

Allergy to fresh dill

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Key words: Apiaceae; dill; hypersensitivity; spices.

FOODS and spices of the parsley family (Umbelliferae, formerly Apiaceae) include anise, caraway, coriander, cumin, dill, fennel, parsley, carrot, and celery. Some of these have been associated with various allergic reactions including asthma, gastroenteritis, and anaphylaxis (1–3). Herein is described an atopic man who experienced cutaneous allergy and periorbital edema after preparing and eating fresh dill. This case appears to be unique, as ascertained by an English language search of MEDLINE through 1998.

A 32-year-old mechanical engineer was referred to the allergy clinic in September 1994 for “probable allergic conjunctivitis, recurrent, severe”. He reported four episodes occurring that year of periorbital swelling, generalized itching, rash, and “chapped lips” without respiratory symptoms, urticaria, dysphonia, or dysphasia. Symptoms subsided over several days concomitant with oral diphenhydramine and prednisone therapy. Two of these episodes occurred approximately 12 h after eating grilled fresh salmon garnished with fresh dill that he had minced just before use. He had previously tolerated salmon, but fresh dill was a new ingestant. Neither dill pickles nor dried dill as a component of Italian food had caused any ill effects. No other food or spice allergies were known. The two apparently non-dill-related episodes remain unexplained.

The patient also reported mild springtime rhinitis and sneezing around cut grass and cats. There was no history of atopic dermatitis, asthma, or urticaria. He was taking gemfibrozil for hypercholesterolemia. Physical examination revealed a heavy Hispanic man with slight periorbital lichenification; a 4-inch, brawny, scaly patch on the anterior chest said to be residual from

his last allergic episode; and slightly boggy, pale nasal turbinates. Skin tests using commercial extracts were positive to dill seed, dill mix (seed plus weed), anise seed, caraway, carrot, celery, cumin, and parsley. IgE RAST testing by a commercial laboratory was also positive to these antigens with the exception of anise seed and caraway, for which no antigens were available (Table 1). Both skin tests and RAST to salmon were negative, and he subsequently ate this fish without symptoms. Skin

tests were also positive to multiple pollens, house-dust mite, and dog and cat (Bayer Corporation Pharmaceuticals, West Haven, CT, USA). The patient was advised to avoid dill products, and epinephrine was prescribed for emergency self-administration. During 2 years of monitoring, he had no further similar allergic episodes. He now avoids fresh items in the parsley family and cooks with commercial dried Italian herbs, which contain no dill or related spices.

In summary, the patient reported here experienced periorbital swelling, generalized itching, rash, and “chapped lips” on two occasions approximately 12 h after eating salmon garnished with fresh dill that he had

minced. His skin tests and RAST to dill were positive. However, he tolerated dill pickles and dried dill.

Of particular relevance to this case is the report by Helbling et al. (3) of a patient who experienced laryngeal edema and bronchospasm after eating fresh but not dried parsley. Thus, the allergenic component of both dill and parsley appears to be quite labile.

Anaphylaxis and similar allergic reactions usually occur within 1 h after ingesting an offending food, but they occurred some 12 h later in the patient reported here. Nonetheless, the finding of specific IgE suggests that this somewhat delayed response was the result of a type 1 reaction (4). Stricker et al. (5) identified a group of patients with idiopathic anaphylaxis ultimately attributed to specific foods or spices whose reactions occurred within 4 h.

The various members of the parsley family have antigens that either are in common or cross-react (6). The patient reported here demonstrated reactive skin tests and positive RAST to other members of the Umbelliferae in addition to dill (Table 1). Similarly, Stager et al. (7) found that multiple positive skin tests within the parsley family were common, whereas concomitant reactions to foods and spices outside this taxonomic family were unusual. Moreover, our patient was able to eat non-dill Umbelliferae foods

An atopic man developed delayed periorbital edema, pruritus, and rash after preparing and eating fresh (but not dried) dill.

