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Oral Provocation Test with Banana: A Rare Cause of Anaphylaxis in a Four Year Old Child

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ABSTRACT:

Oral provocation test with banana: a rare cause of anaphylaxis in a four year old child

Objective: Food allergy is the most common cause of anaphylaxis in children and recent studies suggest that the prevalence of food allergies has increased. Among foods, fruits are rarely the cause of anaphylaxis. Although banana allergy has been identified among the causes anaphylaxis in adults, the incidence of banana anaphylaxis reported in children is very rare. In this case report a patient who developed anaphylaxis after banana ingestion was discussed.

Case: A 4-year-old boy male patient admitted with widespread itching, swelling of the eyelids, urticarial rash in body following exposure to banana. In oral provocation test performed in order to confirm the diagnosis made with banana, urticarial papules were detected. Urticaria, swelling of the eyelids and wheezing complaints occured in the body in 10 minutes after banana was given. Bilateral rhonchus was presented in auscultation and the blood pressure of the patient measured was normal. The patient was diagnosed with anaphylaxis and 0.01 mg / kg IM epinephrine nebulizer with short-acting beta 2 agonists and antihistaminic treatment were given. The patient who recovered during follow-up was discharged with antihistaminics and 3-day oral methylprednisolone therapy. Recommendations were made to patient and adrenaline auto-injector was prescribed and its use was described.

Conclusion: Although rare, children may develop anaphylaxis with bananas. Therefore, oral provocations for diagnostic purposes should be performed by experienced centers and necessary precautions should be taken against the reactions that may occur.

Key words: Bronchial provocation tests, banana, receptors, leukotriene

ÖZET:

Dört yaşındaki bir çocukta nadir bir anafilaksi nedeni: Muz ile oral provokasyon testi

Amaç: Besin alerjisi çocuklarda anafilaksinin en sık nedenidir ve çalışmalar son yıllarda besin alerjisinin sıklığının arttığını göstermektedir. Besinler arasında, meyveler nadiren anafilaksi nedeni olarak yer almaktadır. Muz alerjisi erişkinler içinde anaflaksi nedenleri içinde saptanmış olmasına rağmen, çocuklarda bildirilen muz anaflaksisi olguları oldukça azdır. Bu olgu sunumunda muz alımı sonrasında gelişen bir anaflaksi olgusu tartışıldı.

Olgu: Dört yaşındaki erkek hasta, muz alımı sonrası vücudunda yaygın kaşıntı, ürtikeryal döküntü ve göz kapaklarında şişlik ile başvurdu. Tanının kesinleştirilmesi amacıyla yapılan muz ile oral provokasyon testinde ürtikeryal papül saptandı. Muz verildikten 10 dakika sonra gövdesinde ürtiker, göz kapaklarında şişlik ve hırıltı şikayeti gelişti, dinlemekle bilateral ronküs mevcuttu ve hastanın ölçülen tansiyonu normaldi. Hastaya anafilaksi tanısı konuldu ve 0.01 mg/kg dan IM adrenalin, nebulizatör ile kısa etklili beta 2 agonist ve anti histaminik tedavisi verildi. İzlemde bulguları düzelen hasta antihistaminik ve 3 günlük oral metilprednizolon tedavisiyle taburcu edildi. Hastaya önerilerde bulunuldu ve adrenalin otoenjektör reçete edilip kullanımı gösterildi.

Sonuç: Nadir de olsa çocuklarda muz ile anafilaksi gelişebilmektedir. Bu nedenle tanı amaçlı yapılacak oral provokasyonlar deneyimli merkezlerce yapılmalı ve gelişebilecek reaksiyonlara karşı gerekli önlemler alınmalıdır.

Anahtar kelimeler: Bronşiyal provakasyon testleri, muz, reseptörler, lökotrien

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INTRODUCTION

Anaphylaxis has been reported increasingly in children in recent years. Food is the most common cause of anaphylaxis in children, and drugs in adults (1). Anaphylaxis due to food varies with age and is most often due to consumption of milk and egg in pre-school children (2). Anaphylaxis occurs rarely with the consumption of banana (3,4).

