

Lettuce and chicory sensitization

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Key words: asthma; chicory; food allergy; grocery store worker; lettuce; occupational disease; protein contact dermatitis; rhinitis.

• LETTUCE (*Lactuca sativa*) and chicory (*Cichorium intybus*) are Compositae plants, traditionally used in salads and other dishes, but recently implicated in immediate hypersensitivity reactions (1, 2). A case of work-related protein contact dermatitis, rhinitis, asthma, and food allergy due to lettuce and chicory is here described.

A 24-year-old woman, who had worked in a grocery store for 8 years, came to our department in January 1996, with a 7-year history of rhinitis, asthma, and chronic eczematous lesions, clearly related to handling of lettuce and chicory. She had

developed facial angioedema and dyspnea after eating both of them 5 years before.

Exposure to other vegetables, fruits, and sulfited foods such as wine or vinegar was well tolerated. No data suggesting latex allergy or nickel contact dermatitis were present.

Physical examination disclosed a very dry skin with follicular hyperkeratosis areas.

The patient had

to leave her job 6 months later, since her condition could not be well controlled with the usual drugs and

avoidance measures (mask and gloves).

Radiographic studies showed a normal thorax and mucosal hypertrophy of both maxillary sinuses. Cytologic analysis of nasal secretion and sputum specimens yielded an eosinophil rate of 40-50%. The total IgE level was 137 UI/ml (normal <150 UI/ml).

Skin prick tests (SPT) with inhalant allergens including mugwort pollen, sulfites, and ammoniated latex were negative.

A case of occupational IgE-mediated hypersensitivity to chicory and lettuce.

Commercial lettuce extract (IFIDES-ARISTEGUI, Bilbao, Spain), leaves and stems of fresh lettuce, chicory, and endive elicited positive skin responses of 11, 18, 12, and 15 mm, wheal mean diameter, respectively.

Patch tests with the European standard series of contactants were negative. A cutaneous reaction with erythema, edema, and confluent vesicles was observed for fresh lettuce, endive, and chicory, at readings of 20 min and 24, 48, 72, and 96 h.

SPT and patch tests with such vegetables gave negative results in five control patients.

Peak expiratory flow (PEF), recorded five times a day for 2 weeks, showed a variability of more than 30% on working days but less than 10% on the days off.

The parameters of baseline forced spirometry were found to be in the normal range. Methacholine challenge, performed by Chatham et al.'s method (3), disclosed bronchial hyperreactivity with a PD₂₀FEV₁ value of 57 accumulative breath units.

The patient experienced bronchospasm and laryngeal angioedema, after restarting work, in April 1996. That time, she had not eaten lettuce or chicory. Then, specific nasal, bronchial, and food challenges were not carried out because there was a high risk of severe reactions.

For *in vitro* tests, two separate extracts were prepared from fresh chicory and lettuce.

Specific IgE determination by ELISA (Phadezym Tracer, Kabi Pharmacia, Uppsala, Sweden) was negative for lettuce and revealed levels of 1.02 PRU/ml (class 2) against chicory.

SDS-PAGE was carried out by Laemmli's method with 12.5% polyacrylamide gels which were stained with Coomassie brilliant blue R-250 after electrophoresis. A standard of proteins as molecular mass markers was applied in the parallel way, and percentage in weight of each band was calculated by image

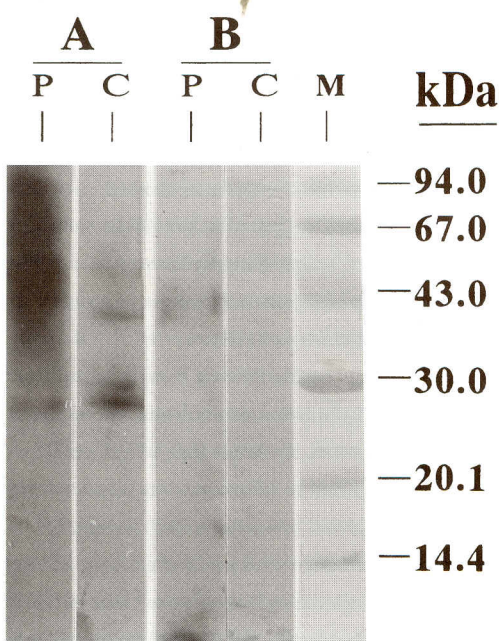


Figure 1. SDS-PAGE and immunoblotting. A) Chicory (Belgian endive) extract. B) Lettuce extract. Lane P) patient's serum; lane C) controls' sera; lane M) molecular mass standard.

analysis (Bio-Image System, Millipore, Bedford, MA, USA).