Table 1. Skin tests and RAST to Umbelliferae

Antigen	Skin prick test*	IgE RAST score**
Dill seed (<i>A. graveolens</i>)	+ (a)	NA
Dill mix (dill seed, dill weed)	+ (b)	3
Anise seed	++ (c)	NA
Caraway	+ (a)	NA
Carrot	+ (b)	3
Celery	+ (b)	2
Cumin (<i>C. cyminum</i>)	++ (a)	4
Parsley	+ (b)	2

*1:10 50% glycerosaline; **Allergy Testing Laboratory, Margate, FL, USA; NA: not available; +: same as histamine reaction; ++: > than histamine reaction; a: Meridien Bio-Medical, Round Rock, TX, USA; b: Bayer Corporation Pharmaceuticals, West Haven, CT, USA; c: ALO Laboratories, Inc., Columbus, OH, USA.

and spices, to which, however, he showed positive allergy tests. This may be an example of the well-known occasional lack of correlation between immediate hypersensitivity tests and symptoms, a factor which can make accurate food allergy diagnosis a clinical challenge (8).

Three clinical features of food allergy are illustrated by the case reported here. First, manifestations may appear as late as 12 h rather than the usual 1 h after ingestion. Second, skin test and *in vitro* reactivity to related foods may be present in the absence of any adverse effects resulting from their ingestion. And third, a minor ingredient in a prepared dish may be the offending allergen (1, 2). In the present case, the main course of salmon came under immediate suspicion as the allergenic culprit. However, investigation proved that the dill, not the fish, was responsible.

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Accepted for publication 9 February 1999
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ISSN 0105-4538

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Allergic alveolitis from pine sawdust

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Key words: biotinylated lectins; carbohydrate antigen epitopes; extrinsic allergic alveolitis; pine sawdust.

● EXTRINSIC allergic alveolitis (EAA) results from immune reactions to various inhaled occupational organic dusts with a particle size of less than 5 µm. Wood dust has been described as a noxious inhalative agent, and cases of EAA

caused by exposure to wood dust have been reported (1-4).

A 57-year-old, nonsmoking butcher, whose hobby was woodworking, had spent much leisure time in his workshop during the last 10 years. He had experienced fever attacks, increasing dyspnea, and fatigue, especially provoked by exposure to sawdust, over the last 4 years. Basal crepitant rales, radiologic signs of pulmonary fibrosis, an alveolar picture typical of acute alveolitis, and slight restrictive ventilation

defects of the lungs were observed: diffusing capacity, 5.46 mmol/min/kPa (61%); vital capacity, 3820 ml (83%); and FEV₁, 2880 ml (78%). The total cell amount was increased in the bronchoalveolar fluid (660×10⁶/l), and alveolar lymphocytosis was seen (lymph. 89%, macroph. 9%, neutroph. 1%). Blood eosinophil count and serum total IgE value were normal. Neither serum IgE antibodies (Abs) against *Dermatophagoides pteronyssinus*, *D. farinae*, *Alternaria alternata*, *Candida albicans*, *Cladosporium* spp., and *Penicillium* spp. nor serum IgG Abs against *Aspergillus fumigatus*, *A. glaucus*, *Thermoactinomyces vulgaris*, and *Saccharopolyspora rectivirgula* were found.

Sawdust from pine, spruce, birch, beech, and apple was collected from the workshop of the patient, and fungal cultures were done. The antigen extracts were prepared by two methods:

- 1) sawdust was incubated in Coca's solution (5) at room temperature (RT) overnight, sonicated at RT for 10 min, and incubated at RT overnight (extract A)
- 2) sawdust was incubated in ether at RT overnight, evaporated, and incubated in Coca's solution at 4°C for 1 week (extract B).

Both preparations were centrifuged, and the supernatants ultrafiltered and lyophilized. Enzyme-linked immunosorbent assay (ELISA) and gel electrophoresis followed by transference to nitrocellulose and

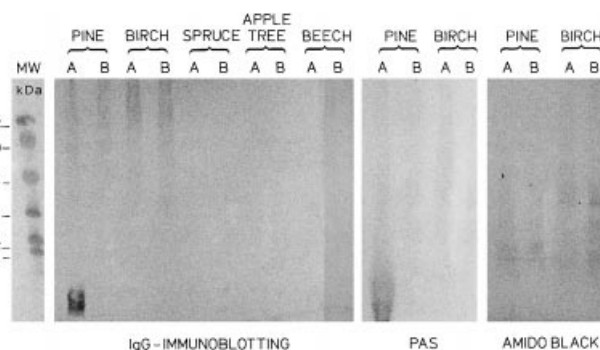


Figure 1. Staining of SDS-PAGE-separated sawdust extracts A and B. Patient serum IgG antibodies detected low-molecular-weight carbohydrate epitopes only of pine extract A. Protein stain (amido black); carbohydrate stain (PAS: periodic acid-Schiff). MW: molecular weight.