A case who developed anaphylaxis after oral provocation with banana to confirm the diagnosis was discussed and it is sought to emphasize that rarely anaphylaxis due to banana may be seen.

CASE REPORT

A 4-year-old male patient was admitted to the allergy clinic with extensive itching, urticarial rash and swelling of the eyelids after banana ingestion. In the physical examination of the patient; the body weight was 17.5 kg (25-50 p), height was 105 cm (50-75 p), heart rate was 104 beats/min, respiratory rate was 28/min and fever was 37°C. There was urticarial rash, being more intense in the body and angioedema in the eyelids. No other system involvement was present in the examination. The patient's history did not include asthma, allergic rhinitis or allergy to any other food. It was learned that banana was given to the patient before the complaints has begun. However, it was learned that the patient didn't have any complaints when he ate a banana earlier. In the prick to prick test made with banana, an urticarial papule with a diameter of 3x3 mm was detected. In order to confirm the diagnosis, the patient was tested with oral provocation test with banana, 7 days after the symptomatic period. The provocation was initiated with 5 gr of banana; and was given in increasing doses with 20 min periods. In the 3rd dose (20 grams), 10 minutes after the banana was given, the patient developed abdominal urticaria, swelling of the eyelids (Figure-1) and complaints of wheezing. Bilateral rhoncus was present with auscultation and the measured blood pressure was normal. The patient was diagnosed with anaphylaxis and was given 0.01 mg/kg IM adrenaline, short-acting beta agonist with nebulizer and anti-histaminic therapy. The patient who recovered at the follow-up was discharged with antihistaminic and 3 days of oral methylprednisolone treatment. Recommendations were made to the patient and adrenaline auto-injector was prescribed and its use was described.

Figure-1: Bilateral angioedema in eyes

DISCUSSION

The frequency of food allergies is around 4-6% in children. Food allergies are high in the first year of life, and is seen at a rate of 8% in children up to three years of age. The developing allergic reactions can occur as Type I and Type IV allergic reactions or as a mixture of these two types. Type I reactions are reactions that develop within 2 hours of suspected nutrient ingestion. These reactions INCLUDE urticaria, angioedema, conjunctivitis, rhiniist, nausea, diarrhea, dyspnea and hypotension (5). The reaction that developed in our case was Type I reaction, which occurred during oral provocation with banana.

The most common cause of food allergies in children is cows' milk. Allergic reaction to banana ingestion is an uncommon nutritional allergy. Banana allergy has benn shown to be between 0.04% and 1.2% across the world in studies of different parts of the world (6). Banana allergy, which is an allergic reaction seen frequently children between 5-8 years of age, rarely causes an anaphylactic reaction. It has

been reported that anaphylaxis develops rarely in banana allergy, which is frequently caused by oral-cutaneous involvement (7). In these anaphylactic conditions, systemic reactions may frequently accompany such as skin involvement, hypotension, angioedema, respiratory arrest (8,9). In our case, we also had skin and respiratory system involvement during oral provocation test with banana.

In the treatment of allergic reactions due to banana ingestion, it is first necessary to remove the nutrients causing the allergic reaction from the diet. In addition, IM adrenalin should also be used in life-threatening situations such as anaphylaxis. In patients with food anaphylaxis history, adrenalin auto-injector should be prescribed, its use should be described and informed to carry them with themselves. We recommended to our case to remove the banana from the diet. We also prescribed adrenalin auto-injector and showed the family how to use it when necessary.

To confirm the food allergy diagnosis, oral provocation tests with suspected nutrient may be needed. However, allergic reactions may develop during oral food provocation tests. For this reason, provocation tests must be done in experienced centers and be prepared for the reactions that can develop. Anaphylaxis developed in also our case in the oral provocation test with banana to confirm the diagnosis.

As a result, children rarely develop anaphylaxis with bananas. Therefore, oral provocations for diagnostic purposes should be performed by experienced centers and precautions should be taken against reactions that can develop.

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