

CONTACT POINTS

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Allergic contact dermatitis from cobalt in jewellery

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Monica Hindsén, Lena Persson and Birgitta Gruvberger

Department of Occupational and Environmental Dermatology, Lund University, Malmö University Hospital, SE-205 02, Sweden

Key words: chemical analysis; cobalt; contact allergy; nickel; nickel regulation.

Is cobalt going to replace nickel in jewellery and other items in direct contact with the skin and cause allergic contact eczema?

Case Report

A 45-year-old female was patch tested with our standard series 3 years ago and was shown to be hypersensitive to both nickel and cobalt.

In the summer of 2003, she went to Spain where she bought a necklace declared to be nickel-free. After 1-day use, she developed eczema around her neck. Back home, she wore the necklace again, and a vesicular eczema appeared, nickel dermatitis was suspected (Figs 1a and b). To investigate if nickel ions could be released from the necklace, the dimethylglyoxime test was performed on different parts of the necklace. This test did not indicate any release of nickel ions. However, because no nickel ions could be demonstrated with the dimethylglyoxime test, further chemical analysis was performed.

The necklace was extracted with 30 ml of artificial sweat for 5 min in an ultra sonic bath. The presence of nickel and cobalt in the extract was investigated by an Atomic Absorption Spectrometer equipped

with Zeman correction and a Graphite Furnace (AAnalyst 800, THGA Graphite Furnace, Perkin Elmer Instruments, Norwalk, USA).

6 µg nickel and 411 µg cobalt were demonstrated in the extract. Further analyses were performed to investigate if cobalt was released from the chain or from other parts of the necklace. About 15 cm² of the chain, 7 cm² of the brown plates and 12 cm² of the 'pearls' were extracted separately with 20 ml of artificial sweat for 5 min. The release of cobalt was: from the chain 0.6 µg Co/cm², from the brown plate 0.01 µg Co/cm² and from the 'pearls' 0.01 µg Co/cm².

To establish the patch test reactivity the patient was further tested with

serial dilutions of aqueous solutions of nickel sulphate hexahydrate 12.5% w/v and cobalt chloride hexahydrate 7.8% w/v, both substances from Acros organics, Geel West Zone 2, Geel, Belgium. 15 µl of the test solutions was micropipetted onto filter onto file paper discs of mall Finn Chambers (Epitest Ltd. Oy, Tuusula, Finland) on Scanpor (Norgesplaster A/S, Vennessla, Norway). The reading was performed on day 3, according to International Contact Dermatitis Research Group (ICDRG criteria) (1).

The patient was tested positively to nickel sulphate hexahydrate down to 0.8% w/v and to cobalt chloride hexahydrate down to 0.002% and with a strong (++++) reaction to cobalt chloride hexahydrate 0.5%.

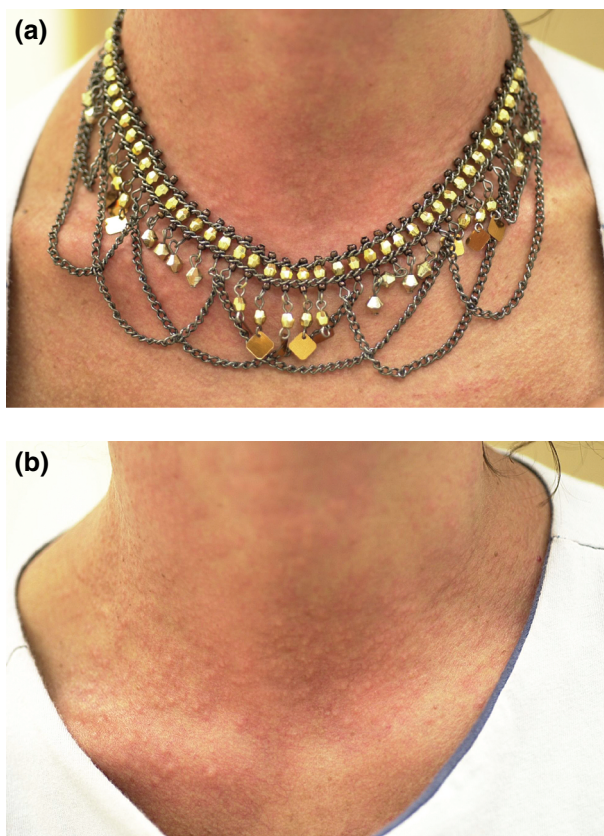


Fig. 1 (a) The necklace. (b) Eczema around the neck after 1-day use of the necklace.

