

Erythema multiforme due to contact with weeds: a recurrence after patch testing

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Erythema multiforme (EM) as a complication of patch testing (PT) is rare. A 52-year-old woman with a 13-year history of episodes of EM, after contact with weeds during home gardening, had had no recent history of herpes simplex, other infection, drug ingestion or vaccination. On examination, EM lesions were distributed on the exposed skin. 5 weeks after complete resolution, PT and photopatch testing (PPT) were done with fresh plants she brought in. She was PT with a standard series and the Hermal-Trolab plants, woods, tars, balsams and flavors series. Intradermal testing, with a 3 + reaction to mixed weed pollens, was done 3 weeks later. Specific IgE to weed pollens class 1 (CAP-Pharmacia) was detected. Eczematous PT reactions were obtained with fresh leaves: common chickweed (*Stellaria media* Caryophyllaceae), dandelion (*Taraxacum officinale* Compositae), field-milk thistle (*Sonchus arvensis* Compositae) and white clover (*Trifolium repens* Leguminosae). Photoaggravation was seen to common chickweed and dandelion. Positive PT was also seen with allantolactone. By the 4-day reading, a typical EM had commenced, coming up to quite the same extent as seen on admission. There was no photosensitivity (UV skin tester, K. Waldmann). In the essential oil obtained from common chickweed, thin layer chromatography (TLC) revealed the well-known contact allergens borneol, menthol, linalool, 1,8-cineole, and other terpenes such as epoxy-dehydro-caryophyllene, monoterpene alcohol-ester and caryophyllene. Up to now, no data on essential oil in *Stellaria media* (common chickweed) have been reported. It can be concluded that EM developed due to contact with weeds, and recurred after patch testing. Neither blistering nor eczematous lesions have been seen on her skin, making this case very unusual. As far as the world literature is concerned, this is only the 4th report of EM developing in association with patch testing.

Key words: allergic contact dermatitis; Caryophyllaceae; Compositae; erythema multiforme; Leguminosae; patch testing; photopatch testing, plants; *Sonchus arvensis*; *Stellaria media*; *Taraxacum officinale*; terpenes; *Trifolium repens*. © Blackwell Munksgaard, 2003.

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Erythema multiforme (EM) is an acute, occasionally recurrent, and very rarely, persistent dermatosis, characterized by distinctive target lesions, with or without mucous membrane involvement. A cell-mediated immune response to antigen that has been processed and presented within the skin has been postulated (1, 1a).

Contact EM (CEM) is a rare noneczematous manifestation of allergic contact dermatitis, which can be elicited by multiple allergens in a given patient, and has been attributed to diverse common and potent allergens. EM due to contact with exotic woods (2) and various plants, such as Compositae (*Artemisia vulgaris*, *Inula helenium*), Primulaceae

(*Primula*), Anacardiaceae (*Toxicodendron radicans*), Hypericaceae (*Hypericum erectum*), and Salicaceae (*Capsicum*), is well recognized (3). What is extremely rarely seen is an EM reaction as a complication of patch testing (PT). In 1940, Cavendish described a 'peculiar' reaction to a patch test following exposure to 9-bromofluorene (4); in 1985, Friedman & Perry to nickel sulfate (5); and in 1992, O'Donnell & Tan to colophonium and fragrance mix (6).

Patients and Methods

A 52-year-old nonatopic woman had a 13-year history of recurrent EM affecting exposed skin. A few

target-like papules would occur early in the spring, following exposure to common chickweed during home gardening. Exclusively confined to the skin, lesions had a marked tendency to become more widespread each season, particularly from 1992 when she started occupational gardening for the town council. Her work included grass mowing and hand weeding. She was referred to us in April 1995, because of widespread severe haemorrhagic target lesions symmetrically distributed on the face, forearms, hands, wrists, palms and knees. She had no personal or family history of atopy. She had had no recent history of herpes simplex, other infection, drug ingestion, recent vaccination, or contact (direct or indirect) with pesticides. She particularly suspected common chickweed, but could not rule out other plants that she came into contact with.

The condition responded to systemic corticosteroid treatment. 5 weeks later, patch and photopatch testing (PT, PPT) were performed. She had had no further contact with plants during PT and PPT, or immediately after. By the 4-day reading, the patient presented a typical EM rash, with a haemorrhagic component, that had commenced, coming up to quite the same extent as seen on admission.

