

on the tongue of a 4-year-old boy. *Pediatr Dermatol* 1995;12:51–52.

4. ARIAS J, FERNÁNDEZ-RIVAS M, PANADERO P. Selective fixed drug eruption to amoxicillin. *Clin Exp Dermatol* 1995;20:339–340.
5. JIMÉNEZ I, ANTÓN E, PICANS I, SÁNCHEZ I, QUIÑONES MD, JEREZ J. Fixed drug eruption from amoxicillin. *Allergol Immunopathol (Madr)* 1997;25:247–248.
6. LANDTHALER M, MICHALOPOULOS M, SCHWAB U, DORN M. Erythema Scarlatiniforme Desquamativum Recidivans Localisatum. *Hautarzt* 1985;36:581–585.

Anaphylaxis to red currants

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Key words: allergy; anaphylaxis; IgE; IgG; red currant.

● RED currant (*Ribes rubrum*) is a seemingly rare cause of anaphylactic reactions (1). We had the opportunity to perform allergy tests in a 47-year-old woman who suffered generalized urticaria, dysphagia, dyspnea, pruritus of the palms and soles, hypotonia, and tachycardia about 2.5 h after having consumed red currants. One month later, she developed generalized urticaria after eating black currant jam.

Skin prick tests were negative for a variety of foods including spices, but prick-to-prick tests with red currants and black currants were strongly positive. Total IgE was 103 kU/l (normal: <120 kU/l). Low concentrations of specific IgE antibodies (RAST class 1 or 2) were detectable for several spices, but not red currants or black currants. There were, however, readily detectable levels of IgG specific for red currants.

Although reports on IgG antibodies to dietary antigens are frequent (2),

demonstration of their pathogenetic relevance is still lacking (3, 4). The inability to detect red-currant-specific IgE could be due to the fact that excess IgG competitively inhibited IgE binding in the RAST. On the other hand, it is interesting to note that the second documented case of anaphylaxis to red currant with serologic data available also lacked detectable IgE levels and exhibited specific IgA and IgM antibodies instead (1).

In summary, this is, to our knowledge, only the second case of anaphylaxis to red currant documented by history, skin prick tests, and serology. Although specific IgG antibodies were detectable, we believe that these antibodies interfere with the *in vitro* detection of specific IgE and were not directly involved in the pathogenesis of anaphylaxis to red currants.

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References

1. KÜHL P, KALVERAM CM, GALL H. Anaphylaxie auf rote Johannisbeere. *Allergo J* 1997;7:17–19.
2. MARINKOVICH V. Specific IgG antibodies as markers of adverse reactions to foods. *Monogr Allergy* 1996;32:221–225.
3. BRUIJNZEEL-KOOMEN C, ORTOLANI C, AAS K, et al. Position paper. Adverse reactions to food. *Allergy* 1995;50:623–635.
4. WÜTHRICH B. Specific IgG antibodies as markers of adverse reactions to food. *Monogr Allergy* 1996;32:226–227.

Swiss chard-induced asthma

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Key words: allergen characterization; asthma; Swiss chard; vegetables.

● BELONGING to the Chenopodiaceae family, Swiss chard (*Beta vulgaris* L. *cicla*) is a vegetable widely used in Spain. Other members of this family are spinach, beet, and weeds such as chenopod (*Chenopodium album*) and salsola (*Salsola kali*), the pollen of which is allergenic.

Although hypersensitivity reactions to food are much more common after ingestion, food antigens can also induce symptoms through inhalation, particularly in occupational asthma. Asthma induced by inhaling the vapor of cooking vegetables has been described, but some clinical and immunologic aspects are still unknown.

Our patient was a 50-year-old woman who reported wheezy dyspnea within a few minutes of handling, cutting, or inhaling the vapor of Swiss chard cooked at home. She did not have cutaneous symptoms after contact with it, and was able to eat it without ill effect. She tolerated spinach and beet vapor and their contact or ingestion. She was a nonsmoker and was nonatopic.

The patient was studied in our allergy department. We performed skin prick tests with a battery of common aeroallergens, and with Swiss chard extract (20 mg/ml), spinach extract (20 mg/ml), and beet extract (20 mg/ml) and prick by prick tests with raw and boiled Swiss chard. We obtained a positive result for Swiss chard (raw, boiled, and extract), spinach extract, beet extract, and chenopod pollen extract.