Discussion

Nickel allergy is very common. To prevent contact allergy to nickel and allergic contact dermatitis from nickel, the EU nickel directive was reinforced in 1994 (2). Initially, our case was believed to suffer from allergic contact dermatitis from nickel due to insufficient compliance with the EU nickel directive, i.e. a too high nickel release from the necklace. However, the dimethylglyoxim test did not indicate any nickel release. Atomic absorption spectrometre (AAS) investigation was therefore performed to investigate any nickel and cobalt release. Expectedly, a nickel release was demonstrated but was very low. On the other hand, an approximately 70 times higher cobalt release was found. To help determine the clinical relevance of the metal allergies, patch testing with dilution series of the respective metal salt was performed. The minimal elicitation concentration dose (MEC) (3) was approximately 400 times lower for cobalt than for nickel. Furthermore, the cobalt MEC (a positive reaction to 0.002% with 15 µl of cobalt chloride hexahydrate on a Finn Chamber, diameter 0.8 cm) corresponds to a cobalt dose of 0.000015 µg/cm² which means that the cobalt release from the chain was 40 000 times higher.

The results of patch testing and chemical analyses together with the calculations made prove that the patient suffered from allergic contact dermatitis from cobalt released from her necklace. Her interesting question is – whether this is a rather unique case or we will see more similar cases due to replacement of nickel with cobalt in cheap jewellery.

Acknowledgements

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Address:

Monica Hindsén
Department of Occupational and
Environmental Dermatology
Malmö University Hospital
SE-205 02 Malmö
Sweden
e-mail address:
monica.hindsen@derm.mas.lu.se

Contact erythema multiforme from *Primula obconica*

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R. Gallo, S. Sorbara and F. Rongioletti

Section of Dermatology – Di.S.E.M. –
University of Genoa, Genoa, Italy

Key words: allergic contact dermatitis; erythema multiforme; histology; localized eruption; plant; primin; *Primula obconica*.

Case Report

A 68-year-old lady, with no recent history of herpes simplex, other infections or drug ingestion, presented with pruritic, purplish papules coalescing into linear streaks and small plaques on the dorsa of her hands, fingers and wrists. According to the patient, an amateur gardener, the eruption had started a few days

before, shortly after she had handled several plants, including *Primula obconica*. A biopsy of a papule was taken and histology revealed interface dermatitis with basal layer vacuolization, subepidermal oedema, a lymphocytic infiltrate in the upper dermis and some necrotic keratinocytes in the epidermis, a picture strikingly consistent with erythema multiforme (Fig. 1).

Patch testing with the Italian standard series plus primin, an apten not routinely tested in Italy, resulted in a positive reaction to primin alone (1+ at D2 and D4), while a piece of a leaf of the patient's primula, open patch tested as is, induced a strong erythematooedematous reaction. The patient stopped handling her primula and her dermatitis healed, but quickly recurred when she decided to make a try and handle it again. The little plant was given away once for all, and the patient has been free from symptoms ever since.

Comment

Allergic contact dermatitis from *Primula obconica*, although possibly on the decline, is still frequent enough in Northern Europe to justify the inclusion of primin, primula main sensitizer, in the European standard series (1). Much less so in Italy, where routine patch testing to primin is not recommended by the Società Italiana di Dermatologia Allergologica Professionale ed Ambientale (SIDAPA).

The clinical features of *Primula* dermatitis typically consist of linear streaks of erythema and oedema with vesicles on the forearms and fingers. Involvement of the face is possible.

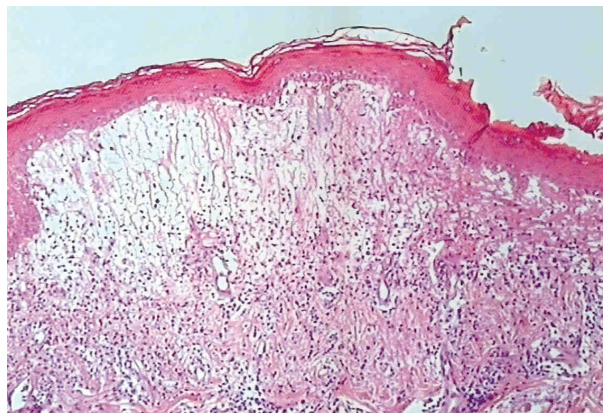


Fig. 1. Histology of the patient's biopsy showing typical features of erythema multiforme.

