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Hen egg hair mask-induced food allergy: a case report

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SUMMARY

We report the case of a 46-year-old woman who treated her hair with a homemade egg-white based mask. After one year of weekly applications, the ingestion of egg triggered rhinitis, choking and systemic urticaria. Though the breakdown of oral tolerance to egg has been reported elsewhere in the literature, to the best of our knowledge, this is the first case of hair mask-induced allergy.

Introduction

There has been much media hype surrounding the health benefits bestowed by natural folkloric remedies. One example are hen egg hair masks that are recommended as a tonic for hair loss and dryness, of which hundreds of empirical formulas are readily available online. We report the case of a 46-year-old woman who treated her hair with a homemade egg-white based mask. The woman usually massaged a butter knob-sized quantity of the paste into her hair, which she would let leave in place for two days once a week. After one year of weekly applications, she experienced a flu-like syndrome with slight rise in her temperature and rhinitis which would last for a few days. From that point onwards, the ingestion of egg triggered rhinitis, choking and systemic urticaria. Her symptoms recurred whenever she ingested eggs, chicken and

turkey meat. Eventually, even handling eggs caused immediate contact urticaria. The symptoms gradually worsened to the point that she required emergency hospital visits. On allergological work up skin prick tests were positive with both egg yolk and white, chicken and turkey meat commercial extracts (Lofarma allergeni Milano Italy) whereas no reactivity to the most common airborne allergens was detected. Serum specific IgE screening confirmed the skin test results (Table 1). The detection of IgE to 103 purified allergens (ISAC® Microarray, Phadia, Uppsala, Sweden) confirmed egg hypersensitivity although chicken serum albumin (Gal d 5) scored negative (Table 1) despite her clinical allergy to poultry meats. A moderate level of aspecific bronchial hyperreactivity (PD20 methacolin Fev1 305µg) was detected, and did not depend on respiratory allergy, recent respiratory infection, and other causes. Though the breakdown of oral to-

Table 1 - Results of total end specific serum IgE for egg allergens

| ImmunoCap Specific IgE (U/ml) | |
|----------------------------------|--------|
| Total serum IgE | 113 |
| Serum specific IgE | |
| Albumen (egg white) | 42.800 |
| Ovalbumin | 19.500 |
| Ovomucoid | 20.100 |
| Yolk | 11.400 |
| Turkey meat | 1.470 |
| Chicken Meat | 0.880 |
| ImmunoCap ISAC® Microarray (ISU) | |
| Ovomucoid (nGal d 1) | 7.3 |
| Ovalbumin (nGal d 2) | 3.4 |
| Ovotransferrin (nGal d 3) | 2.7 |
| Chicken Seroalbumin (nGad d5) | <0.3 |

lerance to egg has been reported elsewhere in the literature (1, 2), to the best of our knowledge, this is the first case of hair mask-induced allergy.

The overall epidemiological impact of applying hen egg-based hair masks on egg hypersensitivity may be negligible; however, the severity of this case requires that the scientific community be made aware of potential risks associated with homemade egg-based hair masks.

This case highlights two main features of the pathophysiology of food allergy. First, oral tolerance to an allergen can be broken down when the contact with the immune system occurs via organs other than the gut, such

as respiratory tract or the skin; as a consequence, the onset of food allergy in adults requires further investigation focusing on the interplay between the local immunity of different organs to the same (or homologous) allergen (3, 4).

Second, the detection of the aspecific bronchial hyper-reactivity independent from the most common causes worsening the bronchial reactivity is consistent with recent data suggesting an under-recognized role of the food allergy as risk factor for severe asthma (5).

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