

Letters

Severe allergic reaction to allspice, a hidden food allergen



A wide variety of spices are in culinary use for food flavoring, coloring, and preservation.¹ Spice allergy is uncommon, and it is estimated that around 2% of food allergy reactions in adults are caused by spices.² Spices have the potential for being hidden food allergens.³ The allergenic proteins in spices are not well characterized, and commercial skin test extracts are not available, limiting widespread clinical testing. For these reasons, spice allergy is likely underdiagnosed. Common spices that are reported to cause allergies include mustard, coriander or cilantro, fennel, saffron, parsley, and cumin.³ Allspice, also known as Jamaican pepper, is a common ingredient in several foods like ketchup, Japanese curry powder, Jamaican jerk seasoning, stews, and several spiced desserts. There are no reports of allergic reactions from allspice consumption in the literature.

A 41-year-old woman with chronic seasonal allergic rhinitis and no previous history of known food allergies presents to the clinic for evaluation of 4 episodes of severe allergic reactions within the past year with an unknown source. Each time, her symptoms were similar and included lip swelling, generalized hives, vomiting, and difficulty breathing that resolved with self-administration of diphenhydramine. The first episode occurred while she was dancing and drinking peach schnapps. During the next instance, she reacted after dancing and drinking sangria with peaches infused in it. The third episode happened while she was sitting and drinking a pumpkin spice latte. The final reaction happened 15 minutes after eating Thai food and drinking mango juice. She has been avoiding all these foods since the reactions happened. She denied any history of intermittent or chronic episodes of hives or angioedema in the past.

Skin testing for environmental allergens was positive for ragweed, dust mite, weed mix, mugwort, and histamine (positive control) and negative for normal saline (negative control). On the basis of the history of peach ingestion during the first 2 reactions, it was suspected to be the causative agent. However, an oral food challenge to fresh peach was negative. The list of ingredients in pumpkin spice latte, the cause of her third reaction, was reviewed and found to contain ginger, nutmeg, allspice, and cinnamon. Prick-to-prick skin testing was performed with ginger, nutmeg, and allspice and revealed a positive reaction to allspice (Fig 1). Prick-to-prick testing was negative for ginger and nutmeg (Fig 1). Cinnamon was not tested as the patient had known clinical tolerance after these recent reactions. It is not known whether a prick-to-prick test to allspice could be irritating. Therefore prick-prick

tests were performed on 2 healthy volunteers, and no reaction was observed (Fig 1).

The patient then underwent an oral food challenge to allspice. A minimal amount of allspice was placed on the oral mucosa on the inside of the patient's lip using a cotton swab. Within 5 minutes, she developed lip angioedema, generalized urticaria, sneezing, ocular pruritus, and lacrimation. She was treated with oral diphenhydramine with a resolution of symptoms.

The reaction to oral food challenge validates the positive skin prick to allspice. In light of the outcome of the allspice food challenge, we reviewed the recipes of her mixed drinks and identified them as an ingredient common to these recipes. We suspected that the Thai food she reacted to also had allspice. However, we could not get any information on its ingredients. The differential diagnosis included exercise-induced anaphylaxis. However, at least 1 of the episodes occurred without any physical activity. The patient was prescribed an epinephrine autoinjector and provided avoidance instructions for allspice.

Allspice is obtained from the dried unripe berries of the tropical evergreen plant *Pimenta dioica*, a member of the Myrtaceae family. The tree is native to West Indies and Central America and extensively grown in Jamaica. Allspice was so named because the aroma from the dried berry resembles a combination of cloves, cinnamon, and nutmeg.⁴ Ground or whole allspice is widely used around the world in food preparation. It is one of the most important Caribbean condiments and is used in jerk seasoning, moles, and pickling. "Pimento dram," a liqueur produced from allspice is used in making various cocktails. In Europe, allspice is mainly used in desserts like pumpkin pies, bread pudding, spice cakes, and gingerbread.⁵ It is popular as a carminative and in alternative medicine as an analgesic.⁵ Allspice is also used in herbal therapies and as a perfume for soaps.

