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Chronic cough due to latex-induced eosinophilic bronchitis

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To the Editor:

Type I hypersensitivity to latex has become one of the most prominent health hazards among health care workers. The spectrum of IgE-mediated symptoms ranges from localized urticaria and rhinoconjunctivitis to asthma and anaphylaxis.¹

Eosinophilic bronchitis is a condition presenting with chronic cough and characterized by sputum eosinophilia—like asthma; however, unlike in asthma, the patients have no evidence of variable airflow obstruction and airway hyperresponsiveness.² The causative agents involved in this condition have rarely been ascertained.^{3 4}

We describe the case of a 31-year-old female nurse, a nonsmoker, who had been exposed to latex gloves for 15 years. She had a history of hay fever. Approximately 5 years after she donned latex gloves for the first time, she began to experience contact urticaria on her hands; this was followed by runny nose, sneezing, ocular itching, and hyperemia. She thenceforth avoided latex gloves and wore vinyl gloves instead. In the last 5 years, she had a nonproductive chronic cough without wheezing or dyspnea. The cough worsened when she was at work and subsided during holidays, as confirmed by a symptom diary card. She

had been treated with antitussive medication with a poor response and was not receiving any medication for asthma. The latex aeroallergen levels measured⁵ in her work area (a thoracic surgery ward) averaged 454 ng/m³.

Physical examination results and chest and sinus radiography findings were normal. She was evaluated for gastroesophageal reflux by means of 24-hour esophageal manometry and pH monitoring, which showed no abnormalities. The absolute eosinophil count in peripheral blood was 1080 eosinophils/mm³. Total serum IgE level was 92.4 kU/L. Skin prick testing to a standardized latex extract (20 µg/mL protein, ALK-Abelló, Madrid, Spain) elicited a positive reaction (5-mm wheal), and skin tests to common aeroallergens were positive to grass pollen. Spirometry revealed an FEV₁ of 3.19 L (103% of predicted value), an FVC 4.02 L (110% of predicted value) and an FEV₁/FVC ratio of 79%, without changes after salbutamol inhalation.

Methacholine inhalation testing⁶ did not reveal bronchial hyperresponsiveness (PC₂₀ > 16 mg/mL). Serial peak expiratory flow monitoring showed no significant daily variability at work or away from work. Differential cell count in induced sputum samples showed 80% eosinophils. A maximal dose-response curve to methacholine (up to 256 mg/mL) was performed; no significant bronchoconstriction was observed.

After 1 month of treatment with budesonide (800 µg daily), the cough markedly improved, as determined by the symptom diary card. No eosinophils were observed in sputum at the end of treatment. The patient then underwent a specific inhalation challenge test with latex gloves⁷ in a 7-m³ challenge chamber for 60 minutes (average latex aeroallergen concentration, 99 ng/m³). During the challenge test, she experienced severe rhinoconjunctivitis and nonproductive cough; these persisted for several hours, but no changes in FEV₁ were observed during a 24-hour follow-up period. Methacholine inhalation testing was repeated 24 hours after the latex challenge, and the result was again negative. A pronounced eosinophilia (90%) in sputum was observed 24 hours after the latex challenge.

The results of the allergologic study and challenge test indicate that latex was the causative agent of the eosinophilic bronchitis without asthma in this patient.

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References

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1. Poley GE, Slater JE. Latex allergy. *J Allergy Clin Immunol* 2000;105: 1054-62.

MEDLINE

CROSSREF

2. Gibson PG, Dolovich J, Denburg J, Ramsdale EH, Hargreave FE. Chronic cough: eosinophilic bronchitis without asthma. *Lancet* 1989;17:1346-7.

3. Lemièrè C, Efthimiadis A, Hargreave FE. Occupational eosinophilic bronchitis without asthma: an unknown occupational airway disease. *J Allergy Clin Immunol* 1997;100:852-3.

MEDLINE

FULL TEXT

4. Ogawa H, Fujimura M, Heki U, Kitagawa M, Matsuda T. Eosinophilic bronchitis presenting with only severe dry cough due to bucillamine. *Respir Med* 1995;89:219-21.

MEDLINE

5. Swanson MC, Bubak ME, Hunt LW, Yunginger JW, Warner MA, Reed CE. Quantification of occupational latex aeroallergens in a medical center. *J Allergy Clin Immunol* 1994;94:445-51.

MEDLINE

6. Cockcroft DW, Killian DN, Mellon JJA, Hargreave FE. Bronchial reactivity to inhaled histamine: a method and clinical survey. *Clin Allergy* 1977;7:235-43.

MEDLINE

7. Laoprasert N, Swanson MC, Jones RT, Schroeder DR, Yunginger JW. Inhalation challenge testing of latex-sensitive health care workers and the effectiveness of laminar flow HEPA-filtered helmets in reducing rhinoconjunctival and asthmatic reactions. *J Allergy Clin Immunol* 1998;102:998-1004.

MEDLINE

Articles with References to this Article

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This article is referenced by these articles:

Quantified environmental challenge with absorbable dusting powder aerosol from natural rubber latex gloves

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ABSTRACT

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