

THE JOURNAL OF Allergy AND Clinical Immunology

March 2001, part 1 • Volume 107 • Number 3

Fatal latex allergy

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To the Editor:

Latex allergy is common and may cause severe reactions, but whereas many reports refer to the potential for fatal anaphylaxis, we can find only 2 reported cases in which latex allergy was proposed as the cause of a fatal reaction.^{[1](#) [2](#)} Here we report the first case in which latex allergy had been confirmed before the fatal reaction, contact with a latex-containing agent immediately before the fatal reaction has been established, and the progression of symptoms and autopsy findings are consistent with those of an anaphylactic death.

The deceased was a 28-year-old woman who had been investigated for allergy at the age of 23 years because of asthma and severe allergic reactions to nuts, with positive skin prick test responses to inhalant allergens (house dust mite, cat, and dog) and nuts (strongest to Brazil nut but also to peanut, almond, and hazelnut). She was advised on the proper control of her asthma and trained how to self-inject epinephrine. She was also noted to have hand eczema and skin irritation from wearing rubber gloves; a skin prick test result for latex was strongly positive. She was given detailed advice and written instructions on latex avoidance.

She continued to experience significant symptoms from her asthma and other allergies and had emergency hospital treatment for an acute allergic reaction after eating.

On the day of her death, she had active eczema on her hands but had had no recent attacks of asthma. She is thought not to have eaten any food to which she was allergic, and her stomach was empty at autopsy. She had hair extensions bonded with an adhesive applied to a 5-cm-diameter area of scalp previously affected by eczema; because of the acute inflammatory changes during the reaction, it was impossible to determine at autopsy how active the eczema had been before application of the adhesive. This adhesive was subsequently found to contain latex, to have caused reactions in latexsensitive patients, and to carry a warning that it should not be used if latex allergy was suspected. It is thought that she had never previously used this adhesive. Within 5 minutes she reported that her scalp was itching; the woven hairs were removed, and an attempt was made to wash off the adhesive. She took chlorpheniramine by mouth, but the urticaria spread and facial angioedema developed. She used her salbutamol inhaler, but her difficulty breathing rapidly became severe. She did not use the epinephrine injector that was in her handbag. Immediately after her collapse, she was intubated by a paramedic, but attempts at resuscitation, including repeated doses of epinephrine, were unsuccessful. It has been suggested that treatment with epinephrine within 30 minutes of the start of the reaction is likely to prevent a fatal outcome.³ The first epinephrine here was given about 30 minutes after the start of the reaction. As with other cases of fatal anaphylaxis reported recently,^{4 5} it is not certain that earlier treatment would have been successful.

Autopsy revealed changes consistent with a severe allergic reaction, including severe periorbital and laryngeal edema with severe swelling of the lips and tongue and mucus plugging of the bronchi with mucosal edema; there was mediastinal emphysema. Serum from the autopsy was tested and found to have IgE antibodies to latex (8 kU_A/L, Pharmacia Cap test) and a marginally elevated mast cell tryptase level (15.5 µg/L, Pharmacia Cap test); tryptase levels may not be raised in acute allergic deaths with a major asthmatic component.⁶

The prevalence of latex allergy varies from less than 1% in the general population to as high as 12% among health care staff who routinely wear latex gloves⁷; most of those with positive allergy test results have only mild symptoms on exposure. Anaphylactic reactions to latex affect only a small fraction of those with latex allergy, but because there is no way of accurately forecasting which of those with latex allergy may be affected, all those with histories of reactions or strongly positive allergy test responses for latex allergy must be advised about latex avoidance.

Much of the advice given to patients with latex allergy has focused on exposure during health care procedures. It is remarkable that this patient's reaction followed skin contact with no mucosal or intravascular exposure. This case demonstrates the dangers of less obvious sources of latex allergen and highlights the need for more effective training in the use of self-injected epinephrine.

1/8/113518

doi:10.1067/mai.2001.113518

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