

Allergic contact dermatitis caused by *Hedera helix arborescens* and not by *Hedera helix L.*

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Case Report

A 48-year-old non-atopic woman presented in September 2011 with an acute oedematous and vesiculobullous eruption in a linear pattern on both arms and legs (Figs. 1 and 2). Prior to the development of the lesions, she had worked in her garden handling plants, using gloves but with bare arms and legs. She had not applied a topical sunscreen product. Treatment with a betamethasone-containing ointment gave complete resolution of the lesions.

The patient was known to have a history of contact allergy, confirmed by positive reactions to octocrylene and cinnamyl alcohol (2010), and *Myroxylon pereirae*

(balsam of Peru) (1999), as well as positive photopatch test reactions to benzophenone 3 (2010), ketoprofen, suprofen, and alclofenac (1999).

We tested parts of the contacted plants, including *Hedera helix*, tested as is and applied on Micropore® (3M Health Care, Borken, Germany), and fixed with Mefix®



Fig. 1. Clinical lesions on the arms suggestive of a phytodermatitis.

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Fig. 2. Clinical lesions on the legs suggestive of a phytodermatitis.



Fig. 3. Positive reactions to *Hedera helix arborescens*, both on the UVA-exposed and unexposed sites.

(Mölnlycke Health Care, Göteborg, Sweden); however, no positive reactions were observed.

We considered a possible phytophotodermatitis, although this was unlikely, as the lesions were also present on anatomical shadow sites, or the possibility of not having tested the correct plant. Hence, patch tests with the plants were again performed 4 weeks later, both with and without ultraviolet (UV)A irradiation (5 J/cm²) and 2 day occlusion. A strong positive reaction was observed

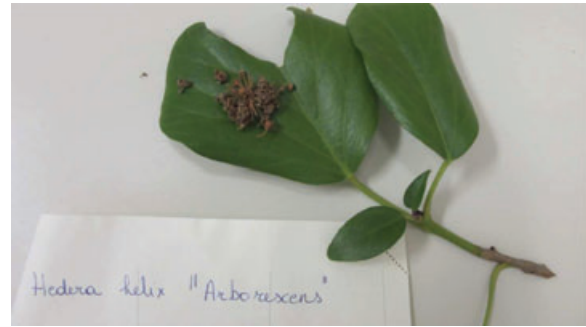


Fig. 4. *Hedera helix arborescens*.

to *H. helix arborescens* (as identified by their landscaper) after 48 hr on both test sites (before UV exposure) and also at 96 hr (Fig. 3). The patient then recalled that she had not brought in this plant the first time, as it was grown by the neighbours but had also invaded the patient's garden. *H. helix* (common ivy) again tested negatively.

Discussion

H. helix is a common species of an evergreen climbing plant native to Europe and western Asia, and is known as a cause of allergic contact dermatitis (1, 2). The genus *Hedera* belongs to the Araliaceae (ivy) family. The plant can remain creeping on the ground, or climb on surfaces such as trees, rocks, or fences. *H. helix arborescens* (Fig. 4) is a shrub form of ivy, and is an adult-stage plant of *H. helix* that will not climb or crawl.

In 1987 (3), Hausen et al. isolated polyacetylene compounds from common ivy: falcarinol, the main allergen, and didehydrofalcarinol. Both are powerful irritants and moderate sensitizers. There is a variable amount of falcarinol antigen in the plant material. When the concentration of falcarinol in ivy plants is high, there is a risk of false-positive reactions when patch testing with plant material 'as is'.

The fact that our patient reacted to *H. helix arborescens* but not to *H. helix* may be explained by the former, as used in our test, containing a higher concentration of the allergen falcarinol than the latter, or containing a different allergen; the latter seems less likely, as both plants originate from the same family and species. Unfortunately, falcarinol was not available for testing.

References

- 1 Paulsen E, Christensen L P, Andersen K E. Dermatitis from common ivy (*Hedera helix* L. subsp. *helix*) in Europe: past, present, and future. *Contact Dermatitis* 2010; **62**: 201–209.
- 2 Jones J M, White I R, White J M, McFadden J P. Allergic contact dermatitis to English ivy (*Hedera helix*) a case series. *Contact Dermatitis* 2009; **60**: 179–180.
- 3 Hausen B M, Bröhan J, König W A, Faasch H, Hahn H, Bruhn G. Allergic and irritant contact dermatitis from falcarinol and didehydrofalcarinol in common ivy (*Hedera helix* L.). *Contact Dermatitis* 1987; **17**: 1–9.