Erythema multiforme-like eruptions are known to occur, but seem to be extremely rare, and none of the cases reported to date was histologically documented (2–4). In our case, histology proves that allergy to *Primula obconica* can actually induce the inflammatory pattern typical of erythema multiforme.

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Address:

Dr Rosella Gallo
Section of Dermatology – Di.S.E.M. –
University of Genoa, Viale Benedetto
XV, 7, 16132 Genoa, Italy
Tel: +39 0103538433
Fax: +39 0103538401
e-mail: rs.gallo@unige.it

Delayed-type hypersensitivity to mepivacaine with cross-reaction to lidocaine

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Leticia Sanchez-Morillas¹, Jose Julio Laguna Martinez¹, Mar Reano Martos², Prado Gomez-Tembleque¹ and Estrella Rojo Andres¹

¹Allergology Department, Hospital Central de la Cruz Roja, and ²Allergology Department, Clinica Puerta de Hierro, Madrid, Spain

Key words: allergic contact dermatitis; cross-reactions; lidocaine, patch test.

Local anaesthetics are classified into 2 main classes (1). The ester group includes procaine, benzocaine, oxybuprocaine, chlorprocaine, tetra-

caine and butoform. The amide group includes lidocaine, mepivacaine, prilocaine, bupivacaine, etidocaine, ropivacaine and dibucaine (2).

Case Report

A 54-year-old woman, with no history of atopy or allergy, first presented 7 years ago with pruritus and a maculopapular rash on her legs, 2 days after a second session of sclerotherapy in legs with polidocanol and mepivacaine. The next sessions were performed with polidocanol only, with good tolerance.

She was referred to our Allergy Department because 6 months later, she was treated with mepivacaine 2% for a surgery and had developed 2 days after the excision a maculopapular rash and pruritus in the injection area. The skin lesions completely resolved in 7 days without treatment.

We performed skin prick and intradermal tests 1/1 and 1/10 dilution with lidocaine 2%, mepivacaine 1%, bupivacaine 1% and articaine 4% in saline solution with negative result. 48 hr later, the 1/1 dilution intradermal skin test with mepivacaine was positive (Fig. 1). The patient was patch tested with the GEIDC standard series and with lidocaine 2%, 5% and 10%, mepivacaine 1%, 2% and 3%, bupivacaine 0.25%, 0.5% and 0.75%, articaine 4% and ropivacaine 0.2% in saline solution. Patch tests were read at 2 and 4 days. Patch tests with GEIDC were negative. Patch tests at 2 and 4 days were positive with lidocaine 2% (+), 5% (+++) and 10% (+++) and mepivacaine 1% (+), 2% (+++) and 3% (+++) (Fig. 2).

The same intradermal and patch tests performed in 10 control subjects, 5 atopic and 5 non-atopic, were negative. A skin biopsy from the positive patch test with mepivacaine 3% showed hyperkeratosis, dermal fibrosis and lymphocytic infiltrate.

To investigate possible cross-reactivity among local anaesthetics, we performed single-blind subcutaneous challenges with bupivacaine and articaine with entirely negative results. Then, we recommended the use of bupivacaine or articaine for future interventions that require a local anaesthetic.

Discussion

Two types of immunologically mediated reactions to local anaesthetics are commonly described: IgE-mediated reactions and allergic contact dermatitis. Type I reactions are much more common than delayed-type hypersensitivity reactions (3).

Most of the delayed-type hypersensitivity reactions to amide anaesthetics occur after a topical application (2). There have been reported a few cases of contact dermatitis due to subcutaneous administration of local anaesthetics, which have been confirmed by patch test (1, 4, 5).

Duque et al. (1) demonstrated delayed-type hypersensitivity to lidocaine and mepivacaine. In our case, there was no evidence of a previous use of lidocaine in this patient; therefore, positive patch tests to lidocaine and mepivacaine probably represent



Fig. 1. 1/1 dilution intradermal skin test with mepivacaine hydrochloride.

