

cologist when the procedure was prematurely terminated.

The extracts used for RASTs were primarily carbohydrate. Protein was measured with the Pierce protein assay reagent (Pierce Chemical Company, Rockford, Ill.) with a bovine serum albumin reference. The supernatant of the aqueous extract of *L. saccharina*, prepared from 20.3 mg/ml, contained 7 µg/ml of protein. The purified laminarin at 10.2 mg/ml contained about 0.5 µg/ml of protein or 0.005%. The tents did not contain sufficient material to analyze for protein. It appears that the allergen may be the carbohydrate, but it is not possible to rule out that the activity results from the trace amount of protein in the purified carbohydrate.

Although postcoital allergy to proteins in human seminal fluid is a well-recognized syndrome, there are few reports in the literature of anaphylaxis in response to pharmaceutical agents applied intracervically. Two cases of anaphylactic reactions to

bovine serum albumin during artificial insemination were recently reported.^{4,5} These reports show the potential risks of repeated exposure to allergenic substances by this route.

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Latex: A potential hidden "food" allergen in fast food restaurants

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In recent years, the role of latex in causing a variety of IgE-mediated allergic reactions has been recognized.¹ Symptoms can range from localized or generalized urticaria to systemic allergic reactions including anaphylaxis.² Health care workers, employees in latex production facilities, and persons undergoing frequent surgical procedures are at high risk for developing latex allergy, and atopic persons are more likely than nonatopic persons to have latex-specific IgE antibodies.³ Thus the role of clinically significant latex allergy is influenced by frequency of exposure but not limited to the workplace. According to several reports, latex-sensitive patients are likely to have food allergy, an

association that is perhaps related to shared antigens between latex and various foods.³ We have recently seen two patients who experienced severe reactions to latex contaminating the food eaten at fast food restaurants, and they are the subjects of this report.

CASE 1

T.I., a 25-year-old man with a long history of allergic respiratory disease and angioedema caused by poultry products, was seen in consultation after an acute attack of urticaria, angioedema, and dyspnea, which occurred at the coffee shop of a local voluntary hospital. He had eaten a ham sandwich prepared by a food handler who wore latex gloves. The patient recovered fully after immediate treatment in the hospital emergency room with epinephrine, glucocorticosteroids, and Benadryl. At the time of consultation, results of the physical examination were normal. Allergy skin tests revealed positive reactions to tree, grass, and ragweed pollens; house dust mite; several molds; and chicken. Skin test responses to

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TABLE I. Latex-specific IgE antibody assays

	T.O.	C.M.K.	Reference range
Ammoniated latex extract	17*	<5	<5
Buffered latex extract	37*	30*	<5
Latex glove extract	5	6	<5

*Radioimmunoassays were carried out at the IBT Reference Laboratory in Kansas, and results are expressed as units per milliliter.

Results less than 5.0 U/ml are considered negative.

pork, wheat, milk, egg white, and egg yolk were all negative. Results of prick testing with a crude latex preparation were weakly positive; in-vitro assay for IgE anti-latex antibody was clearly positive (Table I). The patient was counseled about latex avoidance and given an Epipen (Survival Technologies, Inc., Rockville, Md.) for immediate therapy in the case of an acute event. The patient has eaten the same meal, uneventfully, prepared without the use of latex gloves.

CASE 2

C.M.K., a 31-year-old woman with a long history of allergic rhinitis was diagnosed with latex allergy after development of acute urticaria during a root canal surgery at a dental office. Eleven months later, she was at lunch at a fast food restaurant where the food handlers all wore latex gloves during food preparation and service. She experienced generalized urticaria within minutes of eating a lunch of chicken, mashed potatoes, corn bread, cole slaw, baked beans, and iced tea sweetened with sugar. She had always eaten these foods without reaction before this event. She recovered fully after immediate self-treatment with oral antihistamines.

At the office, results of a physical examination were normal. Allergy skin testing revealed a strong reaction to tree, grass, and ragweed pollens and dust mite. Food test responses were negative to chicken, white potato, milk, corn, wheat, cabbage, carrot, beans, and tea. A prick test with a crude latex preparation was positive, and in vitro assay for anti-latex IgE was positive (Table I). Latex avoidance precautions were discussed in detail, and an

Epipen was prescribed. She has since eaten these foods without reaction, when prepared without contact with latex.

DISCUSSION

Acute urticaria and anaphylaxis can occur after exposure to a variety of allergens including insect venom, foods, and drugs. In a significant number of persons experiencing acute allergic events, the causative allergen remains unknown.^{4,5} Although we were unable to design and carry out any laboratory allergen challenges to confirm the clinical experiences of our two patients, these two cases strongly suggest that latex can be a hidden "food" allergen capable of causing severe clinical problems. As is frequently true in such situations, a detailed clinical history is the only hope of eliciting historical evidence of such a possibility. Laboratory confirmation is difficult because standardized skin test reagents are not available, and in vitro assays for anti-latex IgE are not yet the absolute standard for diagnosis. Nevertheless, these two cases are reported as index cases with the hope that they will lead to further evaluation of the role of latex allergy in the genesis of other types of "idiopathic" acute allergic reactions.

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