The patient has changed her job but returned, in February 1998 and in January 2000, with further acute EM eruptions. Questioning revealed that she still had common chickweed and dandelion in her own garden, though she avoided direct contact with them.

Patch and photopatch testing

Patch tests were performed according to international guidelines, using Finn Chambers on Scanpor tape (Epitest Ltd Oy, Finland). Patches were applied for 2 days and the results were read at 3 and 4 days.

Photopatch tests (PPT) were applied in duplicate, and one set was exposed to 5–10 J/cm² UVA (KSL-600 quartz-lamp, Ei Niš, Yugoslavia) at 1 day before being read at 3 and 4 days. A positive photopatch test response was considered indicated by a negative result at the unirradiated site, but a positive response at the irradiated area in contact with the allergen. A photoaggravation was considered if the irradiated site showed a stronger reaction than the non-irradiated area.

The patient was patch tested with the European standard series, and specific plants, woods, tars, balsams, perfumes and flavours series (Hermal-Trolab®, Reinbek, Germany). The patient's own plants (fresh leaves) were patch and photopatch tested by the Finn Chamber method in a drop of

distilled water (occlusion time 2 days). The patient was tested with the same specimen of each plant on irradiated and non-irradiated test sites. These included fresh leaves of *Fagopyrum dumetorum* Polygonaceae, *Taraxacum officinale* Compositae, *Stellaria media* Caryophyllaceae, *Rosa galica* – Rosaceae, *Trifolium repens* Leguminosae, and *Sonchus arvensis* Compositae. The first reading was performed when occlusion was removed, the 2nd the next day, and the third, 4–6 days after starting patch testing (7). Control tests were performed on 11 atopic patients, in order to exclude false-positive reactions. Patients with current atopic manifestations (atopic dermatitis, and/or allergic asthma and/or allergic rhinitis), positive intradermal test and specific IgE to common inhalant allergen(s) were considered atopics. Control tests were performed with the same method and the same part of the plant that had elicited a positive PT or PPT reaction.

Evaluation of phototests

Phototests were performed to UVB and UVA. The UVA source was KSL-600 quartz-lamp Ei Niš, Yugoslavia, and the UVB source was Saalman-Sup-Lampen PR II, Herford, Germany. The minimal erythema dose (MED) determinations for UVB and UVA were obtained with a UV skin tester (K-Waldmann, Schwenningen, Germany). The normal MED ranges used for UVB are dependent on the skin type. For a patient with skin type IV (as in our case), the normal reference ranges used for UVB were 45–60 mJ/cm². For UVA, an MED greater than 20 J/cm² was considered normal. A diagnosis of photosensitivity was made in the patient with low MED-A and/or MED-B (8).

Intradermal tests

Intradermal testing was done 3 weeks after patch and photopatch tests with common inhalant allergens (Torlak®, Beograd, Yugoslavia): *Dermatophagoides pteronyssinus*, house dust, mixed weed pollens, mixed grass pollens, mixed tree pollens, mixed animal epithelia, and feathers. The mean wheal diameter was calculated for each allergen. If the mean diameter was greater by more than 5 mm than the negative control (normal saline), the test was regarded as positive.

Determination of specific IgE level in serum

Commercial weed pollens CAP (Pharmacia Diagnostics, Upssala, Sweden) was used to measure specific IgE antibodies to mixed weed pollens (*Ambrosia elatior*, *Artemisia vulgaris*, *Taraxacum offic-*

inale, *Chrysanthemum leucanthemum*, *Solidage virgaurea*) in the patient's serum, according to the manufacturer's instructions.

Plant material

Stellaria media (L) Vill. (Caryophyllaceae) was grown wild in Vojvodina (Serbia, Yugoslavia) and identified according to Gajic (9). Leaves, stems, and flowers from reproductive shoots were harvested in November, dried and stored until use.

Essential oil analysis

The essential oil was isolated by the hydrodistillation European Pharmacopoeia method (10, 11), using *n*-hexane as collecting solvent. The hexane

extract obtained was dried over anhydrous sodium sulfate and decanted. Hexane was evaporated under reduced pressure and the oil yield was measured. A soluble dilution of the oil in hexane (10 mg/mL) was analyzed by thin layer chromatography.

