

Chicken meat induces oral allergy syndrome: a case report

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Background: The term oral allergy syndrome (OAS) describes an IgE-mediated reaction that takes place minutes after ingestion of some food to which the organism is previously sensitised. The clinical manifestations are typically localized to the mouth and throat. Oral allergy syndrome is commonly elicited by fresh fruits and vegetables, especially in subjects with hypersensitivity to pollens.

Methods: We report a patient with OAS following intake of chicken meat. We performed (1) skin prick test to chicken meat, egg, milk, and wheat and to common inhalants, (2) determination of serum specific IgE, (3) histamine release test, and (4) in vitro antigen-specific production of sulphidoleukotrienes and challenge test with chicken meat.

Results: Skin prick test was positive only for chicken meat. The patient had serum specific IgE, positive histamine release test, and specific production of sulphidoleukotrienes to chicken meat. We confirmed these findings by means of the challenge test.

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INTRODUCTION

The term oral allergy syndrome (OAS) is used usually to describe an IgE-mediated reaction that takes place minutes after ingestion of some food to which the organism has been previously sensitized. The clinical manifestations are typically localized to the mouth and throat: local itching, lip tightness or swelling, throat tightness and oral mucosal papules or blisters. These symptoms may be accompanied by systemic manifestations such as rhinitis, conjunctivitis, asthma, urticaria, angioedema, nausea, and vomiting.¹ Oral allergy syndrome is commonly elicited by fresh fruits and vegetables (eg, apple, melon, carrot, and tomato), especially in subjects with hypersensitivity to pollens.² It is rarely caused by other foods although it has been described in subjects allergic to eggs^{1,3} and shrimp.^{1,4}

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In this report, we describe an unusual case of OAS in a patient mono-sensitized to chicken meat.

CASE REPORT

A 21-year-old woman presented on several occasions with oral itching, lip swelling, hypersalivation and throat tightness immediately after ingestion of chicken meat. These symptoms resolved after administration of antihistaminics and steroids. She did not experience systemic manifestations. She was asymptomatic when eliminating chicken meat from her diet and she did tolerate hen egg and other avian meats including turkey.

METHODS

We performed skin prick tests using standardized allergenic extracts for chicken meat, hen egg (white and yolk), milk, wheat, and common inhalants (pollens, mites and mold) (Ifidesa-Aristegui, Bilbao). We considered as positive a wheal with an area more than 7 mm² (diameter greater than 3 mm).⁵ We also tested the chicken meat extract in two healthy, nonatopic controls.

Serum samples were obtained for total and allergen-specific IgE determi-

nations with the immunoCAP FEIA (Pharmacia, Uppsala, Sweden).

Histamine release test to chicken meat extract (Ifidesa-Aristegui, Bilbao) was performed according to the method described by Siraganian⁶ and modified by us⁷ using a Brann Luebbe autoanalyzer. We used as positive control polyclonal anti-IgE (Tago). We considered as positive a histamine release greater than 10%.

In vitro specific sulphidoleukotriene production to chicken meat was measured by means of CAST (cellular stimulation allergen test)-ELISA technique (Bühlmann Laboratories, Allschwil, Switzerland), using the same extract as for the histamine release test. Monoclonal anti-IgE (Le 27, Bühlmann) was used as a positive control and incubation buffer as negative control. We repeated these two last tests in the same healthy nonatopic controls to rule out nonspecific histamine or/and sulphidoleukotriene release.

Finally we performed a challenge test with chicken after informed consent was obtained from the patient. The challenge began with 500 mg of grilled chicken meat that the patient chewed for one minute and then swallowed. If no symptoms appeared in 15 minutes, the patient was asked to repeat the test, with double the amount of meat. The challenge lasted until the onset of objective symptoms or until the patient had ingested a total of 80 g meat.

RESULTS

Skin prick test to chicken meat was positive with pseudopods with a wheal of 11 × 12 mm, and negative to the other foods and common inhalants tested.

Total IgE was 58 kU/L. The patient had 0.74 kU/L (class 2) of serum spe-

cific IgE against chicken meat, but not to egg yolk and white.

Histamine release to chicken meat was positive (30.23%). Histamine release with anti-IgE was 13.95%, basal histamine release was 2.75 ng/mL, and total histamine release was 66.09%.

Specific sulphidoleukotriene production to chicken meat was positive (756.26 pcg/mL). Basal sulphidoleukotriene production was 4.42 pcg/mL and sulphidoleukotriene production with anti-IgE was 927.14 pcg/mL.

Skin prick test, histamine release test and in vitro antigen-specific sulphidoleukotriene production were negative for the two control subjects.

The challenge test elicited after ingestion of a total of 10 g of chicken meat, oral itching, lip swelling and throat tightness. These clinical manifestations progressively resolved after administration of parenteral dexchlorpheniramine.

DISCUSSION

We have described a case of OAS without systemic manifestations in a patient with monosensitization to chicken meat as demonstrated by determination of specific IgE against it, and confirmed by means of challenge.

Fresh fruits and vegetables are most commonly responsible for OAS, par-

ticularly in subjects also sensitized to pollens.

Chicken has been responsible for allergic reactions only rarely. In fact, there are few published data concerning chicken allergy.⁸⁻¹⁰ In two of these papers,^{8,9} antigenic relationships between hen egg proteins and chicken meat proteins were described. This was the reason we tested for specific IgE to hen egg in this patient although she did not experience any clinical manifestations after eating egg.

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