

Anaphylaxis to coriander: A sleuthing story

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Some instances of "idiopathic" anaphylaxis are due to food allergens hidden in other foods. Some of these reactions have been fatal.¹ Careful detailed investigation has shown that some of these substances can be identified; examples include peanut, tree nuts, cow's milk, and cottonseed protein.²⁻⁴ The purpose of this report is to demonstrate that a patient who has had two anaphylactic reactions to an unknown substance can be accurately evaluated in an office setting without any special tools except patient cooperation and a little detective work.

CASE REPORT

The patient was a 14-year-old girl who was seen on two occasions in a local emergency department. She complained of difficulty breathing and a sensation of swelling in her throat, symptoms that were accompanied by generalized urticaria. Wheezing was noted by the emergency room physician on both occasions; her blood pressure was slightly elevated (150/70 mm Hg) with a pulse of 112 during one episode. Pulse oximetry on one occasion was 84% on room air at the time of presentation. (The altitude in Boulder, Colorado is about 5400 feet above sea level.) On both occasions she was treated with epinephrine, diphenhydramine, and intravenously administered steroids. Oxygen was administered and she received inhalation treatments with albuterol during both reactions.

Of the several foods eaten on both occasions, the only common food ingested was chicken prepared in a teriyaki marinade and ingested within an hour before the onset of symptoms.

This young lady had previously been found to be significantly sensitized to animal dander and pollen allergens when she was evaluated for seasonal respiratory symptoms. She had not received allergy injection treatment. She was skin tested with components of the meal with the prick/puncture skin test. Skin test results for chicken and other components of the meal were negative, but the skin test with the commercial teriyaki sauce resulted in a 7 mm wheal. The skin test was

performed by placing a drop of the teriyaki sauce on the skin and pricking it, just as with commercial extracts. The teriyaki sauce ingredient list included a pepper extract, capsicum extract, ginger, coriander, and a cooking wine. Skin tests with ginger, pepper, and coriander were undertaken with fresh material obtained by the patient from a grocery store. All results were negative except coriander, which produced a 7 mm wheal. The diluent control was negative; the histamine control was positive. Three persons who served as control subjects for the skin tests did not exhibit any cutaneous response to these materials.

A double-blind placebo-controlled food challenge was performed with coriander and two placebos, dextrose and ground poppy seeds. The poppy seeds were used to imitate the texture of the coriander. The vehicle used for the challenges was applesauce. The subject was unable to distinguish the identity of the three substances. Capsules were not used in order to be certain that the challenge substance came in contact with oral tissues and to ensure that there would be no delay in gastrointestinal absorption. The doses of coriander were 5 mg, 50 mg, and 100 mg. After the 50 mg dose the patient complained of a sensation of nasal congestion without accompanying physical findings, and she reported a slight headache. These symptoms subsided in about 10 minutes. Fifteen minutes later the 100 mg dose was administered. She again complained of nasal congestion, but at this time there was rhinorrhea and visible mucosal edema. In a few more minutes she complained of itching in the neck internally and externally and a tight sensation in her throat. Her pulse was 84 with a blood pressure of 120/70 mm Hg. No wheezing was noted; her flow volume parameters (forced expiratory volume in 1 second, peak expiratory flow rate, and forced expiratory flow, mid-expiratory phase) decreased less than 15%. However, she continued to complain of chest tightness and pruritis of the neck. Therefore 23 minutes after this last challenge, 0.3 ml of epinephrine was administered subcutaneously. Within 15 minutes all symptoms subsided except for a slight complaint of tremor. Blood pressure 30 minutes after epinephrine administration was 105/80 mm Hg. Her pulse and results of chest examination were unchanged. She never became hoarse, and stridor did not develop.

COMMENT

This young lady presented after two visits to the emergency department, 3 weeks apart, for treatment of severe allergic reactions for which she was treated with epinephrine and other measures. Although the suspected foods were relatively easy

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to identify, it quickly became apparent that chicken and other commonly ingested foods were not likely culprits. When the teriyaki sauce became the prime suspect, it was important to identify the exact ingredient responsible. If the patient had been instructed to avoid the teriyaki sauce, she obviously could have ingested coriander in some other substance in the future and experienced another reaction. A positive skin test to the teriyaki sauce guided us to the correct culprit, and then it was possible to identify sensitization to only one component in the ingredient list. The double-blind challenge then elicited mild symptoms but a reaction sufficient to make it highly likely that the correct substance had been identified. Subsequently, the patient was able to consume the other ingredients without the production of symptoms, which made coriander the overwhelmingly probable culprit.

Reactions to spices have been reported to cause allergic reactions.⁵⁻⁸ Testing for these substances presents a challenge to the allergist because of the lack of reliable commercially available extracts. Thus in order to evaluate histories such as the one presented, it is necessary to obtain and test with fresh foods. Ideally, in the future an extract company will produce and market skin test extracts of the common spices. The food challenge was performed in an allergist's office with care so as not to elicit a severe reaction but in order to be as certain as possible that the correct substance could be avoided in the future. This approach was safe and successful and should be useful to clinicians who are faced with similar problems. Failure

to identify the food responsible for anaphylactic reactions can have dire consequences; even when the food has been properly identified, fatalities may occur.⁹

Addendum

Since submission of this report for publication, an additional patient has been evaluated by use of the same approach and has been found to be anaphylactically sensitive to cumin seed.

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