Thin layer chromatography (TLC)

20 µg of essential oil solution, associated with reference compounds (*Eucalyptus citridora* L.), were applied to the silica gel 60F₂₅₄ precoated TLC plates (Merck, Darmstadt). Plates were developed in solvent system: benzene/ethyl acetate (95:5), and sprayed with: vanillin/sulfuric acid reagent, VS (12). After spraying, the plates were heated for 10 min at 100°C, and evaluated in visible light. Compounds were identified by comparing their R_f values and colours with reference substances.

Results

Patch and photopatch testing

In May 1995, the first PT and PPT with fresh leaves of the plants were carried out, 5 weeks after complete resolution has been obtained. Strongly positive eczematous PT reaction and photoaggravation were obtained to common chickweed (*Stellaria media*, serb. mišovkinja Caryophyllaceae) and dandelion (*Taraxacum officinale*, serb. maslačak Compositae) (Table 1) (Fig. 1). Eczematous response was also obtained to white clover (*Trifolium repens*, serb. bela detelina Leguminosae), and field milk thistle (*Sonchus arvensis*, serb. poljska gorčika Compositae) (Table 1) (Fig. 2), allantolactone, usnic acid (Table 2) and Pinaceae tars and balsams: juniper tar, pine tar, storax, spruce balsam, Venice turpentine (Table 3). By the 4-day reading a typical EM rash had commenced. Target lesions surrounding patch test sites had the same haemorrhagic centres as those seen on admission (Fig. 3).



Fig. 1. Photo-aggravation to dandelion (serb. maslačak), and to common chickweed (serb. mišovkinja).

Table 1. Patch and photopatch testing with fresh leaves

Plant (fresh leaf)	Photopatch		Patch	
	D2	D3	D2	D3
<i>Fagopyrum dumetorum</i> (Polygonaceae)	–	–	–	–
<i>Taraxacum officinale</i> (Compositae)	++	++	–	+
(Dandelion-maslačak)				
<i>Stellaria media</i> (Caryophyllaceae)	++	++	+	+
(Common chickweed-misovkinja)			–	
<i>Rosa gallica</i> (Rosaceae)	–	–	–	–
(Rose-ruza)				
<i>Trifolium repens</i> (Leguminosae)	–	+	++	++
(White clover bela detelina)				
<i>Sonchus arvensis</i> (Compositae)	–	+	++	++
(Field milk thistle, poljska gorčika)				
6-Methycoumarin	–	–	–	–



Fig. 2. Eczematous response to white clover (serb. bela detelina) and to field-milk thistle (serb. poljska gorčika).



Fig. 3. 4 days after patch tests applied.

Control tests performed in 11 atopics with plants that had elicited an allergic patch test reactions were all negative, except for 1 doubtful PPT reaction to common chickweed. No EM reaction was seen in any of the control subjects.

In February 1998 and in January 2000, she had further acute EM eruptions (Fig. 4). A further relapse occurred in February 2001. She developed classical target lesions with haemorrhagic centres on the malar region of the face, forearms and backs of her hands, which were quite similar to those seen in 1995. It is worth mentioning that neither blistering nor eczematous lesions had ever been seen on her skin.

In April 2000, the patient was retested. PT and PPT with common chickweed and dandelion (fresh leaves) showed a positive photopatch test to com-

mon chickweed only. In April 2001, repeated PT and PPT to common chickweed and dandelion gave an eczematous response with photoaggravation to both plants.

Phototests

Phototests showed a normal MED-A (greater than 20 J/cm^2), and a normal MED-B (greater than 90 mJ/cm^2).

Intradermal tests

Positive intradermal tests (in comparison to negative control – mean diameter 0 mm) were obtained with mixed weed pollens (mean diameter 15 mm),



Fig. 4. January 2000 – airborne distribution.

mixed grass pollens (mean diameter 10mm), mixed tree pollens (mean diameter 10mm), *Dermatophagoides pteronyssinus* (mean diameter 15mm) and house dust (mean diameter 10mm).

Specific IgE level in serum

The specific IgE antibodies to mixed weed pollens yielded a CAP class 1 (0.60 KUL/L).

Essential oil analysis

The essential oil was isolated from dried leaves, stems and flowers of *Stellaria media* (L.) Vill, at a concentration of 0.019%.

Thin layer chromatography

The essential oil fractions that had been isolated from the TCL plate were identified as: borneol (2), menthol (3), linalool (4); 1,8-cineole (6); epoxy-dihydro-caryophyllene (8); monoterpene alcohol-es-

ter (9); caryophyllene (10); fractions labelled as (1), (5) and (7) were not identifiable.

