



UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

Latex Allergy and Occupational Asthma in Health Care Workers: Adverse Outcomes

Sania Amr¹ and Mary E. Bollinger²

¹Department of Epidemiology and Preventive Medicine and ²Department of Pediatrics, Division of Pediatric Pulmonology/Allergy, University of Maryland School of Medicine, Baltimore, Maryland, USA

The prevalence of natural rubber latex (NRL) allergy has been estimated to be 5–18% in health care workers, and latex exposure has been one of the leading causes of occupational asthma in the last several years. We present the cases of two nurses who developed sensitivity to NRL, both with dermatologic symptoms and respiratory symptoms that included asthma. They were referred to the University of Maryland for evaluation of their allergies, then for occupational and environmental consults. The patients' allergy to NRL was confirmed on the basis of clinical history, a positive skin test to latex, and the presence of latex-specific immunoglobulin E (IgE) serology by radioallergosorbent test (RAST). Both patients worked in the same community hospital for approximately 20 years; one was an endoscopy nurse and the other worked in the emergency department. Following the diagnosis of allergy to latex, both patients avoided direct skin contact with latex, but they continued to work in the same respective environments, where powdered latex gloves and other potentially sensitizing chemicals were used. Instead of improving, the clinical condition of the patients worsened and they remained symptomatic, even after they were removed from their workplace. Their airways reacted to low levels of a variety of sensitizers and irritants in the environment, and they became depressed. Both nurses were referred for vocational rehabilitation. **Key words:** allergy, asthma, glutaraldehyde, health care, latex, occupation, urticaria. *Environ Health Perspect* 112:378–381 (2004). doi:10.1289/ehp.6612 available via <http://dx.doi.org/> [Online 12 November 2003]

Health care workers are at high risk for exposure to natural rubber latex (NRL) and commercial cleaning solutions; risk assessment and appropriate control measures should be implemented to minimize exposure to allergens and irritants and to reduce the risk of workers for developing occupational asthma. For sensitized individuals, special attention should be given to their work and home environments, because timely control of exposure is important to minimize further damage and long-term adverse effects.

Case Presentation

Patient 1

A 49-year-old endoscopy nurse, who had worked in a community hospital for > 20 years, was diagnosed with allergy to latex after she experienced frequent peeling of her hands and local urticaria (hives) after skin contact with latex (e.g., gloves, condoms, dental procedures). Sensitivity to NRL was documented by positive radioallergosorbent test (RAST) at

that time. The patient stopped wearing latex gloves but continued to work in the same hospital environment in the immediate vicinity of other hospital personnel who used powdered latex gloves and where latex balloons were brought in occasionally. Two years later, despite the avoidance of direct skin contact with latex products, she developed severe skin reactions with swelling and urticaria; she also developed upper and lower respiratory symptoms that included allergic rhinitis, hoarseness, wheezing, shortness of breath, chest tightness, and anaphylaxis. The symptoms were severe and led to several emergency department evaluations and treatments. She was transferred to an administrative area in the hospital but she remained symptomatic. The RAST for latex-specific IgE was repeated and was negative; however, skin tests for NRL were unequivocally positive. The patient developed allergic reactions to foods, and she started experiencing cough, wheezing, and shortness of breath when exposed to even low-levels of irritant chemicals. In addition, she

had positive skin tests to common environmental allergens such as dust mites, pollen, and cockroaches, requiring desensitization with allergen immunotherapy. She developed laryngeal hyperactivity with laryngopharyngeal reflux and acid reflux disease. She was most comfortable in her home, which she converted to an “allergen free” environment. She became depressed due to her inability to work as a nurse and even to leave her home. She was released from work and referred for vocational rehabilitation a year later.

The patient was evaluated by several allergists and other specialists, including a gastroenterologist, a pulmonologist, a psychiatrist, a gynecologist, a psychologist, an otorhinolaryngologist, and two occupational medicine physicians.

Despite the fact that the patient was removed from her work environment for > 3 years, her symptoms persisted and warranted several daily medications including a budesonide inhaler, a formoterol inhaler, loratidine, budesonide nasal spray, omeprazole, famotidine, venlafaxine, and albuterol (as needed). In addition, before leaving home and in order to prevent severe reactions if she encountered latex or other allergens and/or irritants, the patient often premedicated herself with cromolyn and ipratropium bromide inhalers and ipratropium bromide nasal spray. She also carried self-injectible epinephrine and oral diphenhydramine in the event of a severe allergic reaction.

The patient's past medical history was significant for lactose intolerance, allergy to

Address correspondence to S. Amr, Department of Epidemiology and Preventive Medicine, University of Maryland School of Medicine, 660 West Redwood St., HH 109, Baltimore, MD 21201 USA. Telephone: (410) 706-1466. Fax: (410) 706-8013. E-mail: samr@epi.umaryland.edu

The authors declare they have no competing financial interests.

Received 25 July 2003; accepted 12 November 2003.