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Contact dermatitis to *Dendranthema morifolium* (Ramat)

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Key words: airborne allergic contact dermatitis; *Dendranthema morifolium*; *Chrysanthemum parthenium*; *Chamomilla romana*; *Helianthus annuus*; *Dittrichia viscosa*; pyrethrum; *Frullania dilatata*; *Laurus nobilis*; *Magnolia grandiflora*; sesquiterpene lactones. © Munksgaard, 1996.

Contact dermatitis from chrysanthemum is well-known and common among florists or horticulturalists (1-3). Nevertheless, the identity and correct nomenclature of the plant responsible is frequently the subject of confusion, as stressed by Schmidt (4). Cultivar chrysanthemums of florists or autumn-flowering chrysanthemums belong to the genus described by Des Moulins (4): they are perennial, of hybrid origin and do not have a winged corolla tube. The genus *Chrysanthemum* includes annual species, mainly wild, in which the corolla tube is laterally expanded and 2-winged.

Case Report

A 66-year-old horticulturalist was observed in November with acute eczema on exposed areas, mainly the hands and forearms, which had started 2 days after cutting flowers of *Dendranthema morifolium* (Ramat) and staying for a few hours in a cemetery, where many graves were decorated with *Dendranthema*. Remission was seen in 1 week on treatment with topical and systemic corticosteroids.

For 10 years, she reported outbreaks of eczema, initially only on areas of direct contact with *Dendranthema*, when she cultivated or cut flowers of these plants, and more recently, spreading to the face and neck. Remaining

in an environment rich in *Dendranthema* elicited outbreaks of eczema on exposed areas, and sometimes also rhinitis and conjunctivitis.

Patch tests were performed 2 months later with the GPEDC standard series, plants and woods series, samples of leaves and flowers of *Dendranthema morifolium* and its extracts¹ at 1% pet., with the following positive reactions at 2 and 4 days: thiuram mix 1% +++ (past relevance rubber gloves 20 years ago), sesquiterpene lactone mix 0.1% (Chemotechnique) +++, *Chrysanthemum parthenium* 1%¹ ++, pyrethrum 2% pet. (Trolab) ++, *Chamomilla romana* 1% pet. (Chemotechnique) +++, *Dittrichia viscosa* 0.1%¹ +++, *Helianthus annuus* 1% pet. (Trolab) ++, *Frullania dilatata* 0.1% pet. ++, *Magnolia grandiflora* 1%¹ ++, laurel oil 2% pet. (Trolab) ++, *Dendranthema morifolium*, leaves, flowers and its extracts¹ +++. Prick and 20-min patch tests with the flowers and leaves of the plant, wetted with physiological saline solution, were negative.

Comment

Our patient had airborne allergic contact dermatitis from *Dendranthema morifolium*, with strongly positive patch tests to the plant and its extracts. Positive reactions were also seen to sesquiterpene lactone mix and other Compositae extracts: *Chrysanthemum parthenium*, pyrethrum, *Chamomilla romana*, *Dittrichia viscosa*, *Helianthus annuus*, *Frullania dilatata*, *Laurus nobilis* and *Magnolia grandiflora*, all containing sesquiterpene lactones.

¹Prepared at the Clínica de Dermatologia dos Hospitais da Universidade de Coimbra, according to the method described by Hausen (5).

The main *Dendranthema* allergen is artaglasin A (6), but alantolactone (7), chlorochrymoryn and chrysanthemins A and B (8) have also been identified. These positive reactions may be interpreted as cross-reactions (9, 10). Positivity to the mix of sesquiterpene lactones is despite the studies of Green (11), where only 35% of the patients with clinically relevant Compositae allergy had a positive patch test to the lactone mix.

Although our patient reported symptoms immediately on contact with the plant, the negativity of immediate tests to *Dendranthema* did not confirm the suggestion of immediate sensitivity, previously reported by Tanaka et al. (12).

Acknowledgement

We are grateful to Professor Jorge Paiva, Instituto do Jardim Botânico da Universidade de Coimbra, for identifying the plant.

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Diphenhydramine: a forgotten allergen?

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Key words: allergic contact dermatitis; antihistamines; diphenhydramine; medicaments; Pellisal-Gel[®]. © Munksgaard, 1996.

In the past, antihistamines were widely used in topical medicaments to relieve itching, and also as antiallergics. One of the most popular was diphenhydramine (Benadryl[®]), even though it caused allergic contact dermatitis (4-6, 8, 10). In the course of time, antihistamines were largely replaced by corticosteroids.

Case Report

A 59-year-old woman applied Pellisal-Gel[®], a diphenhydramine-containing cream, to an insect bite on her right upper arm. 2 days later, she presented with a vesicular dermatitis on the site of application.

She was first patch tested with the German standard series (Hermal) and Pellisal-Gel[®] (Table 1), and later with

the various components of Pellisal-Gel[®], provided by Woelm Pharma, the manufacturer (Table 2), which revealed a ++ reaction to diphenhydramine, possibly a result of previous use of Diabanyl-Gel[®], widely prescribed in the former GDR for insect bites and itching dermatoses.

The origin of sensitization to mercury and cetylstearyl alcohol remains unexplained.

Table 1. Patch test results - standard series (Hermal)

		D2	D3
mercury-(II)-amidechloride	1% pet.	++	++
cetylstearylalcohol	20%pet.	++	++
Pellisal-Gel [®]	as is	++	++

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