The bronchial provocation test with

A positive bronchial provocation was obtained with an extract of Swiss chard.

methacholine revealed mild bronchial hyperreactivity (PC₂₀ 1.43 mg/ml). The bronchial provocation test with raw Swiss chard extract (20 mg/ml) was performed as previously described (1) and elicited a fall in FEV₁ of 30% from baseline and wheezy dyspnea 5 min after challenge (1:10 v/v). No late reaction was observed in PEF measurements.

Total serum IgE and specific IgE to spinach, beet, chenopod, salsola, and profilin (rBet v 1, rBet v 2) (Pharmacia CAP System IgE FEIA, Pharmacia Diagnostics, Uppsala, Sweden) were determined. Total serum IgE was 74 KU/l, and specific IgE determinations were all negative. We could not determine specific IgE to Swiss chard because the material is not commercially available.

We tried to carry out a histamine-release test with the antigens mentioned above by the automated fluorometric method of Siraganian and Hook, but it was not conclusive because the patient's serum did not release histamine with anti-IgE.

SDS-PAGE and IgE immunoblotting with Swiss chard, salsola, and chenopod pollen extracts were carried out (2). A band of a peptide of 42 kDa in Swiss chard extract was observed to bind with patient serum in an experiment; this binding band did not appear in chenopod or salsola extracts, nor in control sera, indicating specific IgE binding. We could not reproduce this result in further experiments, probably because the responsible epitope identified in our first assay was a conformational one, easily destroyed by the SDS-PAGE technique, making it difficult to reproduce this finding. Other authors (3, 4) have pointed out the great lability and instability of vegetable and fruit antigens, resulting in great sensitivity to physicochemical modifications.

We report a case of asthma, in which the reaction after specific bronchial provocation test confirmed the causative role of Swiss chard in the symptoms reported by the

patient. The positive skin prick test with Swiss chard and the immediate positive reaction after specific bronchial challenge suggest that the patient had developed type I hypersensitivity to the antigens in Swiss chard. The inconclusive result of the histamine-release test and the lack of commercial Swiss chard-specific IgE failed to confirm this mechanism.

There are only two earlier references in the literature dealing with Swiss chard-related asthma (1, 5), but, to the best of our knowledge, there has been no previous attempt at allergen characterization in Swiss chard. Moreover, in view of the inconclusive result of our immunoblot, we want to emphasize the difficulty of identifying allergens, especially in food hypersensitivity. Therefore, we think that more studies are needed.

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References

1. DELA HOZ B, FERNANDEZ-RIVAS M, QUIRCE S, et al. Swiss chard hypersensitivity: clinical and immunologic study. *Ann Allergy* 1991;**67**:487–492.
2. LAEMMLI UK. Cleavage of structural proteins during the assembly of the head of bacteriophage T4. *Nature* 1970;**227**:680–685.
3. BJÖRKSTÉN F, HALMEPURO L, HANNUKSELA M, LAHTI A. Extraction and properties of apple allergens. *Allergy* 1980;**35**:671–677.
4. ORTOLANI C, ISPANO M, PASTORELLO EA, ANSALONI R, MAGRI GC. Comparison of results of skin prick tests (with fresh foods and commercial food extracts) and RAST in 100 patients with oral allergy

syndrome. *J Allergy Clin Immunol* 1989;**83**:683–690.

5. PARRA FM, LÁZARO M, CUEVAS M, et al. Bronchial asthma caused by two unrelated vegetables. *Ann Allergy* 1993;**70**:324–327.

Hypersensitivity to *Viburnum rhytidophyllum*

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Key words: angioedema; urticaria; *Viburnum rhytidophyllum*.

● URTICARIA and angioedema may appear after ingestion of foods and drugs, or after contact with or inhalation of allergens (1). We

A case of possibly allergic urticaria and angioedema.

report a patient who was polysensitized to inhalant allergens and hypersensitive to the ornamental plant *Viburnum rhytidophyllum*.

P.A., an 18-year-old man, suffered urticaria, angioedema, and dyspnea whenever he was near a plant (*V. rhytidophyllum*) growing in his garden. This plant is a member of the Caprifoliaceae family and is not widespread. It has rough, bullous leaves that are whitish and dusty on the back.

The patient had no clinical manifestations of respiratory allergy and had normal C1INH levels and functions.

He underwent a full allergologic examination as follows:

- 1) Skin prick tests (SPT) with the common inhalant allergens and foods were done with a commercial SPT (Lofarma, Milan, Italy). The positive results are presented in Table 1.
- 2) A patch test (2) was done with the plant's leaves. The patch preparations were applied with Finn chambers on Scampor (Bracco, Milan, Italy)