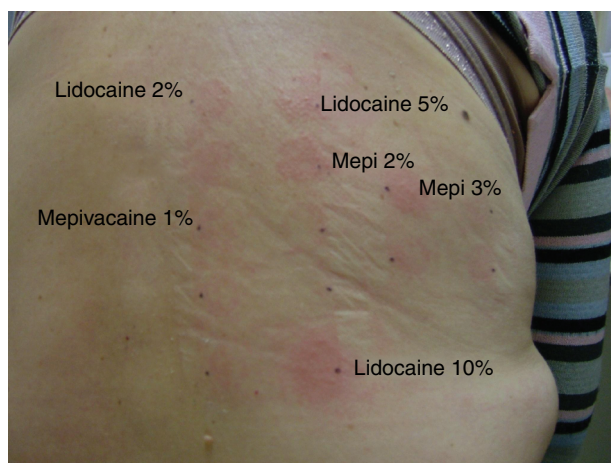


Fig. 2. Patch tests positive with lidocaine 2%, 5% and 10% and mepivacaine 1%, 2% and 3%.

cross-reactions and not a true primary hypersensitivity.

On the other hand, Bircher et al. (4) described a case of delayed-type hypersensitivity to an unidentified anaesthetics with positive patch tests to lidocaine, mepivacaine, bupivacaine and prilocaine but negative to articaine. They conclude that there are no cross-reaction with articaine because of the different chemical structure and suggest that the allergenic structure is associated with the lipophilic aromatic ring.

Torres et al. (3) reported the first case of fixed drug eruption induced by mepivacaine.

Kanerva et al. (6) reported the case of a woman with contact dermatitis after a infiltration with mepivacaine and lidocaine, and they concluded that intradermal and patch tests should be performed, also to detect delayed-type allergy to local anaesthetics.

We report a contact dermatitis due to mepivacaine with cross-reaction to lidocaine that has been confirmed by a positive patch test. The patient tolerated single-blind subcutaneous challenges with bupivacaine and articaine.

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Address:

Dra. Leticia Sánchez-Morillas
Allergology Department
Hospital Central de la Cruz Roja
Reina Victoria, 2228003 Madrid
Spain
Tel: +34 91 4536457
Fax: +34 91 5745719
e-mail: lsanchezmorillas@hotmail.com

***N,N*-dimethyl-*n*-dodecylamine caused contact dermatitis**

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Keiji Sugiura¹, Mariko Sugiura¹, Ritsuko Hayakawa¹ and Kazumi Sasaki²

¹Environmental Dermatology and Allergology, Daiichi Clinic, 3F Sakae Daiichiseimei building, 2-13 Shinsakae-machi, Naka-ku, Nagoya, Japan, and ²Life and Welfare Technology Center, National Institute of Technology and Evaluation (NITE), 2-49-10 Nishihara, Shibuya-ku, Tokyo 151-0066, Japan

Key words: contact dermatitis; *N,N*-dimethyl-*n*-dodecylamine (DMDA); softener; detergent.

Case Report

A 12-year-old boy, a football player, developed chronic dermatitis on his legs since 2003. His eruption gradually developed on his feet after playing football. He visited our clinic for the first time in 2004, and he had erythema, crust and pigmentation with itching on his legs and feet. The results of skin biopsy showed parakeratosis, spongiosis and lymphocytes infiltration around the capillary. Because the results of skin testing with shin guard and socks were positive reaction, we suspected his condition to be a contact dermatitis due to some components of socks or shin guard. We extracted the constituents of socks and shin guard using the following eluents, hexane 100 ml, hexane : chloroform (1 : 1) 100 ml, chloroform 100 ml, chloroform : methanol (1 : 1) 100 ml and methanol 100 ml. The extracted solutions were separated by the column chromatography. We analysed the extracted solution and identified the separated chemicals using the gas chromatography/mass spectrometry (GC/MS). Apparatus: gas chromatography (JMS-700, Japan Electron Optics Laboratory, Tokyo, Japan). Column: 5% phenylmethyl silicon DB-5MS (J&W Folsom, CA, USA) 0.25 µm thickness, 0.25 mm id × 30 m length. Ionization mode: electron ionization (EI) 70eV. Carrier gas: Helium. We detected chemicals present in the socks: No. 0: *N,N*-dimethyl-*n*-dodecylamine (DMDA), benzyl alcohol, hexylcinnamic aldehyde, dimethylphthalate (DMP), di(2-ethylhexyl)phthalate (DEHP), lanol; No. 1: paraffin; No. 2: benzyl alcohol, hexylcinnamic aldehyde, DMP; No. 3: benzyl alcohol, hexylcinnamic aldehyde, DMP, DEHP, lanol, hexsachloroethane, silicon; No. 4: DMDA, benzyl alcohol, hexylcinnamic aldehyde; No. 5: undetected, chemicals detected in the shin guard; No. 0: paraffin, DEHP; No. 1: paraffin; No. 2: di(2-ethylhexyl)adipate (DEHA); No. 3: hexylcinnamic aldehyde, DEHP, lanol, hexsachloroethane, silicon, thiuram, hexylcinnamic aldehyde; No. 4: biuret, lanol; No. 5: undetected in the extract and separated solutions (Table 1). The 48 hr closed patch tests

