

Anaphylaxis after initial ingestion of rambutan, a tropical fruit

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IgE-mediated reactions to fruits and vegetables are not uncommon in patients with allergic rhinitis caused by pollen.¹ A number of associations have been made between particular pollens and fruits; for example, patients allergic to birch or ragweed pollen with allergic reactions to apple or melons, respectively.¹ Symptoms in this *oral allergy syndrome* or *pollen-food allergy syndrome* are often confined to the mouth but may be more generalized.¹ Cross-reacting allergens, mainly profilins, in the pollens and foods are responsible for this association.² It is generally not possible to determine whether initial sensitization was to the pollen, food, or both, although some experimental evidence suggests that the primary sensitization is to the pollen.³ We present the case of a patient who appears to demonstrate that sensitization to pollen can lead to an associated food allergy.

CASE REPORT

A 22-year-old active duty sailor was evaluated in the allergy clinic for suspected food allergy. He reported that while on his first port call to Thailand, he ate a tropical fruit called rambutan (Fig. 1). Within minutes he had hives, itchy eyes, and throat swelling. He was given an unknown pill by a companion as treatment, and the symptoms subsequently resolved. He claimed to have never eaten this food before. He denied allergic reactions to any other food but did complain of hay fever symptoms in the spring. Crude extracts were prepared from fresh frozen rambutan (obtained from Dr. Francis Zee at the United States Department of Agriculture, Agricultural Research Service, Hilo, Hawaii) and canned rambutan imported from Thailand by pulverizing the fruit in its own juice with a mortar and pestle. Skin prick tests were performed with these extracts, with results recorded as diameter of wheal in millimeters to diameter of erythema in millimeters as follows: fresh frozen rambutan, 11 mm/40 mm and canned rambutan, 6 mm/30 mm. Skin prick test responses with these same extracts were negative on three control

subjects. In addition, the patient had positive skin prick test responses to numerous grass, tree, and weed pollens, with large reactions to rye grass, birch, oak, cocklebur, ragweed, and sagebrush. Skin prick test responses to latex glove extracts were negative. To measure rambutan-specific IgE antibodies, solid-phase allergens were prepared from both the canned and fresh fruit by coupling minced rambutan juices to cyanogen bromide-activated filter paper disks,⁴ but negative results were obtained with these disks and serum from the patient. Subsequently, the patient's serum showed a weak positive test result (binding 254% negative control) with a microcrystalline cellulose particle solid-phase allergen to which was coupled fresh fruit extracted in 10 mmol/L phosphate buffer (pH 7.0) containing 2 mmol/L ethylenediamine tetraacetic acid, 10 mmol/L sodium diethyldithiocarbamate, 3 mmol/L sodium azide, and 2% polyvinylpyrrolidone.⁵

DISCUSSION

This is the first known report of allergy to the tropical fruit rambutan (*Nephelium lappaceum*). Also, a Thai allergist, Dr. Pakit Vichyanond, reported that he had not seen allergy to rambutan in his practice in Bangkok (personal communication). Rambutan is widely grown and consumed in Southeast Asia,⁶ but it is available in the United States only as a canned product in specialty stores. Given such limited availability of the food in the United States, our patient's claim that he had his reaction after eating the food for the first time is almost certainly true, although this cannot be proven definitively. Rambutan is in the same botanical family, but in a separate genus, as the tropical fruits lychee, longan, pulasan, Spanish lime, and akee.⁶ Our patient did not recall ever having eaten any of these other tropical fruits, and they are not commonly consumed in the United States. Also, allergic reactions to a number of fruits, including avocado, banana, and kiwi, have been associated with latex allergy.⁷ Our patient had no history of allergy to latex or these fruits and had negative skin test responses to latex. It is still possible that he was sensitized by a botanically related food that he did not recall eating or that he was sensitized by a food that is immunologically cross-reactive with, but not botanically related to, rambutan. We were not able to perform inhibition immunoassays to investigate cross-reactivity between pollen allergens and rambutan because of the low level of IgE binding to the solid-phase allergen. Nonetheless, the most likely explanation for this patient's IgE-mediated allergic reaction on his initial ingestion of this food is that he was first sensitized to cross-reacting allergens in pollen through the respiratory route.

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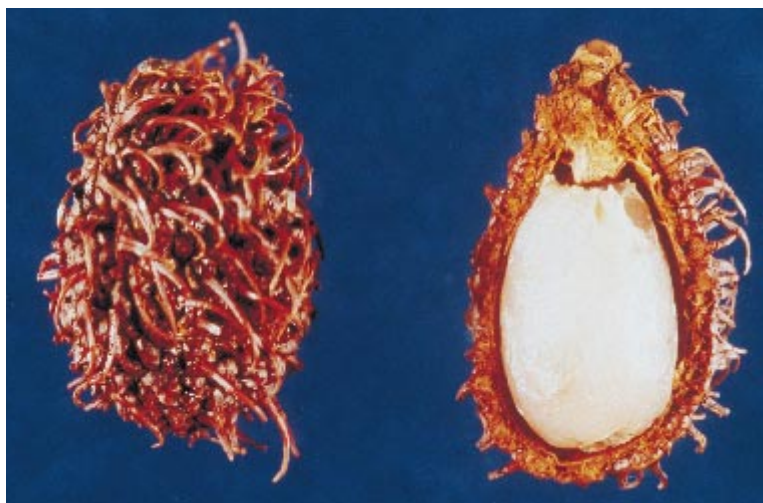


FIG. 1. Rambutan, whole fruit (*left*) and with peel removed (*right*). Overall fruit is about 5 cm in length.

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