The allergens of allspice have not been characterized.⁶ It is noteworthy that our patient is sensitized to mugwort and ragweed pollens, which are implicated in several food-pollen cross-reactivity syndromes.⁷ Some well-known examples include celery-birch-mugwort-spice syndrome and mugwort-mustard allergy syndrome. These are primarily caused by sensitization to the pan-allergens, profilins.⁷ Further research is needed to characterize the allergens in allspice. Cross-reactivity of allspice to other members of Myrtaceae family like guava, eucalyptus, clove, and acca merit consideration. Diagnosis can be made by a prick-to-prick test followed by an oral food challenge. Management is strict dietary avoidance. However, this is a challenge given that spices are often sold as blends and manufacturers may not list individual spices in prepared foods.⁸

We present the first case report of a food challenge that confirmed allspice allergy. We would like to emphasize the potential of

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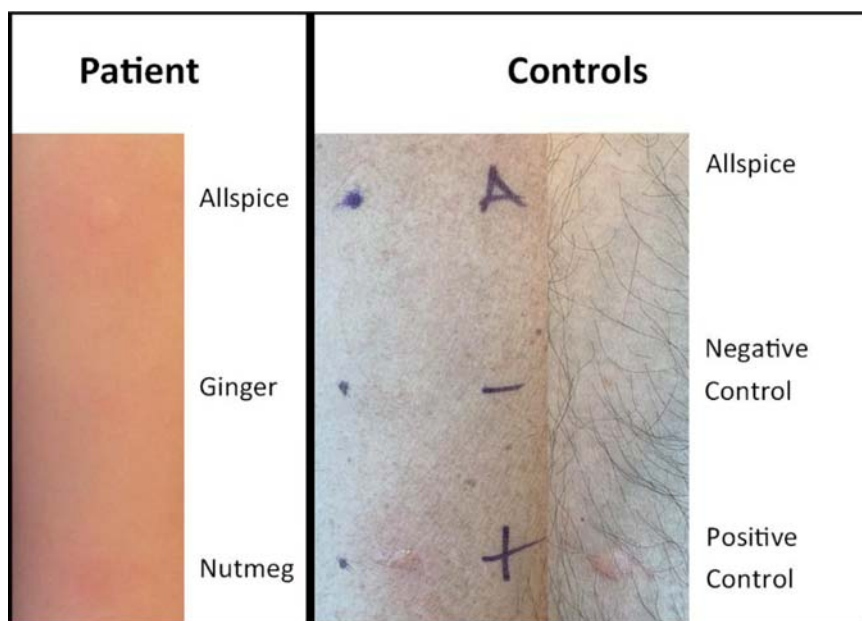


Figure 1. Positive prick-to-prick test to allspice in the patient (left) and negative allspice prick-to-prick test in volunteer controls (right).

developing severe allergic reactions to spices and to highlight the importance of checking for hidden allergens in patients presenting with allergic reactions without a known cause. Because of its widespread use in spices, processed foods, and cosmetic products, allspice can be a potential hidden allergen when it is an ingredient.

Prudhvi Regula, MD*
Deborah Edelman, MD†
Denisa Ferastraoraru, MD*
Manish Ramesh, MD, PhD*
Golda Hudes, MD, PhD*

* Albert Einstein College of Medicine/Montefiore Medical Center
Bronx, New York

† Icahn School of Medicine at Mount Sinai
New York City, New York
prudhviregula@gmail.com

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Decreased food allergy-specific anxiety and increased general anxiety in parents of children with food allergies during the coronavirus disease 2019 pandemic



The coronavirus disease 2019 (COVID-19) pandemic continues to affect the mental health of children and youth worldwide, particularly for those with chronic physical conditions¹ and socioeconomic adversity.² For children and youth with food allergies (FA), the early COVID-19 pandemic led to immediate changes to allergy-related services³; emergency department visits for anaphylaxis also

decreased.⁴ Youth whose parents report negative impacts of COVID-19 have also reported poorer well-being, affected by difficulties accessing “safe” foods and health services.⁵

Moderate anxiety in parents of children with FA is generally adaptive given risks of allergen exposure. However, excess anxiety can lead to increased parental burden and impaired health-related quality of life.⁶ FA-specific anxiety (FAA) includes emotional, cognitive, behavioral, and physical domains; although associated with generalized anxiety—in which worries about a number of events or activities are difficult to control—it is a distinct construct.⁷ To our knowledge, there have been no analyses of impacts of the pandemic on parental FAA and implications for family support. In this study, we sought to describe parental experiences of FAA during the COVID-19 pandemic and to evaluate the relationship between general anxiety symptoms and FAA.

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