

Case Report

Allergy to banana in a 5-month-old infant

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Food proteins can sensitize the infants via different sources. A 5-month-old boy suffered three episodes of generalized urticaria 20 min after the ingestion of a fruit purée containing apple, banana and orange. Skin testing showed positive results to banana and chestnut. Other tests were negative. The value of specific immunoglobulin E (Pharmacia CAP-FEIA, Uppsala, Sweden) to banana was 58 KU/l, to orange was 9.7 KU/l, to chestnut was 5.6 KU/l and to latex was 1.6 KU/l. Orange, apple and latex products were well tolerated. He never had eaten chestnut. The parents rejected a banana challenge test. The route of sensitization in our case might be via placenta, breast-milk, and inadvertent oral intake of food or even via inhalation. An early frequent exposure to banana allergens was considered a possibility factor for the development of banana sensitization. We found that the banana consumption during pregnancy and lactation by the mother of our patient was greater than usual. It is not frequent to find so high levels of sensitization to any fruit in first year of life. In our case, latex, chestnut and orange sensitizations did not seem to be clinically relevant. However, latex and foods known to cross-react with banana antigens should be given to banana-sensitive individuals with great caution.

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Controversy still surrounds the hypothesis that food proteins can sensitize the infants via the placenta, or the breast-fed baby via breast milk, in mothers who consume high doses of a very allergenic food, like peanut for example, during pregnancy and lactation (1). Other routes of sensitization might also be the inadvertent oral intake of food when child suck mother's fingers/thumb or even inhalation. Several reports dealing with early food sensitization showed conflicting results about a possible association between the presence of food allergy in infants and the consumption of allergenic foods by pregnant or breast-feeding mothers (2–6). Peanut, cow's milk and egg were the most frequently implicated foods; by contrast, banana allergy is rare in infants (7).

Case report

A 5-month-old boy suffered three episodes of generalized urticaria 20 min after the ingestion of a fruit purée containing apple, banana and

orange. These were the first times he had eaten banana. His mother had been breast-feeding him. He had no important antecedent; however, his mother had eaten banana very often (twice every day) along pregnancy and breast-feeding. She was sure that the baby did not ever intake banana inadvertently. The infant needed oral antihistamines and corticosteroids to treat these reactions. The symptoms did not reappear after banana was ruled out from the infant's diet.

Allergy study

Skin testing was performed prick-by-prick with banana, orange and apple, and also by prick test with available commercial extracts of chestnut (Leti, Barcelona, Spain) and natural rubber latex (Stallergenes, Paris, France). Skin prick testing showed positive results to fresh banana (wheal 6 × 6 mm), commercial extract of banana (wheal 3 × 4 mm), and chestnut (wheal 3 × 4 mm). Histamine 10 mg/ml was the positive control (wheal 5 × 5 mm). Other tests were negative. The total

immunoglobulin E (IgE) antibody level was 426 UI/ml. The value of specific IgE (Pharmacia CAP-FEIA, Uppsala, Sweden) to banana was 58 KU/l, to orange was 9.7 KU/l, to chestnut was 5.6 KU/l and to latex was 1.6 KU/l. Orange, apple and latex products were well tolerated. He never had eaten chestnut. The parents rejected a banana challenge test.

One year later, specific IgE to banana was 92 KU/l, to chestnut was 11.5 KU/l, to orange was 2.35 KU/l and to latex was 3 KU/l. Skin testing with latex was again negative. He tolerated chestnuts without problems, and his mother did not tell any reaction with latex products. Orange was also well tolerated. The parents rejected again a banana challenge test. We recommended an extreme caution with chestnut and latex and avoidance of banana.

Discussion

Concerning early sensitization to foods; in our case, an early frequent exposure to banana allergens was considered a possibility factor for the development of banana sensitization. We found that the banana consumption during pregnancy and lactation by the mother of our patient was greater than usual. In general, sensitization as a result of exposure to foreign proteins via placenta or via breast-milk may occur (5). However, the route of sensitization in our case might be via placenta, breast-milk, and inadvertent oral intake of food when the child might suck the mother's fingers/thumb or even via inhalation. Leaving aside the question of the route of sensitization, it is not frequent to find so high levels of sensitization to any fruit in first year of life. Moreover, banana has been rarely implicated in food allergy at that age (7).

About half of patients with latex allergy have symptoms from bananas and show positive results in banana skin testing and/or in banana *in vitro* specific IgE. Cross-reactivity of the IgE antibodies has been demonstrated, and the

existence of cross-reacting antigen and allergen has been confirmed (8).

Because severe allergic reactions are known to be caused by latex and bananas, patients allergic to either of these allergens should be interviewed, and when necessary, also tested with the cross-reacting allergen to avoid unexpected reactions when in contact with the allergen (8).

In our case, latex, chestnut and orange sensitizations did exist; but these sensitizations did not seem to be clinically relevant. However, latex and the other foods known to cross-react with banana antigens, such as avocados and chestnuts, should be given to banana-sensitive individuals with great caution.

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