

Occupational contact dermatitis to broccoli

GREENGROCERS are exposed to many different food allergens that can induce respiratory or cutaneous allergic symptoms. The *Brassica* genus includes many salad vegetables, such as cauliflower and broccoli, and condiments, such as mustard, which contain allergenic isothiocyanates (1). The extent of skin contact among food handlers may be significant, and sensitization to isothiocyanates from this large group of vegetables may represent an important cause of food contact allergy in these individuals. Two cases of contact dermatitis due to broccoli will be described.

Patient 1. A 54-year-old woman had worked in a greengrocery for 12 years. For the last 7 years, she had presented pruritus, erythema, vesicles, fissures, and peeling in both hands, as well as facial angioedema, within 6-8 h after handling broccoli. No previous history of atopy was present.

Patient 2. A 36-year-old woman with a history of intrinsic asthma had worked in a broccoli and cauliflower winter nursery for the last 7 years. After 3 years, she had begun to experience itching papules and vesicles in both hands and eyelids 24-36 h after touching broccoli or cauliflower.

Skin prick tests were carried out on the volar side of the forearm with a series of standard pneumoallergens, latex, broccoli, other members of the *Brassica* genus, and the other vegetables they were handling. Patients were patch tested with the European standard series, and afterward with the juice or parts of fresh broccoli, and the various fruits and vegetables. Patch tests with fresh broccoli and its juice were performed on 10 nonatopic and 10 atopic subjects acting as controls. Then, oral challenge with broccoli was done and total IgE serum levels were analyzed by nephelometry.

Skin prick tests were negative for both pneumoallergens and vegetables. In the two patients affected by contact dermatitis, the patch test with fresh broccoli and its juice elicited a positive reaction at 48 and 96 h, and the cauliflower also did so in patient 2. Patch tests with the standard series and the other fruits and vegetables were negative. No positive results were obtained in any of the control subjects. Oral challenge with broccoli was

also negative in the two patients. The total IgE levels determined in serum from both patients were lower than 33 UI/ml (detection limit of method).

Our patients are still at work. Patient 1 is asymptomatic, as she avoids touching broccoli and uses gloves at work. Patient 2 is still symptomatic, with eczematous lesions when handling these vegetables.

Allergy to cabbage and other plants of the *Brassica* genus has rarely been observed in man, although it is known that IgE sensitization may occur to foods from this genus (2, 3). Vegetables can produce contact dermatitis by different mechanisms: irritative, allergic, or both. Most frequently, the cause has an irritative origin. In immunologic contact dermatitis, we must distinguish between immediate-hypersensitivity reactions (type I), as in contact urticaria, and delayed-hypersensitivity reactions (type IV), as in contact eczema. Hun-

dreds of cases of allergic contact dermatitis caused by vegetables have been described (4-7). Previously, skin prick and scratch-chamber tests have been reported to be useful tools in the

Patch tests with fresh vegetables are reliable in the diagnosis of contact dermatitis.

diagnosis of food-handler dermatitis (8, 9). In this paper, we report two cases of occupational, cell-mediated (type IV) hypersensitivity to broccoli, and we conclude that patch tests with fresh vegetables are reliable in the diagnosis of work-related contact dermatitis induced by vegetables.

Key words: *Brassica*; contact dermatitis; patch test.

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Acute urticaria after ingestion of asparagus

THE occurrence of allergic reactions related to the ingestion or inhalation of several foods of the Liliaceae family, mainly garlic and onion, has been previously described (1-5). Asparagus (*Asparagus officinalis*), another member of the Liliaceae family, has not been a frequently encountered cause of IgE-mediated disease (6, 7).

This paper concerns a case of acute urticaria induced by ingestion of asparagus, associated with immediate skin reactions, and immunologically specific IgE antibodies.

■ A 29-year-old woman had suffered for 20 years from outbreaks (four to five each year) of acute generalized urticaria, together with angioedema of the lips and eyelids, and occasionally abdominal colic pain. Those symptoms appeared immediately after the ingestion of various foods (peanut, peach, and banana); recently, she had also noted the appearance of acute urticaria after eating green asparagus. She reported that she had not experienced itching in the mouth or throat after eating asparagus, and she had no symptom after the ingestion of other vegetables belonging to the Liliaceae family, such as garlic, onion, chive, and leek.

Skin prick tests (SPT) were performed on the volar side of the forearm with commercial extracts (Ifidesa-Arístegui, Bilbao, Spain) of foods (peanut, almond, hazelnut, banana, and peach) and common inhalants in our area (pollens, house-dust mites, molds, and danders). Prick-to-prick testing was performed with raw asparagus, both in our patient and in eight controls (four atopic and four nonatopic). Saline solution was used as negative control and histamine (10 mg/ml) as positive con-

trol. A wheal of ≥ 3 mm larger than the negative control was considered to be positive.

Total and allergen-specific IgE was measured by the Pharmacia CAP System, according to the manufacturer's instructions.

■ The SPT with commercial extracts were negative for two common allergens in our area, peach and banana, and positive for peanut, almond, and hazelnut. The prick-to-prick test with asparagus elicited a strong wheal-and-flare reaction in our patient, but was negative in the control subjects.

The total IgE level was 66 kU/l. The allergen-specific IgE to vegetables belonging to the Liliaceae family showed positive levels to onion (68.1 kU/l) and asparagus (1.77 kU/l), and negative to garlic (<0.35 kU/l); positive levels were shown also to peanut (1.70 kU/l), almond (49.3 kU/l), and hazelnut (1.68 kU/l).

■ The clinical findings and the results of the studies performed in our patient support an IgE-mediated mechanism as the underlying cause of her acute urticaria. All the involved foods but asparagus have been widely described as a cause of food allergy.

Asparagus, a member of the Liliaceae family, has not been a frequently encountered cause of IgE-

mediated disease.

A patient exhibited IgE antibodies to onion and asparagus, both members of the Liliaceae family.

As far as we know, only two reports of allergy to asparagus have been published. Reguera Parra & Terrados Cepeda (6) reported a case of occupational asthma in a farmer related to

harvesting asparagus. Tabar et al. (7) reported five patients who suffered occupational disease (contact dermatitis, contact urticaria, rhinoconjunctivitis, or asthma) due to exposure to asparagus.

Our case showed some remarkable aspects. It is well known that food allergy frequently occurs in association with pollen allergy; our patient did not report symptoms of pollinosis, and SPT to common pollens in our area were all negative. On the other hand, for other members of the Liliaceae family, our patient showed class 0 level of specific IgE to garlic, but a very high level (class 5) to onion; nevertheless, as she reported, she tolerated the ingestion of garlic and onion. This fact led us to suggest that onion-specific IgE could indicate sub-clinical sensitization to onion.

Specific serum IgE to an antigen or antigens in the asparagus was demonstrated, corroborating the immediate prick-to-prick test response to raw

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