Discussion

Contact erythema multiforme (CEM) represents a rare noneczematous manifestation of allergic contact sensitivity (3). An acute Type-IV hypersensitivity mechanism involving cytotoxicity has been proposed (7). The offending agent may be a powerful sensitizer or a sensitizer coming into contact with the skin at high concentration or repeatedly (6). In generalized forms, sufficient allergen must be absorbed percutaneously to form immune complexes and circulating antibody, with subsequent deposition of immune complexes in vessel walls (type-III, or 'id'-like reaction) (6, 13).

The immune processes involved in EM induced by topical sensitization and typical (postherpetic) EM appear to be identical, with focal epidermal expression of ICAM-1 (panepidermal in CEM, and basal and suprabasal in classic EM), as well as HLA-DR molecules on keratinocytes, and the same immunophenotype of lymphocytes infiltrating the epidermis and dermis (CD2+, CD3+, CD5+, CD8+, CD69+, LFA-1+, Mac 1+, p150.95+; LFA-3+) in both conditions (14). Epidermal ICAM-1 and HLA-DR molecules regulate immune processes mediated by HECA-452 + T-ly (CLA + Tly). Further on, the influx of these skin-homing activated memory T-cells would give rise to the dermal and epidermal damage in both EM and CEM reactions, irrespective of their aetiology.

An increased number of epidermal Langerhans

Table 2. Patch testing with plants, woods – Trolab®

Allergen	D2	D3
Alpha-pinene	–	–
Dipentene (<i>d</i> -limonene)	+	+
Alantolactone	–	++
Usnic acid	++	+
Atranorin	+	+
Arnica tincture	+	+

Table 3. Patch testing with tars, balsams – Trolab®

Allergen	D2	D3
Pix lithanthracis (coal tar)	–	–
Pix betulae (birch tar)	+	+
Pix fagi (beech tar)	–	–
Pix oxycedri (juniper tar)	+	–
Pine tar	+	–
Storax	+	–
Balsam of pine	–	–
Balsam of spruce	+	–
Balsam of tolu	–	+
Venice turpentine	+	–

cells (LC) and CD4 + cell infiltration were found in the peripheral elevated erythematous areas, while a decreased number of epidermal LC and CD8 + cell infiltration were observed in the central erythematous or purpuric disc area. Specific CD8+ Tly attack on keratinocytes results in keratinocyte apoptosis and cytokine production, especially TNF- α (1).

The severity of the EM reaction induced by contact allergens varies from mild erythema localized to the area of contact, through dissemination with 'id'-like topography, to generalized EM, and toxic epidermal necrolysis.

It has been noted that EM may occur without an eczematous component (2), concurrently with acute allergic contact dermatitis (13), or during resolution of acute allergic contact dermatitis (abrupt withdrawal of systemic corticosteroid treatment) (15). EM represented the only lesions our patient ever had. Neither blistering nor eczematous lesions (except during PT and PPT) have ever been seen on her skin. A biopsy was not performed because the patient refused it. In some cases of CEM where biopsies have been performed, they have been reported to be indistinguishable from typical EM (3, 13, 14). A diagnosis of EM was made given the characteristic clinical target lesions. With regard to the clinical presentation, with no personal or family history of atopy, the patient was considered as nonatopic, despite the positive intradermal tests to common inhalant allergens and the specific IgE antibodies to mixed weed pollens CAP class 1 in the serum.

A diagnosis of CEM in our patient was confirmed by positive patch testing. In order to avoid false-positive irritant responses, control PT and PPT was conducted on 11 atopic patients. Except for 1 doubtful PPT reaction to common chickweed, none of the control subjects showed any allergic or irritant reaction, nor was there any reported case of EM.

