

CASE REPORTS

Fragrances as a cause of food allergy

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ABSTRACT

A 34-year-old woman referred episodes of gastrointestinal disorders and sometimes angioedema of the lips which appeared within 2 hours from the ingestion of packed food like biscuits, cereals or fruit juice. A patch test with the standard European series and with food preservatives was positive for fragrances mix. The avoidance of packed food labelled as containing flavours among the ingredients caused the disappearance of the above reported symptoms.

Key words: Angioedema. Flavouring. Food allergy. Food labelling. Fragrances.

INTRODUCTION

Fragrances are ubiquitous and part of many domestic and occupational products and they are, following nickel, the most frequent patch test allergen¹.

Furthermore, fragrances can be present in foods as flavourings².

Schrankel et al. (2002) defined "flavour" as the sum total of the sensory responses of taste and aroma combined with the general tactile and temperature responses to substances placed in the mouth, and further stated that "flavour" can also mean any individual substance or combination of substances used for the principal purpose of eliciting these responses³.

Only a few reports exist of food allergic reactions to flavours^{4,5}.

IgE-mediated allergic reactions from flavouring substances are even more rare and, usually, due to the presence of traces of milk-proteins, peanuts flavour, soybeans, eggs and seafoods⁵.

Since the use of substances derived from allergenic sources is usually not revealed on food labels, physicians would not easily be able to identify flavouring components as the causes of allergic reactions².

CASE REPORT

This report presents a case of food allergy caused by sensitisation to flavours.

A 34-year-old woman reported recurrent episodes of abdominal pain, nausea, diarrhoea and sometimes angioedema of the lips; these episodes had began 6 months before and appeared within 2 hours from the ingestion of packed food like biscuits, cereals or fruit juice.

Her relevant history included an erythema reaction after using bath foam about a year before. Past medical history was, otherwise, non contributory; there was no evidence of drug hypersensitivity.

She reported, moreover, the unsuccessful control of clinical manifestation using antihistamines.

Skin prick tests and specific IgE for the most common inhalant and food allergens were negative.

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A prick by prick with a mash of the single foods causing manifestations (biscuits, cereals, fruit juice) resulted negative.

A patch test with the standard European series and with food preservatives, such as metabisulfites benzoates and salicylates, was positive (+++), following the ICDRG criteria) only for fragrances mix (alpha-hexyl cinnamic aldehyde, cinnamic alcohol, eugenol, amyl cinnamic aldehyde, hydroxycitronella, geraniol, isogenol, oak moss absolute). Therefore, we suspected that her symptoms were caused by the fragrances used as flavours in foods. For this reason we carried a specific, double-blind and controlled oral challenge with the above reported mash of foods and the patient had nausea, diarrhoea and angioedema after their ingestion. Then we advised the patient to avoid packed foods labelled as containing flavours among the ingredients. A treatment with disodium cromoglycate was also prescribed for three months.

The patient reported the disappearance of the above symptoms during the treatment and at a follow-up visit one year later, only avoiding from her diet foods labelled as containing flavours.

We considered that flavours triggered the patient's symptoms as avoidance of manufactured foods containing flavourings lead to clinical improvement.

DISCUSSION

Flavouring substances have unique characteristics that set them apart from other food additives, thus, leading to the need for an alternative approach for as-

sessing their safety in use. These characteristics include the fact that there is a large number of chemically defined flavoring substances in use⁶.

Many of the ingredients used in foods are flavouring agents. A large number of different flavoring substances are used in foods. Commercial flavouring formulations can often contain dozens, if not hundreds, of different chemicals².

Fragrances can, also, caused chronic urticaria by releasing histamine and vasoactive substances without involving immunologic mechanisms like in contact urticaria⁷.

We considered of interest to report this case as it is a rare case of food allergy and not contact allergy to fragrances; for this reason it would be desirable to have the single flavours listed among the ingredients in packed foods.

REFERENCES

1. Heydorn S, Mennè T, Johansen JD. Fragrance allergy and hand eczema – A review. *Contact Dermatitis* 2003;48:59-66.
2. Steve L Taylor, Susan L Hefle. Ingredient and labeling issues associated with allergenic foods. *Allergy* 2001;56(Suppl. 67):64-9.
3. Schrankel KR, Bolen PL, Peterson R. Safety assessment of flavour ingredients. In: Watson DH, ed.: *Food Chemical Safety*, 2002 vol. 2., Chapter 9, pp. 207-27.
4. Taylor SL, Dormedy ES. The role of flavouring substances in food allergy and intolerance. *Adv Food Nutr Res* 1998;42:1-44.
5. Taylor SL, Dormedy ES. Flavouring and colorings. *Allergy* 1998;53(Suppl 46):80-2.
6. Kenneth R. Schrankel. Safety evaluation of food flavourings. *Toxicology* 2004;198(1-3):203-11.
7. Diba V C, Stantham. Contact urticaria from cinnamal leading to anaphylaxis. *Contact Dermatitis* 2003;46:119.