



AMERICAN ACADEMY OF ALLERGY
ASTHMA & IMMUNOLOGY

Case Study

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Egg Allergy and Immunization with Influenza Vaccine

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A 65-year-old highly atopic patient just presented for a return visit, and I recommended immunization with seasonal influenza vaccine. She has had atopic dermatitis since childhood, persistent severe (corticosteroid dependent) asthma, allergic rhinitis and multiple food allergies. She avoids eggs as she developed generalized urticaria many years ago after eating some food with eggs in it. She noted that she developed hives after general anesthesia three years ago and had been told that one of the medications was egg-based. She is not knowingly allergic to latex. Her dosage of prednisone is 10 mg on alternate days.

Because of asthma and her age, influenza vaccination is indicated (seasonal influenza and novel H1N1). It is not known if she can eat eggs uneventfully. If she could, then she would receive 0.50mL influenza vaccine without testing.

What was done?

Prick skin test to full strength influenza vaccine = negative

Prick skin test to control = negative

Prick skin test to histamine = 3+

Prick skin test to whole egg = 4+

Influenza vaccine-full strength (0.05mL IM) = no reaction

In 30 minutes

Influenza vaccine-full strength (0.45mL IM) = no reaction

The patient was observed for 30 minutes and then released.

Comments

1. Allergy/immunology investigators have generated the science that forms the basis for our practices regarding the approach to influenza (or MMR or yellow fever) vaccination in egg-allergic children and adults.
2. Prick skin testing and then a test-challenge is a practical approach for patients who are egg-allergic. In some situations or depending on the physician's experience with challenges, an

intradermal test at 1:100 for the influenza vaccine can be an additional step before the two step challenge with the vaccine.

3. My patient likely reacted intraoperatively to diprivan (Propofol, Baxter Healthcare, Deerfield, IL) as it contains egg lecithin as an emulsifier.
4. Prednisone 10mg on alternate days does not inhibit an antibody response to influenza immunization. In fact, it is quite difficult to prevent a satisfactory response to immunization in most patients, who are not immunosuppressed or asplenic, even if the alternate day dosage of prednisone is higher. The long-term use of prednisone didn't prevent accurate interpretation of the immediate skin testing results.
5. If my highly atopic patient had reported developing allergic contact dermatitis from neomycin, the minimal amount present in a vaccine is not a contraindication to receiving influenza vaccination IM and would not be expected to induce an episode of allergic contact dermatitis.
6. The amount of ovalbumin in the novel H1N1 vaccine is not known yet, but presumably will not be higher than what occurs in the seasonal influenza vaccines.

Visit the [Members Center](#) for up-to-date information on novel H1N1 immunization.