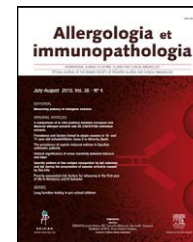




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RESEARCH LETTER

Rhinoconjunctivitis-asthma due to sensitisation to gladiolus

To The Editor:

Cases of occupational sensitisation due to plants are infrequent, although in recent years an increase of allergy to different ornamental plants has been seen among farmers, gardeners and florists. Less frequent are the cases of sensitisation to indoor plants without colourful flowers, such as *Ficus benjamina*,^{1,2} which perhaps is the most reported one. First of all, it has been described as a cause of occupational allergy, and later, as an indoor allergen.

We report the case of a 49-year-old farmer, who cultivates gladioli between August and October. Since 12 years ago, each time he collects the gladioli at the end of October he refers: ocular itch with tears, nasal itch, sneeze and rhinorrhea, cough, wheezing and shortness of breath, which improves with the use of inhaled formoterol.

Since two years ago, these kinds of symptoms have been continuous and worse on windy days and with house dust. He has never had cutaneous symptoms while handling gladioli. With regard to his personal background, until 4 months before he was a smoker, and smoked about 10 boxes per year.

The physical examination was completely normal on each of the patient's visits. After obtaining informed consent, different tests were carried out: skin prick tests were performed with a battery of the common inhalant allergens in the Murcia area (Leti SA, Madrid, Spain). Histamine phosphate at 10 mg/ml and normal saline were used as positive and negative controls, respectively. The response was read 15 min after the prick, and the results were expressed as mean wheal diameter (mm).

A wheal diameter 3 mm or greater with erythema, compared with the saline control, was defined as a positive reaction. Skin tests were examined again 6 h later to assess a possible late skin reaction (erythema and swelling). Prick-prick test and scratch test with gladiolus (stalk, leaf and flower) provide by the patient were also carried out.

Skin tests were positive to house dust mites (5 mm.); olive (5 mm.); salsola (6 mm.); and chenopodium (6 mm) pollen.

Prick-test with *Tetranichus Urticae*: negative.

Prick-Prick with gladiolus leaf and flower: negative.

Prick-Prick with gladiolus stalk: positive.

Scratch test with gladiolus stalk, flower and leaf: positive
Total IgE: 1030 UI/ml
Specific IgE: Total serum IgE was measured by the Pharmacia CAP System IgE
FEIA (Pharmacia, Uppsala, Sweden) according to the manufacturer's instructions.

A result higher than 0.35 kU/l was regarded as positive: *D. Pteronyssinus* 11.5 kUA/l (class 3); Olive 1.02 kUA/l (class 2); Salsola 12.2 kUA/l (class 3); and Chenopodium 6.29 kUA/l (class 3).

Gladiolus stalk, flower and leaf were lyophilised and then extracted for 90 minutes at 4 °C with sodium phosphate. Following centrifuging, the supernatants were filtered and stored at –20 °C. The resulting protein extracts were separated by Tricine-Sodium dodecylsulphate polyacrylamide gel electrophoresis (Tricine SDS-PAGE) in gradient gels, 10–20% acrylamide, and then transferred to nitrocellulose. After immunoblotting, the patient's serum recognised in the three gladiolus extracts the same band of 70 kDa. Other bands of 52 and 21 kDa were also detected in flower and leaf (Fig. 1).

We report the case of a patient with sensitisation to gladiolus proteins who developed allergic respiratory symptoms upon exposure to these antigens by inhalation.

Immunological studies showed that the symptoms were due to IgE-mediated sensitisation to allergens present in flower, leaf and stalk of gladiolus.

On the basis of skin tests, specific IgE and immunoblot results, we identified three proteins of 70, 52 and 21 kDa. as the main allergens causing sensitisation in the patient.

According to the Linnaeus classification system, *Gladiolus* belongs to Iridacea family, like *Freesia* and *Lapeyrousia*. There are about 90 different species, which are cultivated outdoors and also in greenhouses. Among them, the most popular, due to their colourful flowers, are *Gl. psittacinus*, *Gl. cardinalis*, *Gl. blandus* and *Gl. saundersii*.

