

# Occupational allergic contact dermatitis to *Hydrangea* in an Italian florist

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## CASE REPORT

A 49-year-old non-atopic man presented at our department with itchy hand eczema (Figure 1). Physical examination revealed severe scaling, xerosis, and fissures of the dorsum of his right hand and first, second, third, and fourth fingers; his left hand was affected only on the third finger. The patient reported that his hand eczema always disappeared during time off work and always recurred within a few days after returning to work. He had been employed since 2010 as a florist, but stated that the skin lesions had appeared when he started processing and handling *Hydrangea*. He denied the use of any protective device. Six weeks after the resolution of dermatitis, patch tests were performed with the SIDAPA (Società Italiana Dermatologia Allergologica Professionale Ambientale) baseline series (Euromedical, Calolziocorte, LC, Italy), and with the wetted and pounded leaves, petals, and stem of *Hydrangea*. The patch tests were applied on the back and left in occlusion for 2 days, using the AI Test (Euromedical) on Scanpor Tape (Norgesplaster, Vennesla, Norway). Readings were performed on day (D)2, D4, and D7<sup>1</sup> and showed a positive reaction to *Hydrangea* leaves and petals (Figure 2). Twenty healthy volunteers were patch tested with wetted and pounded leaves and petals of *Hydrangea* with negative results. The patient did not have any recurrence of the dermatitis thanks to the subsequent adoption of protective measures when processing *Hydrangea*.

## DISCUSSION

*Hydrangea*, also known as Hortensia, is a genus of 70–75 species of flowering plants native to Asia and the Americas, and imported to Europe since 1970. It is characterized by a white flower in most species; blue, red, pink, light purple, or dark purple flowers can develop depending on the pH of the soil.<sup>2</sup> It is very popular as a garden and

indoor plant, grown for its large flowerheads. It is frequently used in Italy, both as a floral arrangement and as a dried flower.

The prevalence of occupational allergic contact dermatitis (ACD) to plants might be underestimated, since it is often misinterpreted as an irritant reaction. *Hydrangea* is a very popular flower worldwide. It is characterized by the presence of a strong sensitizer that is easily obtained from the leaves, stems, and petals by extraction with diethyl ether.<sup>3</sup> The sensitizing compound of *Hydrangea* was noted by Broers<sup>4</sup> in 1926, isolated in 1982,<sup>5</sup> and finally identified as hydrangenol (3,4-dihydro-8-hydroxy-3,4-hydroxyphenyl-isocoumarin).<sup>6</sup> Despite this background, only a few cases of ACD in response to *Hydrangea* have been reported in the literature.<sup>7–9</sup> To our knowledge, ours is the first description of occupational ACD in response to *Hydrangea* in Italy. Contact allergy to *Hydrangea* is mainly occupational because it requires close, repeated contact with its leaves or petals.<sup>8</sup> Clinically, it usually appears with eczematous lesions of the area of the hands used to process the flower, often as chronic dermatitis with scaling, fissures, and hyperkeratosis. Of interest, in our patient, the distribution of the skin lesions was related to the handling and processing technique of *Hydrangea* (Figure 1). This flower has a stem 75–100 cm long; our patient reported that the hand most affected was the one holding the stem (thumb, index, and middle fingers) for cutting. In view of the clinical picture of the skin lesions, ACD in response to *Hydrangea* can be difficult to suspect and diagnose. Our case highlights the importance of considering flowers as the cause of contact allergy, and the key role of patch tests performed with wetted and pounded leaves, petals, and/or stem. It should be remembered, however, that patch tests with flowers have several pitfalls because the presence of sensitizing compounds, such as hydrangenol in *Hydrangea*, can differ because they are related to the cultivation methods and harvesting period.<sup>5</sup>



**FIGURE 1** Peculiar distribution of the skin lesions related to the handling and processing technique of *Hydrangea*

## CONFLICTS OF INTEREST

The authors declare no potential conflicts of interest.

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**FIGURE 2** Positive patch test results in response to *Hydrangea* leaves and petals

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