A recurrence of EM 4 days after patch test application, in the presence of more than 1 strong positive reaction, raised 2 crucial questions: what to do, and what to think about? The answer to the former was sequential retesting, which the patient, at the very beginning refused, being afraid of severe relapse. With regard to the multiple positive PT with tars and balsams, excited skin syndrome was taken in consideration, but excited skin syndrome has never been related to EM, and so presumably did not occur (3, 6). For pseudo-cross reactivity, the finding of delta-3-carene, the principal allergen of Pinaceae-turpentine in Ambrosia Compositae, directs attention to Compositae terpenoids. Terpenes are plant substances that can produce CEM (16). The true terpenes are found

in the essential oils of many plants, and in plant products such as resins and balsams. Some of them (e.g. delta-3-carene, borneol, menthol, linalool, limonene and cineole) are known contact sensitizers (3). Our patient was sensitized to terpenes, with positive PT to limonene and to sesquiterpene lactone alantolactone. The main allergenic constituents of Compositae plants are the sesquiterpene lactones (SLs). In recent years, a mixture of 3 SLs (alantolactone eudesmanolide, dehidrocosteruslactone guaianolide, and costunolide germacranolide) has been proposed as an adequate screen for Compositae allergy. Allergic contact dermatitis (ACD) from SLs may be airborne or from direct or indirect contact with plants. An EM eruption caused by Compositae plants has previously been described from the use of mugwort (*Artemisia vulgaris*) as a herbal medicine (17), and following ACD due to contact with a 'herbal bag' that contained elecampane (*Inula helenium*) (18). Elecampane contains a number of SLs, among which alantolactone and isalantolactone are known sensitizers. 2 of the 4 offending plants in this study belong to the Compositae family, dandelion (*Taraxacum officinale*) and field-milk thistle (*Sonchus arvensis*), both containing SLs (Table 4), the latter never having been reported to cause contact sensitization.

Assessing Compositae dermatitis, one has to think about airborne allergy (19, 20), photosensitivity (persistent ICAM-1 expression on keratinocytes from the exposed skin) (21), photoallergy (8), phototoxicity (polyacetylenes, thiophenes), and the presence of contact allergens other than SLs (oxythymol-diesteres, thiophenes) (22).

The ability of the SL mix to detect all cases of Compositae allergy within geographical area has been questioned, since ACD from Compositae can be missed if additional testing with Compositae plants and/or their extracts is not carried out. The SL mix failed to detect 38% of Compositae-sensitive patients in one series, and testing with dandelion extract alone detected 73% of these SL-mix-negative patients (23). The relevance of such reactions could be established in all the patients (23). There are sporadic reports of ACD and airborne ACD caused by dandelion (24). However, recent studies suggest that dandelion may be under-reported as a cause of weed dermatitis (7, 8, 23–27). There is no report of CEM caused by dandelion. The allergen in dandelion has been identified as taraxinic acid 1'-O- β -glucopyranoside, a germacranolide SL linked to β -glucose via an ester linkage. The failure of SL mix to detect dandelion allergy in some cases has previously been reported (8, 23, 24). It has been suggested that this might be due to the presence of the glucose residue on the

Table 4. Offending plants that elicited an eczematous response

Name	General botanical features	Treated as	Chemical compounds	Offending agent
Common chickweed (<i>Stellaria media</i> Caryophyllaceae)	Weed Fragile, branched stem plant White flowers with 5 sepals and 5 noched petals	A salad (whole plant) External poultice (fragile veins, roseola) Eyewashes (juice)	Saponin Flavones Coumarins Tannin	Unknown
Dandelion (<i>Taraxacum</i> Glucopyranoside of taraxinic <i>officinale</i> Compositae)	Weed Thick root with bitter latex Sessile leaves Yellow ligulate flowers Latex in whole plant	A salad Clears the skin Fades freckles (liquid from ligule)	Taraxacin (phytosterol) Essence Choline Tannin	acid (sesquiterpene lactone)
White clover (<i>Trifolium</i> <i>repens</i> Leguminosae)	Weed Erect, branched stem Leaves with 3 oval leaflets White, dense, round cluster of flowers	Mouthwash Leg ulcers wet compresses	Resin Essence Flavones Tannin Phytoestrogen	Unknown
Field-milk thistle (<i>Sonchus arvensis</i> Compositae)	Weed Top branched pilose stem Pinnate leaves with spiny lobes Yellow ligulate flowers born in heads White bitter latex in whole plant	Resins Flavones Glucosides	Essential oil Terpenes	Sesquiterpene lactone