The most frequent symptoms reported with ornamental plants are cutaneous, with or without respiratory manifestations. In our case, the patient never had dermatological problems while exposed to gladiolus. Twardowschy³ et al. described an unusual case of a woman with trigeminal sensory neuropathy and facial contact dermatitis due to *Anthurium sp.*, an indoor ornamental plant that contains calcium oxalate crystals. In 1980, Gleeson⁴ reported an antigenic study of the gladiolus, finding a protein of 220 kDa with affinity to IgG. Van Toorenbergen⁵ describes the

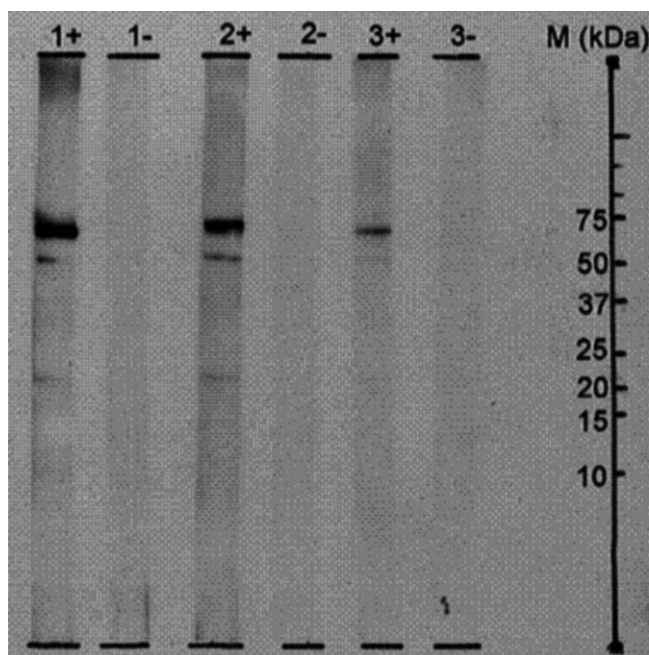


Figure 1 IgE-Immunodetection over an extract of gladiolus flower (1), leaf (2), and stalk (3).

Lanes (–): negative control incubated with buffer; Lanes (+): patient's serum. Molecular weight markers are indicated in kDa.

case of a florist with rhinoconjunctivitis and asthma due to sensitisation to *Freesia*, which is from the same family as the gladiolus. Ordoqui⁶ reported a case of a florist, who has worked with plants for 18 years. He refers respiratory symptoms upon exposure to gladiolus and carnation, with positive prick test to these plants, specific IgE by ELISA on patient serum, and positive bronchial challenges. The immuno-blotting showed two proteins of 40 and 47 kDa on carnation extract, but nothing for the gladiolus extract.

In order to determinate the prevalence of occupational asthma and sensitisation to workplace allergens in greenhouse flowers and/or ornamental plant growers, Monsó⁷ et al. studied a population of 39 growers, and found three cases of occupational asthma. The growers were sensitised

to various moulds in one case; to *gladiolus spp.* in the second; and to *Aspergillus* and different flowers (including gladiolus) the patient cultivated in the third.

In summary, we present a case of rhinoconjunctivitis and asthma due to sensitisation to gladiolus proteins, and on the basis of in vitro test, we identified three proteins of 70, 52 and 21 kDa. as the main allergens causing sensitisation in this patient, data which, to the best of our knowledge, have never been reported.

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Anaphylaxis caused by honey ingestion in an infant

To the Editor,

Anaphylaxis is an emergency state and its prevalence has been increasing during childhood, especially in industrialised countries. The most common causes of anaphylaxis are foods, drugs and hymenoptera venom in children.¹ Anaphylaxis caused by honey is a very rare condition. We reported a case of an infant with anaphylaxis occurred by ingestion of honey.

A 14-month-old boy presented with anaphylaxis after honey ingestion. He was given as much as one teaspoon of honey for several times until he was six months old. When he

was 14 months old, his mother gave him approximately five teaspoons of honey. After five minutes, his lips were swollen and within 10 minutes urticaria, angio-oedema, cough and wheezing occurred. He was taken to a primary medical centre immediately. Systemic corticosteroid and antihistamines were administered. He was referred to an allergy centre for further evaluation.

He came to our hospital one week after the anaphylactic reaction. His physical examination and routine laboratory analyses were normal at admission. Previous history revealed that he had had acute urticaria when he was six months old without any identified aetiology which resolved spontaneously in a few days. His mother and grandfather both have perennial allergic rhinitis, asthma, and house dust mite sensitivity. Specific IgE against *Apis mellif-*