
Hot dog vapor-induced status asthmaticus

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Background: Asthma induced by the inhalation of food vapors is unusual and indicative of extreme allergy. Identification of the specific cause and subsequent avoidance is essential.

Methods: We report a patient with asthma who had status asthmaticus following inhalation of boiling hot dog vapors. Prick skin tests were performed to various ingredients of the offending hot dog including chicken, pork, potato, and the aeroallergens.

Results: Prick skin tests reacted strongly to chicken and mildly to pork and potato. There was no reaction to aeroallergens. Our patient has not had any acute asthma after avoiding eating and exposure to chicken and hot dog vapors.

Conclusions: Exquisite allergy to chicken was responsible for acute asthma.

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INTRODUCTION

Inhalation of food vapors is an unusual, although a well recognized cause for acute asthma and reflects exquisite sensitivity. Recognition of the specific etiology and avoidance of the offending food is critical. The offending food, such as fish, is usually self-evident. In this report, we describe the occurrence of acute asthma following inhalation of boiling hot dogs and the subsequent identification of chicken in the hot dog as the offending allergen.

CASE REPORT

A 10-year-old boy with mild asthma, who had only required aerosol bronchodilators on an as needed basis, developed severe asthma immediately after inhalation of vapors from boiling hot dogs. At the time of this acute exacerbation, he was sitting in the living room watching television and his mother was in the adjacent kitchen cooking hot dogs in boiling water. Within five minutes of inhaling vapors, he started wheezing and became

short of breath. An albuterol nebulizer treatment did not alleviate his symptoms, and he was taken to the hospital because of progressive asthma. In the emergency room, his blood gases were pH, 7.01; PCO_2 , 82; and PO_2 , 26. He was intubated and hospitalized. He was treated with aerosol bronchodilators, an intravenous terbutaline drip, and intravenous steroids. He improved quickly and was discharged home four days later.

He had a similar asthma exacerbation after inhalation of hot dog vapors 2 years previously. At age 4 years, following chicken ingestion he had a peri-oral rash and "bad taste" in his mouth. Since that time he has avoided eating chicken. He avoided eating hot dogs because of the "bad odor." He eats all other foods including pork and beef.

Four weeks after discharge from the hospital he was evaluated in the allergy clinic. The ingredients listed on the hot dog label included chicken, pork, corn syrup, oat flour, dextrose, hydrolyzed soy, potato protein, sodium phosphate, paprika, sodium erythorbate, and sodium nitrite. Prick skin tests were done and the results are shown in Table 1.

His prick skin test to chicken was strongly positive with pseudopods. He had mild skin test reactions to pork and potato and no reactions to aeroallergens, which included dust mite, cock-

roach, *Alternaria*, *Aspergillus* mix, *Cladosporium*, *Penicillium*, eastern tree mix, grass, ragweed, and late fall pollens. Challenge testing with hot dog and chicken was considered but was not done for fear of precipitating an episode of acute asthma.

Since this acute event he has continued to avoid eating chicken and hot dogs. In addition, hot dogs are no longer cooked in the house. He has had no further acute episodes of asthma. We did recommend that he could eat all-beef hot dogs.

DISCUSSION

Based on the clinical history and prick skin test results, this patient had status asthmaticus secondary to the inhalation of chicken allergen in hot dog vapors. We believe this is the first reported case of hot dog vapor-induced asthma.

There are few published data concerning chicken allergy. In his 1937 textbook, Tuft states that meats are not an uncommon cause of allergy¹ and included chicken in this group; however, no data are provided to support this relationship. Sampson evaluated 220 patients with atopic dermatitis.² In double blind, placebo-controlled food challenges with chicken, 4 of the 220 patients had exacerbations of atopic dermatitis.

Food vapors, particularly fish, have been reported to precipitate asthma.³ Aas reported that fish vapors inhaled in sufficient amounts caused asthma exacerbations in 34 of 725 children.³ Crespo et al⁴ described 21 children with allergy to fish who reacted to vapor inhalation.⁴ Cartier et al reported snow crab vapor-induced occupational asthma in 46 workers.⁵ Pearson reported 14 housewives and Nater and Zwartz reported one patient who had wheezing, sneezing, and rhinorrhea after scraping raw potatoes.^{6,7} Saff and Jordon reported a case of anaphylaxis

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Table 1. Results of Allergy Skin Tests

Test	Reaction, wheal/flare
Histamine	10/40 mm
Saline	0/5 mm
Chicken	10/40 mm
Pork	5/5 mm
Potato	5/6 mm
Aeroallergens	Negative

to chicken soup.⁸ We are aware of a child sensitive to garbanzo beans who died of an asthma exacerbation after inhaling vapors from cooked garbanzo beans.

In conclusion, this patient exemplifies the problems of minimal allergen exposure in a highly allergic individual and the importance of identifying a specific etiology in order to prevent fatal reactions.

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NEBULIZED LIDOCAINE MINIMIZES GLUCOCORTICOID DOSAGE REQUIREMENTS FOR CONTROL OF ASTHMA

Because lidocaine can inhibit cytokine-mediated eosinophil activation and survival, the authors studied the effects of nebulized lidocaine in 20 glucocorticoid-dependent asthmatic adults. Initial prednisone dosage ranged from 3 to 60 mg daily, and all patients were also receiving inhaled corticosteroids. Each received nebulized lidocaine, 40 to 160 mg four times daily. If peak expiratory flow rates remained stable and symptoms remained well controlled, oral corticosteroid doses were gradually reduced.

During observation for 1 to 26 months 13 patients were able to discontinue oral glucocorticoids despite previous glucocorticoid dependence (mean 6.6 years, median 3 years for the 20 patients), and glucocorticoid requirements were reduced in four others. Adverse effects were rare and modest although one patient discontinued lidocaine because of chest tightness. Glucocorticoid withdrawal symptoms limited the rate of reduction of glucocorticoid dosage in most patients.

These observations indicate a need for controlled studies of nebulized lidocaine. Blinding will be problematic because of the laryngeal and pharyngeal anesthesia elicited by lidocaine.

—RMS

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