

Egg Allergy in infancy

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Abstract

Egg allergies are one of the most common allergies of childhood and the reactions may vary from mild to severe. A family history of egg allergy or atopy is a risk factor for egg allergy. Most food-induced allergic reactions occur on first known oral exposure, especially in the case of eggs and peanuts. We report a case of nine months old infant who developed egg allergy (contact dermatitis) after contact with egg white, with a positive family history of atopy and egg allergy.

Keywords

Egg allergy, contact dermatitis, infancy.

Introduction

Food allergy is defined as an adverse reaction due to abnormal immune response resulting from the ingestion of food or additive.¹

Food allergy occurs in atopic individuals who produce IgE antibodies to food proteins. Foods most commonly involved are egg, milk, peanut, sesame, fish, seafood, wheat and soy.

Egg white allergy occurs when the immune system of the body mistakes the protein for an allergen and reacts against it. The allergic reaction is easily triggered in those people with egg allergy when they come in contact with the egg either through touching, smelling or eating. Reactions usually occur immediately after food ingestion^{2,3} and may manifest as an acute rash around the mouth with redness and swelling of the face. More severe reactions progress to urticaria, angioedema, breathing difficulty, vomiting, and/or anaphylactic shock, sometimes resulting in death.^{4,5}

Some people are allergic to the whole egg, while others are allergic to either the yolk or egg white. Egg white

allergy in children is the most common and the reaction may vary from mild to severe. The severity of egg allergy may occur immediately and can even be life-threatening.

Case Report

Nine months old male was brought with complaints of erythematous itchy papular rash over perioral area along with swelling of the lips within half an hour following an attempt of feeding eggwhite over the area of contact of the egg. Fortunately, parents gave the history that the infant did not ingest the egg. There was no history of vomiting, loose stools, breathlessness, wheezing and skin lesions elsewhere in the body. And no history of any new food ingestion prior to reaction. He was delivered by elective Lower Segment Caesarean Section and had developed neonatal sepsis with pneumonia requiring NICU admission and ventilatory support.

On dermatological examination; erythematous pruritic, ill-defined confluent urticarial papules and plaques on the perioral area without angioedema were noted. (Figure 1 and Figure 2)

On past history at 6 months of age, he had developed erythematous maculo-papular rash over face and trunk following ingestion of egg. The skin lesions subsided after few hours and he was treated with oral anti-histamine. Similar type of skin lesions again re-occured after feeding of egg at 7 months of age. During both episodes there was no history of loose stool, vomiting, breathlessness.

However, there were no symptoms after ingestion of chicken since 6 months of age.

There was positive family history of allergy with egg in maternal uncle and aunt in whom unlike this baby, had predominant abdominal symptoms like cramps and dyspepsia.

His total leukocyte count was 7080/mm³, Neutrophil 32%, Lymphocyte 60%, Monocyte 2%, Eosinophil 6%.



Figure 1



Figure 2

The parents were counselled and advised to eliminate egg and egg containing food from the diet, and come to the hospital if he develops any adverse reaction.

Comment

We are going to review his egg allergy in the subsequent months. Recent literature reported two-third children may eventually outgrow the condition by school age.

Discussion

Population-based studies show that the prevalence of allergy to egg whites among children is between 1.5 and 3.2%.⁶⁻⁸

Egg white allergens include ovalbumin, ovomucoid, ovomucin, ovotransferrin and lysozyme⁹. There are also multiple allergenic proteins in egg yolk, with the most common being alpha-livitin. The reduction in allergenicity by heat or gastric digestion provides an explanation for those children who react to uncooked but not cooked egg,^{10,11} and for subjects who react to egg after cutaneous contact but not after ingestion.¹² It is also observed that children who are allergic to hen's eggs are not allergic to chicken¹³.

Children are frequently found to be sensitized without having a previous history of egg ingestion¹².

The clinical onset is usually in the first year of life, often with the first introduction of a food, and is strongly associated with atopic eczema.

Multiple foods are frequently involved in children but, from around 5 years, allergy to only one or two foods is the normal³. Most children outgrow milk, egg, soy and wheat allergies before they reach school age.

Egg allergy generally has a good prognosis. Despite recent advances in oral immunotherapy trials, the treatment of egg allergy currently relies on avoidance of egg-containing foods until tolerance has developed. It remains unclear whether the ongoing low-dose exposure to egg proteins in cooked foods improves the natural history of egg allergy¹⁴. Families of children with food allergies need clear guidance on how to prevent accidental exposure to allergens, recognize symptoms of anaphylaxis, and respond appropriately. Since most children will outgrow their allergies to milk, egg, soy and wheat, follow-up testing will help monitor the development of tolerance and indicate when these foods can be safely reintroduced into the child's diet.

Egg avoidance advice is the cornerstone of management. Egg allergy often resolves and re-introduction can be achieved at home if reactions have been mild and there is no asthma. Patients with a history of severe reactions or asthma should have reintroduction guided by a specialist. All children with egg allergy should receive measles, mumps and rubella (MMR) vaccination. Influenza

and yellow fever vaccines should only be considered in egg-allergic patients under the guidance of an allergy specialist. This guideline was prepared by the Standards of Care Committee (SOCC) of the British Society for Allergy and Clinical Immunology (BSACI)¹⁵.

Conclusion

As the prevalence of food allergies rises worldwide, it is important that physicians are able to accurately diagnose and manage this problem at the primary level. Patient's history is the most significant aspect of the evaluation; this is followed by physical examination, which often reveals signs of allergic reaction. We must also continue to educate all those involved in the care of the child. Moreover, prepare them to handle an emergency -such as anaphylactic shock. As novel and effective methods emerge for modulating the immune system, we can say that the future is promising for those suffering from food allergies.

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