Table 1. Analysed methods (elution for analyse) and detected chemicals

Detected samples	Elution	Chemicals detected in the socks	Chemicals detected in the shin guard
No. 0	Chloroform and methanol	DMDA, benzyl alcohol, hexylcinnamic aldehyde, DMP, DEHP, lanol	Paraffin, DEHP
No. 1	Hexane	Paraffin	Paraffin
No. 2	Hexane and chloroform	Benzyl alcohol, hexylcinnamic aldehyde, DMP	DEHA
No. 3	Chloroform	Benzyl alcohol, hexylcinnamic aldehyde, DMP, DEHP, lanol, hexachloroethane, silicon	Hexylcinnamic aldehyde, DEHP, lanol, hexachloroethane, silicon, thiuram, hexylcinnamic aldehyde
No. 4	Chloroform and methanol	DMDA, benzyl alcohol, hexylcinnamic aldehyde	Biuret, lanol
No. 5	Methanol	Undetected	Undetected

DEHP = di(2-ethylhexyl)phthalate; DEHA = di(2-ethylhexyl)adipate; DMDA = *N,N*-dimethyl-*n*-dodecylamine; DMP = di-methylphthalate.

Table 2. The results of patch testing with analysed chemicals

Patch testing materials	Concentration/vehicle ^a	48 hr reading	72 hr reading
Chemicals detected in the socks			
No. 0	5	—	—
No. 1	1	—	—
No. 2	1	—	—
No. 3	1	—	—
No. 4	1	—	—
No. 5	1	—	—
Chemicals detected in the shin guard			
No. 0	5	—	—
No. 1	1	—	—
No. 2	1	—	—
No. 3	1	—	—
No. 4	1	—	—
No. 5	1	—	—
<i>N,N</i> -dimethyl- <i>n</i> -dodecylamine	2	2+ (erythema, edema and vesicle)	3+ (erythema, edema and erosion)
Biuret	2	—	—
Hexylcinnamic aldehyde	2	—	—

^aValues are expressed as %pet.

Readings were made according to ICDRG recommendations.

using the detected chemicals (detected in the socks and the shin guard; Nos. 0–5), DMDA, Biuret and hexylcinnamic aldehyde were applied using Finn Chambers[®] and Scanpor[®] tape on the back of patient. The results of the patch testing are shown in Table 2, only DMDA showed erythema, oedema and vesicles at the 48 hr readings and erythema, oedema, bulla and erosion at the 72 hr readings. However, the results of patch test using detected chemicals (detected in the socks; No. 0 and No. 4) were negative reactions. As negative controls, we tested distilled water and pet. We confirmed the positive reactions to DMDA.

Discussion

He showed positive reactions to DMDA. One reason for negative

reaction of patch tests using chemicals detected in the socks: No. 0 and No. 4 might be low concentration (<1%) of DMDA. Because we did not find DMDA in the detected chemicals of shin guard, we considered that the reason for positive reaction of skin testing using shin guard was due to contact with socks. The results of patch testing with the analysed materials indicated that the most possible causative agent of his contact dermatitis was DMDA left in the socks. DMDA is one of softener, with chemical formula C₁₄H₃₁N, molecular weight 213.40 and CAS No. 112-18-5. DMDA is a safe and stable chemical agent and a kind of laurylamine. Laurylamine is a dodecylamine. 2 kinds of dodecylamine, *N,N*-bis(3-aminopropyl)dodecylamine and bis-(aminopropyl)-laurylamine have reported causing

contact dermatitis in the hospital staff (1, 2). Laurylamine is widely used in our country and it has never caused disturbance. Because DMDA is a very famous and safe agent, the disease like this case may increase in the future. The best he can do is washing clothes without softener and use lesser amount of detergent.

