

# The Oral Allergy Syndrome

## ORAL ALLERJİ SENDROMU

Oktay TAŞKAPAN\*, Yavuz HARMANYERİ\*, Bilal DOĞAN\*

Assoc.Prof., Dept. of Dermatology & Allergy, GATA Haydarpaşa Teaching Hospital, Istanbul, TURKEY

### Summary

Here we present a case of "oral allergy syndrome" characterized by local and systemic symptoms following green lentil contact. Dermatologists should keep in mind that allergic rhinitis and/or bronchial asthma patients may present with orofacial symptoms resulting from cross-reactivity between inhalant and food allergens.

**Key Words:** Oral allergy syndrome, Allergen cross-reactivity, Contact urticaria

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### Özet

Burada, yeşil mercimek ile teması izleyerek ortaya çıkan, lokal ve sistemik semptomlarla kendini gösteren bir "oral allerji sendromu"olgusu sunuyoruz. Dermatologlar allerjik rinit ve/veya bronşial astmalı olguların, solunum yolu ve besin allerjenleri arasındaki çapraz reaktiviteden kaynaklanan, orofasiyal semptomlar geliştirebileceklerini unutmamalıdır.

**Anahtar Kelimeler:** Oral allerji sendromu, Allerjen çapraz reaktivitesi, Kontakt ürtiker

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The "oral allergy syndrome" (OAS), most frequently observed in pollen-allergic subjects, may be regarded as a special form of "contact urticaria syndrome" which comprises both local and systemic immediate cutaneous contact reactions. The symptoms of this syndrome are usually localized in mouth and throat. However, the oral symptoms (itching of mouth, palate, and throat; swelling of lips, tongue and palate, and hoarseness), occurring within minutes after oral contact with the food in question, can be accompanied by systemic reactions like urticaria, rhinitis, asthma and/or reactions in the gastrointestinal tract. The immediate character of these reactions, in combination with the presence of specific IgE antibodies, confirms an IgE-mediated, type-I allergic response (1,2).

### Case Report

A 21 year-old man presented with a 16-year history of seasonal hay fever, shortness of breath, and food allergy. Detailed history revealed that he

developed itching of lips, mouth, palate and throat; and then swelling of lips, palate, and hoarseness soon after oral contact with some kind of foods including beans, lentils, green peas, and peanut. General physical examination was normal except hyperemia and congestion on nasal mucous membranes. Whole blood count, sedimentation rate, nasal smear, and total eosinophil count were within normal limits. Total IgE was found to be high (1008.40 IU/ml; normal value: <120 IU/ml). Chest x-ray revealed no abnormal findings. "Skin prick tests" with inhalant allergens were found to be unremarkable (+/-). However, 3(+) and 2(+) skin reactivity were observed against "grass pollen mix" and "tree pollen mix" extracts respectively in intradermal tests. Following results were obtained in "food skin prick test": peanut: 9x4 mm, carrot: 2x3 mm, orange: 2x3mm, negative control: 1x2 mm. The patient had no complaints regarding the intake of carrot and orange. Bean, lentil, and green pea extracts were absent in our skin test panel.

**Table 1.** Allergen cross-reactivity

<b><i>Birch pollens</i></b>	Hazelnut, apple, peach, cherry, walnut, pear, almond, plum, kiwi, potato peel, brazil nut, cashew nut, tomato, carrot
<b><i>Grass pollens</i></b>	Beans, lentils, green peas
<b><i>Mugwort pollens</i></b>	Celery, parsley, chives, banana, melon, parsnip, vermouth
<b><i>Ragweed pollens</i></b>	Watermelon, honeydew melon, cantaloupe, banana, courgette, cucumber

Since an official document showing the exact nature of patient's allergic status is required, open food challenge test was planned under careful observation in hospital setting where facilities are available to treat severe anaphylactic reactions.

After obtaining informed consent, boiled green lentils were applied to patient's lips for 10 minutes, and then he kept them in mouth for an additional 10 minutes before spitting. Five to ten minutes later, the patient developed itching and swelling of the lips (urticarial reaction), lingual and oral itching, facial erythema, conjunctival itching and hyperemia, nasal congestion; and finally coughing and wheezing. His symptoms completely resolved in fifteen minutes upon proper and prompt therapeutic intervention including O<sub>2</sub>, epinephrine (0.3 ml, 1:1000 subcutaneously), antihistamine (pheniramine maleate, 50 mg, intramuscularly), and  $\beta$ 2 agonist inhalation (formoterol fumarate dihydrate, 12 $\mu$ g).

### Discussion

Allergy to fruits of the family of *rosacea* (apple, peach, pear, etc.) in patients suffering from birch pollinosis is the best known example of pollen-related OAS (3). However, in contrast to vegetable allergens, OAS caused by pollen-related allergy to fruits is hardly ever accompanied by gastrointestinal or systemic reactions (2,4). The Table-1 below shows the common sensitivities to

fruit and vegetables in pollen-allergic subjects due to cross-reactivity (5).

### Conclusion

- This is a typical case of OAS, a distinct clinical entity, which is classified in the spectrum of "contact urticaria syndrome".

- Both in-vivo and in-vitro diagnostic procedures have limited value in OAS. Positive reactions are not always compatible with clinical symptoms. The most reliable diagnostic procedure is "double-blind placebo controlled food challenge" (2). However, challenge test is not only difficult and time-consuming, but also it requires sophisticated technical facilities. Open food challenge test is an alternative approach.

- Dermatologists should be aware of the cross-reactivity (cross-reactive epitopes) between inhalant and food allergens (for example, between pollens and fruits/vegetables/nuts) in patients with respiratory allergic disease (allergic rhinoconjunctivitis and/or allergic bronchial asthma) presenting with cutaneous (orofacial) symptoms.

### REFERENCES

1. Ortolani C, Spano M, Pastorello EA, Bigi A, Ansaloni R. The oral allergy syndrome. *Ann Allergy* 1988; 61: 47-52.
2. Van Ree R. The Oral Allergy Syndrome. In: Amin S, Lahti A, Maibach HI (eds). *Contact Urticaria Syndrome*, 1<sup>st</sup> edition, Boca Raton, CRC Press, 1997: 289-99.
3. Lahti A, Björkstén F, Hannuksela M. Allergy to birch pollen and apple, and cross reactivity of the allergens studied with the RAST. *Allergy* 1980; 35: 297-300.
4. Ortolani C, Pastorello EA, Farioli L, Spano M, Pravettoni V, Berti C, Incorvaia C, Zanussi C. IgE-mediated allergy from vegetable allergens. *Ann Allergy* 1993; 71: 470-6.
5. Mygind N, Dahl R. Allergic Rhinitis. In: Jackson WF (ed). *Color guide to the diagnosis and management of allergic disorders*, 1<sup>st</sup> edition, London, Mosby-Wolfe Medical Communications, 1997: 1-2.

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**Yazışma Adresi:** Dr.Oktay TAŞKAPAN  
Dept. of Dermatology & Allergy  
GATA Haydarpaşa Teaching Hospital  
İstanbul, TURKEY