacquer are described in literature (1, 2). The role of methacrylates is well known (3, 4), and according to some authors EGDMA and TREGDMA are the ones more frequently positive among workers with professional exposure (4, 5). The use of photobonded sculptured nails rarely causes dermatological complications (3), and few cases of airborne dermatitis are reported in literature (5). In this patient, the eczematous dermatitis on thumb and index fingertips of her right hand was caused by the contact with the electric mill and the brush; the production of acrylic nail powder caused the airborne dermatitis on the back of both of her forearms, hands and fingers. The adoption of vinyl gloves while working and discontinuation in the use of photobonded nails were enough for the resolution of dermatitis. We recommend testing EGDMA and TREGDMA even in patients showing only eczematous dermatitis, without nail lesions or periungual eczema, since these methacrylates cause a large proportion of positive patch tests in the patients with professional exposure.

References

1. Freeman S, Lee M S, Gudmundsen K. Adverse contact reactions to sculptured acrylic nails: 4 case reports and a literature review. *Contact Dermatitis* 1995; 33: 381–385.
2. Hemmer W, Focke M, Wantke F, Gotz M, Jarisch R. Allergic contact dermatitis to artificial fingernails prepared from UV light-cured

- acrylates. *J Am Acad Dermatol* 1996; 35: 377–380.
3. Constandt L, Hecke E V, Naeyaert J M, Goossens A. Screening for contact allergy to artificial nails. *Contact Dermatitis* 2005; 52: 73–77.
4. Kanerva L, Lauerma A, Estlander T, Alanko K, Henriks-Eckerman M L, Jolanki R. Occupational allergic contact dermatitis caused by photobonded sculptured nails and a review of (meth)acrylates in nail cosmetics. *Am J Contact Dermat* 1996; 7: 109–115.
5. Geukens S, Goossens A. Occupational contact allergy to (meth)acrylates. *Contact Dermatitis* 2001; 44: 153–159.

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