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Address:

Keiji Sugiura
Environmental Dermatology and
Allergy
Daiichi Clinic
3F Sakae Daiichiseimei building
2-13 Shinsakaeachi
Nakau, Nagoya 460-0004
Japan
Tel: +81 52 951 6361
Fax: +81 52 951 6361
e-mail: ksugiura@daiichiclinic.jp

***Mentha pulegium* contact dermatitis**

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E. Roé, E. Serra-Baldrich, J. Dalmau,
L. Peramiquel, M. Pérez, C. Granel and
A. Alomar

Serveis de Dermatologia i Al·lèrgologia,
Hospital de la Santa Creu i Sant Pau,
Barcelona, Spain

Key words: contact dermatitis; *Mentha pulegium*; pennyroyal.

Mentha pulegium or pennyroyal, as commonly known, is a member of the *labiatea* family. A tea brewed from the leaves of the plant has been used to induce sweating to aid in eliminating toxins, and also as a carminative to relieve gas, stimulate digestive action and relieve nausea. Pennyroyal contains pulegone, a highly toxic volatile oil which has been utilized to induce abortion. Multiple organ failure and hepatotoxicity has been described after ingestion of this oil.

Topically, it has been used to heal wounds and it is an effective insect repellent (1, 2).

We present a case of allergic contact dermatitis due to *M. pulegium*.

Case Report

A 66-year-old woman with antecedents of dyshidrosis on the feet and allergic contact dermatitis to nickel came to our department with 24-hr evolution of erythematous and pruriginous plaques, vesicles and desquamation on the palms, accompanied by moderate bilateral oedema of the hands.

2 days earlier, the patient had been in the countryside and had been picking pennyroyal leaves to make herbal infusions. For several years, she had regularly drunk this herb without side-effects at any time. She had never used the infusions as a topical treatment. The patient often used other species of the *Labiatae* family, and she had gathered *M. pulegium* before without any cutaneous symptoms. We decided to perform a patch test study on the suggestion of an allergic or irritative contact dermatitis.

Various patch tests were performed following the International Contact Dermatitis Research Group (ICDRG) rules, with 48-hr occlusion and with lecture at 48 and 96 hr. As expected, the standard patch test was positive (+ +) to nickel. The textile and plant patch tests were negative. A direct patch test with pennyroyal leaves was positive (+ +). A water extract (*M. pulegium* infusion) 1/1000 also showed a positive reaction (+ +). 10 controls were negative. A standard skin prick test later performed was positive to olive (3 × 3) and histamine 1/10 000. The specific prick test to *M. pulegium* was negative.

Conclusion

There are no previous reports, to our knowledge, on *M. pulegium* allergic contact dermatitis. Our case is a type IV hypersensitive reaction with a positive patch test and negative prick test. However, there are some reports about systemic symptoms after the ingestion or inhalation of pennyroyal oil (3, 4).

Sams first described allergic contact dermatitis from mint (*Mentha citrata*) in 1940 (5).

Peppermint oil has also been reported to cause allergic contact dermatitis in fragrance, toothpaste flavour and food handlers (6–8). The ingredients of peppermint oil include menthol, menthone, methyl esters, cineole, l-limonene, pinene and phellandrene. The last three have been reported to cause allergic contact dermatitis after dental operations (6) and after the local application of compresses moistened with an infusion of the leaves (9). It has been demonstrated that limonene is the first cyclic intermediate in the biosynthesis of monoterpenes (10, 11) in *Mentha piperita* and *M. pulegium*, so this compound could also perhaps be responsible for the sensitivity in the case we describe.

We believe that this is the first report of allergic contact dermatitis with *M. pulegium* leaves from direct contact, in our case, while picking the plant in the countryside.

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Address:

Dr A. Alomar
Department of Dermatology
Hospital Santa Creu i Sant Pau
San Antonio Maria Claret 167
08025 Barcelona
Spain
Tel.: +34 93
Fax: +34 93 291 9136
e-mail: aalomar@hsp.santpau.es

Allergic contact dermatitis to *Plectranthus amboinicus* masquerading as chronic leg ulcer

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Shyue-Luen Chang, Ya-Ching Chang, Chin-Hsun Yang and Hong-Shang Hong

Department of Dermatology, Chang-Gung Memorial Hospital, Taipei, Taiwan

This report discusses a case of a 69-year-old woman who developed chronic non-healing leg ulcers after long-term topical use of *Plectranthus amboinicus*. The ulcer was proven to be allergic contact dermatitis to *P. amboinicus* by a patch test. The ulcer healed after discontinuation of *P. amboinicus*. To the best of our knowledge, this is the first reported case of allergic contact dermatitis to *P. amboinicus* masquerading as chronic leg ulcer.

