

Anaphylaxis to Kiwi Fruit in a Young Child

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ABSTRACT

A 13-month-old child developed anaphylaxis after ingesting, for the first time in his life, kiwi fruit. Hypersensitivity to kiwi fruit was proved by a skin prick and radioallergosorbent (RAST) tests. This is the third and youngest reported pediatric patient with severe allergic reaction to kiwi. Although cross-reactivity between kiwi hypersensitivity and other fruit and latex allergies has been reported, it could not be proved in our patient. (Pediatr Asthma Allergy Immunol 1998;12[2]:157–159.)

BECAUSE OF THE VAST IMPROVEMENTS IN TRANSPORTATION in recent years, exotic fruits and other edibles have become available in many countries to which they are not indigenous. Some of these foods have been found to cause severe allergic reactions.

Actinidia chinensis, or the kiwi fruit, originated in the Yangtze River valley in China, from where it was exported in the 19th century to New Zealand (where it gets the name “kiwi”) and then to other countries.^(1–3) The most severe allergic reactions to kiwi usually have been associated with handling (rather than ingestion) of the fruit.⁽⁴⁾ Anaphylaxis to ingested kiwi is rare, especially in children. We report on the youngest patient in the pediatric literature with anaphylaxis to kiwi fruit, and point out that an allergic potential for exotic foods exists also in this age group.

CASE REPORT

A 13-month-old boy was examined in the emergency department because of severe allergic reaction after ingestion of kiwi fruit. Ten minutes after eating peeled slices of kiwi, for the first time in his life, the child developed an urticarial rash over the trunk and face, hyperemic conjunctivae, edematous eyelids, cough, and dyspnea. Past medical history revealed an allergic reaction to eggs that caused skin rash. He had had no adverse reactions to vaccinations. Family history was noncontributory and without atopic diseases.

The patient was treated with dimethindene maleate, but his condition deteriorated, and within 1 hour, erythematous rash spread to the entire body and he vomited four times and became apathetic. He received betamethazone (1 mg) and was referred to the hospital. Physical examination revealed an irritable child with generalized urticarial rash, pruritus, peripheral and perioral cyanosis, and respiratory and expiratory wheezing; blood pressure remained normal. Anaphylaxis was diagnosed and the patient was treated with

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oxygen, subcutaneous adrenaline, and intravenous methylprednisolone and diphenhydramine. His condition improved within a few hours and he was discharged after 24 hours.

Skin prick tests yielded positive reactions to kiwi and egg white. Total serum IgE level was 165 IU/mL (normal up to 100 IU/mL). Kiwi-specific and egg-specific IgE levels were determined with the radioallergen sorbent (RAST) test kit (Diagnostic Products Corporation, Los Angeles, CA, USA); both were highly positive (class IV); (41 IU/mL and 23 IU/mL, respectively) (positive >1.5 IU/mL). RAST test for milk, chocolate, apple, mango, avocado, banana, and latex was negative.

Three months later, repeated skin prick test for egg white showed positive reaction. Prick and intradermal skin tests for measles-mumps-rubella (MMR) immunization were negative and the patient was immunized with MMR without adverse reactions.

DISCUSSION

The main food allergens in the pediatric age group are milk, eggs, and nuts.⁽⁵⁾ Anaphylactic reaction to kiwi, first reported in 1981,⁽⁶⁾ and to other exotic fruits is rare in children,⁽⁴⁾ at least partly because of their limited exposure to these products. The medical literature contains only two cases of anaphylaxis to kiwi in children aged 3 and 12 years,^(5,7) making ours the youngest child reported to date.

Circulating kiwi-specific IgE was detected in our patient and in the children reported previously,^(5,7) suggesting a probable IgE-mediated mechanism. The fact that such a severe reaction developed in such a young child on first exposure may be explained by a possible cross-reaction between kiwi and other food products previously ingested by the child. Such cross-reactivity with avocado⁽⁸⁾ and even latex⁽⁹⁾ has been reported. In one study, 4 of 17 subjects sensitive to avocado also showed positive skin prick test to kiwi.⁽⁸⁾ In another study of 25 adult subjects with latex allergy, multiple fruit hypersensitivity was diagnosed by history and skin prick tests. Here, 5 of the 25 patients (20%) had hypersensitivity to kiwi.⁽⁹⁾ Although the authors failed to prove the existence of common antigenic determinations for latex and kiwi by RAST inhibition, they assumed that the two showed common epitopes.⁽⁹⁾ Thus, hypersensitivity to latex or certain fruits places some subjects at risk of hypersensitivity to other fruits, including kiwi. In our patient we could not show any known cross-reactivity with fruits or latex. His only known allergy was to egg protein and cross-reactivity between egg and kiwi was not reported. An alternative speculation for the severe reaction to kiwi after first ingestion in our patient is the possible exposure of the mother, and then through her, the child, to kiwi fruit, during pregnancy or breastfeeding.

Unlike other authors,⁽⁵⁾ we believe the true incidence of anaphylactic reactions to kiwi ingestion may be higher than suspected and that cases may have remained unreported because of the natural geographic prevalence of the kiwi fruit in the Far East, from which we do not receive sufficient medical data. With the greater access of the Western world to kiwi and other exotic fruits, one may expect changes in the epidemiologic pattern of severe reactions to these products.

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