Proteins resolved in SDS-PAGE were electrophoretically transferred to PVDF membranes, and detection of IgE-binding components was performed with the patient's serum and anti-human IgE-peroxidase conjugate. Immunoblotting (Fig. 1) revealed several bands at 42 and 39 kDa in lettuce extract as well as at 91, 66, 47, and 41.35 kDa in that of chicory. All these proteins were not present in pooled sera from 136 nonatopic controls.

Sensitization to vegetables has been reported in greengrocers and subjects without any professional contact (1, 2).

For diagnosis, SPT and patch tests with fresh foods are reliable and safe, but specific organ challenges must be carefully evaluated to avoid life-threatening reactions. Moreover, allergy to parasitic insects, latex, sulfites, and nickel salts should be excluded when patients report plant-related symptoms (4-7).

We present a case of occupational IgE-mediated allergy to lettuce and chicory, supported by medical history and laboratory findings. Even eczematous hand lesions seemed consistent with protein contact dermatitis, since the onset of symptoms occurred within a few minutes after the patient touched plants, and positive skin reactions for these foods were present.

We are faced with allergenic action by skin contact, inhalation, and ingestion. In this way, immunoblotting revealed an IgE-binding band at about 42 kDa in lettuce and chicory extracts, which may correspond to those of 45 or 48 kDa highlighted, respectively, by several investigators (1, 2). Hence, crossed-reactivity between lettuce and chicory could be suspected, as they are closely related plants.

Other proteins in chicory extract such as these of 47, 66, and 91 kDa may be equivalent to those described by Helbling et al. (2), ranging from 45 to 200 kDa.

Therefore, plants in the Asteraceae family may become sensitizing not only through its wind-pollinated members (mugwort, ragweed), but also through foods such as lettuce or chicory. This is important for

elimination diets, for subjects with a known respiratory pollen allergy, and for people highly exposed as a result of their job.

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Recurrent vaginitis as a manifestation of inhaled latex allergy

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Key words: latex sensitivity; vaginitis.

● VAGINAL pruritus due to IgE-mediated disease has rarely been reported in women, and only once in girls (1). Contact dermatitis secondary to latex condoms has occurred (2), but not to inhaled latex, which has recently been recognized as a cause of allergic

respiratory symptoms in health-care workers (3). Vaginal pruritus due to sensitivity to inhaled latex is herein reported.

The patient was a 31-year-old white woman who had been a community hospital housekeeper for 3 years. She presented in September 1995 with vaginal pain and pruritus. Antibiotics for urinary tract infections and intravaginal antifungals did not help. Cystoscopy and urethral dilation were normal.

She denied contact dermatitis, allergic rhinitis, asthma, drug or food allergy, or sexually transmitted diseases. Her family history was consistent with allergic rhinitis. She had been married for 12 years, but had no vaginal intercourse because her husband was impotent as a secondary effect of diabetes; she denied having extramarital affairs.

Gynecologic evaluation led to the diagnosis of yeast vulvovaginitis secondary to antibiotics with significant

erythema of the vaginal vault. Vaginal cultures and wet preparation of vaginal secretions were normal. Vaginal hydrocortisone failed. Further

Recurrent vaginitis with eosinophilic infiltration was determined to be related to IgE-mediated latex sensitivity in a hospital worker.

examination revealed facial eczema and hand contact dermatitis probably from workplace cleaning products. The vaginal examination was consistent with perimenopausal atrophic vaginitis; she was given estrogen vaginal cream and an antidepressant for her vulvar neuralgia. Her symptoms persisted. Colposcopy suggested lichenoid dermatosis. However, a vaginal biopsy showed eosinophils and reactive epithelial changes suggestive of an allergic response (Fig. 1).

Allergic evaluation was carried out in May 1996. Examination demonstrated facial and hand eczema. An immediate wheal and flare skin reaction to *Alternaria* was seen. Occupational history revealed cleaning of hospital areas with various chemicals, and use of latex gloves and exposure to other latex products at work. She denied symptoms with