dandelion antigen. Despite its clinical importance, dandelion has been reported to be a weak sensitizer in the guinea pig maximization test (28). Our patient had a clinically relevant PT reaction to dandelion, with photoaggravation on PPT. She also reacted to alantolactone and to chemically unrelated haptens incriminated in lichen sensitivity, usnic acid and atranorin, showing multiple specific sensitivity (29). Usually, no significant difference is found between PT and PPT to Compositae plants and their extracts, and PPT has failed to demonstrate any photoallergic or phototoxic reactions of clinical importance in Compositae sensitivity (8, 30). This is in agreement with our results, since neither photoallergic nor phototoxic PT reactions to the plants in question, including 6-methylcoumarin, was observed. Contact allergy to dandelion may be an important part of the photosensitivity dermatitis and actinic reticuloid (PD/AR) syndrome, since 24% of the PD/AR patients showed a positive PT to dandelion oleoresin extract, and all of them reacted to SL mix (25). The phototoxic effects of Compositae plants and the difficulty in interpreting presumed positive PPT results using plant extracts in patients with persistent photosensitivity have been described, but there was no photosensitivity in our patient.

Compositae plant contact and airborne contact allergy was found to be an important factor in patients with summer exacerbation of dermatitis even without photosensitivity. It has been proposed that, of patients with suspected photoallergy, 33% would not be given the correct diagnosis if airborne allergens such as plants and pesticides were

omitted from testing (8). Though our patient avoided direct contact with the offending plants, she could not avoid airborne contact dermatitis. EM lesions involved exposed skin. Though it has been considered highly characteristic for the recurrent form, EM in a photodistribution has rarely been reported (31). It is amazing how precisely the same areas (e.g. left zygomatic) were affected during each recurrence. Recent studies have demonstrated that ICAM-1 expression on keratinocytes in the skin exposed to photoactivated substances (such as Compositae extracts) may facilitate the adhesion of lymphocytes to the epidermis, thus helping to explain this apparent site specificity in the flare of the eruption (21, 31). Air-exposed, rather than sun-exposed skin, such as that of the upper eyelids, was also involved (Fig. 4).

In the presence of airborne contact allergy, recent studies found potential allergens among emitted monoterpenes, such as α -pinene, limonene and linalool (15). The presence of linalool (among other monoterpenes detected in the essential oil fraction) in common chickweed was detected by the TLC system used in this study. The detailed analysis of common chickweed essential oil done by gas chromatography with mass spectrometry (GCMS) methods, confirmed the presence of constituents identified by TLC (results yet unpublished). Common chickweed (*Stellaria media* Caryophyllaceae) was the only plant specifically suspected by the patient. It is a medicinal plant mentioned in several pharmacopeias (32, 33), but its chemical composition is hardly known. Among secondary biomolecules in *Stellaria media*, saponins, coumarins, flavonoids and tannin

have been reported (34). Up to now, no data on essential oil in *Stellaria media* have been published. Since several monoterpenes are proposed to be among the major plant allergens, we assume that essential oil in *Stellaria media* may be (at least partly) responsible for CEM in our patient. Eczematous response with photoaggravation was obtained on 2 occasions, the negative PT obtained in April 2000 being considered false-negative (29). There is no report of *Stellaria media* allergy in the English-language literature. Regarding literature data (24, 29, 35) and our own results from the preliminary investigation, in which we found out that the process of drying did not affect significantly either quantity or quality of essential oil in *Stellaria media*, we isolated the oil from air-dried plant material in this study.

White clover (*Trifolium repens* Leguminosae) elicited an eczematous response on PT, while neither allergic nor irritant reactions on PT and PPT were obtained in controls. No such report has been reported in the English-language literature to date.

As was mentioned previously, the patient refused sequential retesting at the very beginning. In April 2000, she was retested with common chickweed and dandelion, with positive PPT to common chickweed only, but in February 2001 repeated PT and PPT with these 2 plants showed an eczematous response with photoaggravation to both plants, as was seen in 1995. Even if she was sequentially retested, it might still not resolve the question as to which plant actually caused EM. In contrast to Friedman & Perry, who observed the recurrence of EM when subsequently retesting the patient to one of the PT-positive allergens (NiSO₄) (5), O'Donnell & Tan failed to detect any flare of EM-type lesions in association with sequential retesting to colophonium and fragrance mix (6). Patch testing in patients with EM may produce more than 1 strong positive reaction, when it becomes impossible to be certain whether the secondary eruption was induced by one or other agent(s), or by some or all acting simultaneously (3, 6).

Conclusion

Erythema multiforme developed in this patient due to contact with weeds, aggravated during occupational exposure, and recurring during patch testing. As far as the world literature is concerned, this is only the 4th report of erythema multiforme in association with patch testing.

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