Key words: allergic contact dermatitis; herbal medicine; leg ulcer, patch test; phytodermatitis; *Plectranthus amboinicus*.

Plectranthus amboinicus (Lour.) Spreng belongs to the *Lamiaceae* family. Its hairy leaves have epidermal glands that secrete volatile oils which give it a characteristic scent. In Taiwan, it is often used as a folk medicine for pharyngitis and liver disease (by mouth) and for healing wounds, infections and skin inflammations (topical).

Case Report

This 69-year-old otherwise healthy woman was admitted to our hospital with chronic non-healing right-leg ulcers for 3 years. She reported having right-leg cellulitis previously with sequelae of erythema and swelling. Because of the redness and swelling of her right leg, she had started to use *P. amboinicus* topically for 3 years. *Plectranthus amboinicus* had reduced swelling, and she had continued its use. However, skin erosions and

ulcerations over right leg developed gradually with pain, itching and paresthesia.

Physical examination revealed a $10 \times 10 \times 0.5$ -cm ulcer located mainly on right calf region with crusts, discharge and a granulated base (Fig. 1). There was a rectangular, well-demarcated, eczematous patch surrounding the ulcer. The arterial pulse, venous echo and wound culture results were all within normal limits.

The ulcers healed gradually, and eczema surrounding the ulcers improved after discontinuation of *P. amboinicus*, normal saline wet dressing and topical corticosteroid treatment for surrounding lesions. 2.5 months later, the ulcers had almost healed and did not recur.

The patient was patch-tested, using an IQ chamber (Chemotechnique Diagnostics, Malmo, Sweden), with the European standard series, leaf of *P. amboinicus* (as is), crushed leaf of *P. amboinicus* and 5% and 10% of crushed *P. amboinicus* leaf in water and alcohol. The patient developed a 2+ reaction to crushed leaf of *P. amboinicus* on day 2 and 1+ reaction on day 4. Besides, he had 1+ reaction to leaf of *P. amboinicus* (as is) on both day 2 and day 4. There were no reactions to aqueous and alcoholic solutions.

Patch tests for leaf of *P. amboinicus* (as is) were performed on 15 patients in the patch test clinic (4 males and 11 females; mean age: 37.1 years). Only 1 patient showed a strong (++) reaction to *P. amboinicus* on day 4.

Discussion

Plectranthus amboinicus (Lour.) Spreng is used as a culinary seasoning in the Caribbean and as herbal medicine in Taiwan and other countries (1, 2). There is only one case report of allergic contact dermatitis to a different species of *plectranthus* (*Plectranthus barbatus*) (3). Hjorth (1968) observed two positive patch test reactions to an unidentified *plectranthus* species (4). To the authors' knowledge, there is no report of an allergic reaction to *P. amboinicus*, especially when masqueraded as chronic leg ulcers.

Differential diagnoses of chronic leg ulcers include venous origin, peripheral arterial occlusive disease, neuropathy, metabolic disease, haematological disease, trauma, infection, neoplasm, etc.

This patient's chronic leg ulcers were deemed most likely induced by allergic contact dermatitis to *P. amboinicus*. This likelihood was based on the following observations: (i) the lesions appeared after topical application of *P. amboinicus*; (ii) the ulcers and the eczematous patch surrounding the ulcers corresponded to the area where the *P. amboinicus* had been applied; (iii) a patch test with leaf of *P. amboinicus* showed positive reaction; (iv) skin lesions improved after discontinuation of *P. amboinicus*; (v) patch test for leaf of *P. amboinicus* in 15 routine patch-tested patients showed positive reaction in only 1 case and (vi) other causes of chronic leg ulcers could be excluded.

The only control patient with positive reaction to *P. amboinicus*



Fig. 1. Irregular-shaped ulcerations of $10 \times 10 \times 0.5$ cm on the right leg with surrounding erythematous patch.

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developed 2+ reaction on day 4 but not on day 2. Although the patient was unaware of previous contact to *P. amboinicus*, her parents owned a garden with a variety of plants. Furthermore, her previous sensitization is not surprising, due to high prevalence of using herbal medicine in Taiwan. For this patient, allergic reaction is more likely than irritant ones.

