

Snail ingestion and asthma

SEVERAL CASES of allergic reactions which take place within a few minutes or hours after food ingestion have been reported. These reactions can trigger gastrointestinal, cutaneous, and/or respiratory symptoms. In some patients, respiratory symptoms occur when cross-reactivity between ingested food and inhaled allergens is present (1, 2).

Our observations refer to four atopic subjects allergic to house-dust mite who unexpectedly experienced severe asthma attacks after snail (*Limax agrestis*) ingestion.

■ Case no. 1 was that of a 42-year-old woman who had complained of asthmatic symptoms for about 8 years. We performed a prick test that showed sensitization to *Dermatophagoides pteronyssinus* and *D. farinae*. PRIST and RAST showed high serum IgE levels and class 4 sensitization to house-dust mite, respectively.

Immunotherapy induced remarkable clinical benefits.

Five years after the first clinical manifestation, the patient came again under our observation for an acute episode of asthma. On the basis of a meticulous history, we hypothesized a correlation between the asthma attack and snail ingestion. This hypothesis was later confirmed by an analogous episode which occurred under the same circumstances. Skin tests, performed with snail extracts by the "prick-by-prick" technique, were positive.

■ Case no. 2 was that of a 9-year-old boy with allergic rhinitis who had his first asthma attack after snail ingestion. We performed a prick test that showed sensitization to *D. pteronyssinus* and *D. farinae*. RAST showed class 4 sensitization to house-dust mite. Skin tests performed by the "prick-by-prick" technique were positive.

■ Case no. 3 was that of a 50-year-old woman who was sensitized to house-dust mite, had suffered from asthma for more than 18 years, and had often been treated with inhaled steroids and β_2 -adrenoceptor agonists.

A few minutes after snail ingestion, this patient experienced a severe asthma attack which required hospitalization and steroid therapy at high doses. After she had been discharged from the hospital, we performed the "prick-by-prick" test with snail extracts, which triggered the formation of a wheal.

■ Case no. 4 was that of a 26-year-old man, nephew of the above-mentioned woman (case no. 3), who suffered from allergic asthma, and who was receiving immunotherapy with dust-mite extracts. He showed particular interest in the respiratory symptoms manifested by his aunt after snail ingestion and underwent the test for this food, experiencing within a few minutes conjunctivitis and rhinitis followed by wheezing.

■ After eliminating snails from the diet, none of these subjects suffered severe asthma attacks. The relationship between snail ingestion and asthmatic symptoms, as suggested by the history of each patient, was confirmed by the results of the "prick-by-prick" test. However, the mechanism underlying the cross-reactivity between snails and house-dust mite is still not fully understood.

Carrillo et al. (3) recently showed that extracts of shellfish may induce basophil degranulation in patients allergic to house-dust mite.

Furthermore, cross-reactivity between shellfish and *D. pteronyssinus* has been demonstrated by RAST inhibition.

It has also been suggested that hemocyanin is the antigen responsible for the cross-sensitization between shellfish and dust mite (4), and it is also likely that hemocyanin may be involved in the cross-reactivity between snails and house-dust mite.

Key words: asthma; cross-reaction; food allergy; mite allergy; snails.

Patients allergic to mite may exhibit wheezing after eating snails.

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