

Brief communications

Sesame seed oil anaphylaxis

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Although anaphylactic reactions to sesame seed have previously been reported,¹ there has been no evidence to suggest that sesame seed oil is allergenic. Studies involving cottonseed,² peanut,³ and soybean⁴ allergy implicated only the protein portion as the allergen. At least in one study, peanut oil⁵ was not found to be allergenic in peanut-sensitive individuals. This article is about a patient who has had recurrent anaphylactic reactions, most of which have been linked to SSA but, particularly, to sesame oil.

CASE REPORT

A 46-year-old businessman was observed because of recurrent bouts of severe food reactions for the past 18

Abbreviations used

SSA: Sesame seed antigen

BHR: Basophil histamine release

years. He found that many of the reactions could be attributed to ingestion of sesame products, particularly sesame oil. During these attacks, he would first experience a pin-and-needle sensation on his face, to be followed shortly by onset of chills, shakiness, and abdominal cramps after eating.

On several occasions, he also experienced vomiting, fecal incontinence, and fainting. On other occasions, only a pin-and-needle sensation on his face, flushing, pruritic welts, and occasionally facial and lip swelling. Since the patient traveled globally in his business, he was concerned that avoidance of inadvertent exposure to sesame product was nearly impossible. He characterized the onset and severity of his reactions to sesame products as follows: severity of symptoms, oil > ground > cooked whole > raw seed (In

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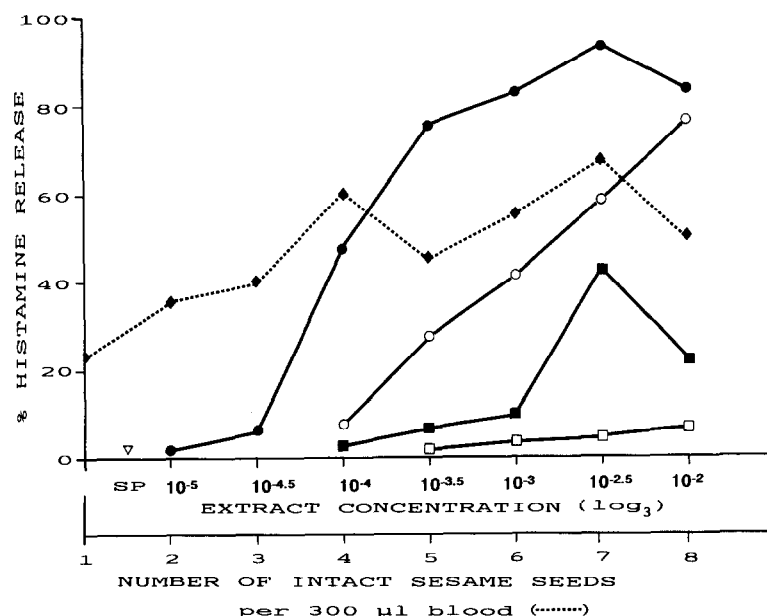


FIG. 1. BHR responses to in vitro challenges with various sesame seed preparations: commercial extract, 1:10 wt/vol, also used for skin test ($\square$ — $\square$); raw extract, freshly prepared in house, 1:10 wt/vol ($\bullet$ — $\bullet$); same extract, but cooked ($\circ$ — $\circ$); sesame seed oil from commercial source ($\blacksquare$ — $\blacksquare$) and intact seeds ($\blacklozenge$ — $\blacklozenge$); spontaneous release (∇).

descending order); onset Variable (min) 20, 60 to 90, 20 to 45.

Except for a dryness sensation at his nasal passages, he denied having had nasal, eye, or respiratory symptoms. There was no history of atopic disorders, angioedema, hives, or anaphylaxis in his family. Except for moderate nasal mucosal edema at the right and slightly injected bulbar conjunctivae, results of physical examination were unremarkable.

His complete blood cell count, erythrocyte sedimentation rate, and total hemolytic complement were all normal, and IgE was 130 IU/ml.

Skin testing revealed a 4+ Multitest response (Lincoln Diagnostics, Decatur, Ill.) to whole commercial sesame seed oil and only a 2+ intracutaneous response to commercial SSA at 1:1000 concentration (Hollister-Stier Laboratories, Spokane, Wash.). RAST was only marginally positive to sesame seed oil, commercial SSA, and whole sesame seed. However, BHR revealed (Fig. 1) significant histamine release with SSA (90%) prepared by one of us (I.H.), cooked sesame seed extract (80%), commercial sesame seed oil (40%), and intact sesame seed (70%), but only minimally with commercial SSA (6.3%). No histamine release was found in whole blood of four control subjects, including two subjects with moderately strong skin test reactions to commercial SSA.

DISCUSSION

Allergic reaction to vegetable oils, to our knowledge, has not been reported previously. Certainly, oil from peanut⁵ is not believed to be allergenic, even among subjects highly allergic to peanuts. Although this patient was not challenged to SSA for obvious reasons, both the large skin test response and the positive BHR assay to sesame oil and seed products support his clinical history of anaphylactic reactions to

such products. The negative RAST to SSA is not entirely surprising because it was also found in one of the four cases of sesame seed allergy previously reported.¹ Possible explanations for the negative RAST include the removal of the relevant allergen during the extraction process, the dependency of RAST technique on the presence of a relatively high serum IgE level, and/or the interference of lipid on allergen binding to the RAST matrix. However, in the absence of other confirmatory test for specific IgE to SSA, the mechanism for this patient's SSA anaphylaxis remains to be established. Our findings are also in agreement with the observation by other workers that commercial extracts are often antigenically unreliable for detecting food allergies.

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