
Case report

A generalized reaction to thimerosal from an influenza vaccine

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Background: Thimerosal is a preservative commonly used in ophthalmic solutions, otic drops, and vaccines because of its bactericidal property.

Objective: To report a case of a generalized reaction to thimerosal in a patient who received an influenza vaccine.

Methods: We describe a patient who developed a generalized maculopapular eruption after receiving a thimerosal-containing influenza vaccine. Patch testing was performed to determine if there was an allergy to thimerosal.

Results: Patch testing confirmed a T-cell-mediated sensitivity to thimerosal.

Conclusions: Physicians need to be aware that thimerosal is found in many products, including vaccinations. Clinicians should also be aware that allergic reactions occur with exposure to thimerosal even in vaccines. To our knowledge, this is the first case report in the literature of a generalized reaction to thimerosal from an influenza vaccine.

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INTRODUCTION

Thimerosal is a mercury derivative preservative that has been used since the 1930s. It can be found in cosmetics, ophthalmic solutions, otic products, adrenal cortex or testosterone injections, antivenins, immunoglobulins, nasal sprays, and vaccines.^{1,2} It is effective in preventing bacterial contamination in the aforementioned products and is used especially in multidose containers of vaccine.³ The US Public Health Service and American Academy of Pediatrics set a goal to reduce or eliminate thimerosal in vaccines to minimize mercury exposure in July 1999.^{4,5} This precautionary measure was aimed especially at children, since they are more susceptible to the toxic effects of mercury. Currently, all recommended vaccines for children are free of thimerosal; however, thimerosal is still used in adult vaccines, including tetanus, influenza, pneumococcal vaccines, and some hepatitis B.⁶ Herein, we report a case of a generalized reaction to thimerosal in a patient who received an influenza vaccine.

CASE REPORT

A 39-year-old white woman developed pruritus and a rash on all 4 extremities 8 hours after receiving an influenza vaccine. The patient received the injection in the right deltoid muscle. She initially experienced pruritus on the right arm that spread to the left arm, both legs, and upper

chest. She had been taking montelukast sodium, fexofenadine hydrochloride–pseudoephedrine hydrochloride, mometasone furoate monohydrate, salmeterol xinafoate–fluticasone propionate (inhalation powder), escitalopram oxalate, and lisinopril-hydrochlorothiazide. She had been taking all of these medications for more than 3 months. She had not taken any other medication, vitamins, or herbs. The patient had received the influenza vaccine each year for the past 6 years without a reaction. Of significance is the fact that the patient developed a rash on her eyelids 10 years previously from a thimerosal-containing contact lens solution.

Her physical examination revealed an erythematous, maculopapular eruption on all 4 extremities and the torso. There were neither hives nor mucosal lesions. Her medical history was significant for hypertension, asthma, allergic rhinitis, and conjunctivitis. She developed hives after contact exposure to horses. There was a history of lip swelling after ingestion of honey dew, and she experienced a generalized pruritic rash after ingestion of raspberries as a child. The patient denied exposure to poison ivy or an egg allergy. She worked as a clerk and denied any exposure to mercury-related products or use of cosmetics.

The patient's rash spread from her lower extremities up to her buttocks and persisted for 2 weeks before she was referred to our allergy clinic. She was treated with a 5-day course of oral prednisone and a sedating antihistamine to decrease the pruritus. The rash completely resolved after 4 days. The patient returned 4 weeks later, and patch testing was performed (T.R.U.E. Test; Glaxo Pharmaceuticals, Research Triangle Park, NC). The only allergen that induced an allergic response was thimerosal (Figs 1 through 3).

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