Allergic contact dermatitis is typically manifested as eczematous dermatitis. In this case, sensitization to *P. amboinicus* and continued *P. amboinicus* use caused persistent dermatitis which progressed to chronic ulcers. In animal models, active contact dermatitis impairs wound healing, and clinical experience suggests a similar effect in humans (5, 6).

Numerous consumers believe that plants or products formulated with botanical or other natural ingredients have fewer potential side-effects. The increasing popularity of alternative remedies has increased the number of people at risk of sensitization to plant materials. Allergic contact dermatitis to *P. amboinicus* may not be rare in Taiwan. Further study is required to identify the sensitizing chemicals in *P. amboinicus*.

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Address:

Ya-Ching Chang, MD
Department of Dermatology
Chang-Gung Memorial Hospital
No.199

Tunghwa N. Road

Taipei

Taiwan

Tel: +886 2 271 35211x3399

Fax: +886 2 271 91623

e-mail: ellis@cgmh.org.tw

Allergic contact dermatitis due to methyldibromo glutaronitrile in make-up removal wipes

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Javier Sánchez-Pérez¹, María Jesús Del Río², Yolanda Delgado Jiménez¹ and Amaro García-Diez¹

¹Department of Dermatology, and

²Department of Pharmacy, Hospital Universitario de La Princesa, Universidad Autónoma, Madrid, Spain

Key words: 1,2-dibromo-2,4-dicyanobutane; biocides; cosmetic; make-up removal wipes.

Methyldibromo glutaronitrile has been used in both leave-on and rinse-off cosmetic products in concentrations up to 0.1%. However, in 2002, the European Commission prohibited the use of methyldibromo glutaronitrile in leave-on cosmetics. We describe a case of contact allergy to methyldibromo glutaronitrile in make-up removal wipes.

Case Report

A 22-year-old non-atopic woman student consulted us in February 2000 because of an acute contact dermatitis of the face and the neck. The patient was advised to stop all cosmetics, and eruption healed after 10 days. Last year, on 2 occasions, she presented with itchy, erythematous and scaly plaques that started on palpebral area and spread in a few days to the face and neck areas. For 5 years, she had used continually

various cosmetic products, and for 2 years she used sporadic make-up removal wipes.

Patch tests with TRUE-test[®] (Mekos Laboratories AS, Hillerød, Denmark), cosmetics series (Chemotechnique[®], Malmö, Sweden), preservatives series, toluene sulfonamide-formaldehyde resin (Marti Tor, Barcelona, Spain), her own cosmetics and make-up removal wipe were performed using Finn Chambers[®] (Epitest Ltd Oy, Tuusula, Finland) on Scanpor tape[®] (Norgesplaster, Vennesla, Norway).

Positive reactions (++) were obtained to thimerosal 0.0080 mg/cm², Euxyl K 400 1.5% pet., methyldibromo glutaronitrile 0.3% pet. and a piece of make-up removal wipe at D2 and D4. Later, the components of this product (supplied by the manufacturer) were tested separately. A positive reaction (++) to methyldibromo glutaronitrile 0.1% pet. was observed. Patch tests with methyldibromo glutaronitrile 0.3% pet. were negative in 20 controls at D2 and D4.

Discussion

Allergic contact dermatitis due to methyldibromo glutaronitrile has rarely been reported with rinse-off cosmetics, such as shampoo, soap, make-up, cleansing lotions and milks (1–7). Allergic contact dermatitis has been described related with perianal towel. It has not often been possible to establish whether the suspected rinse-off cosmetics were the primary sensitizers (4, 5). In the case reported here, the primary sensitizers may be make-up removal wipes containing methyldibromo glutaronitrile at 0.1% concentration. However, the exposure to a rinse-off product containing the maximum permitted level of methyldibromo glutaronitrile can elicit a contact dermatitis in presensitized patients (8).

At present, the concentration and vehicle for patch testing with methyldibromo glutaronitrile have to be improved (1, 9, 10). From the year 2005 onward, methyldibromo glutaronitrile at 0.5% w/w in pet. is recommended for the European standard patch test series (11). Patch test data from dermatology clinics showed an increasing frequency of reaction to methyldibromo glutaronitrile in eczema patients from 0.7% in 1991 to 3.7% in 2000 (12).

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Address:

Javier Sánchez Pérez
Servicio de Dermatología
Hospital Universitario de la Princesa
C/Diego de León, 62
Madrid 28006
Spain
Tel: +34 91
Fax: +34 91 520 2435
e-mail: jsanchezperez@aedv.es