Myth Persists on Seafood Allergy, Contrast Link

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SAN DIEGO — An old medical myth—that patients who are allergic to seafood are at risk of adverse reactions to radiologic contrast media—persists even among cardiologists, despite having been thoroughly debunked, Dr. Andrew D. Beaty reported at the annual meeting of the American Academy of Allergy, Asthma, and Immunology.

In a survey of 231 specialists at six academic medical centers, 69% of the physicians admitted asking patients about seafood allergy before radiologic procedures using contrast media. Of those surveyed, 37% of the physicians admitted withholding contrast media or premedicating seafood-allergic patients with corticosteroids or antihistamines before the procedure.

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Half of the cardiologists in the survey said that they would withhold RCM or pretreat patients with seafood allergies.

Many studies over the past 30 years have failed to find any special relationship between seafood allergy and adverse reactions to radiologic contrast media (RCM). According to some, atopic patients in general may have a fourfold to fivefold increased risk of adverse events in response to RCM. However, the baseline rate of these events is so low that even if these studies were to be confirmed in larger populations, less than 1% of atopic patients would be affected.

About 10 million procedures using RCM are conducted every year in the United States. Life-threatening reactions occur in about 0.2% of patients receiving high-osmolarity contrast media and 0.04% of those getting low-osmolarity contrast media.

The origin of the seafood allergy myth is unknown. But Dr. Beaty, of St. Louis University, has traced it at least as far as a 1975 paper in the American Journal of Roentgenology that stated that 15% of patients who experienced adverse reactions to RCM reported having seafood allergy (Am. J. Roentgenol. Radium Ther. Nucl. Med. 1975;124:145-52). The authors of that study hypothesized that the iodine in seafood cross-reacted with the iodine in RCM. They never verified those patient reports, however, and similar percentages of patients with adverse reactions in their study reported allergies to other common foods such as milk and eggs.

Since then, it has been determined that seafood allergy is mediated by immunoglobulin E (IgE) antibodies to proteins in meat, with iodine playing no role. Furthermore, IgE does not mediate severe RCM reactions. The combination of these two findings effectively discounts the hypothesis of iodine cross-reactivity.

For his study, Dr. Beaty and his colleagues mailed anonymous questionnaires to 231 faculty members at six prominent academic medical centers in the Midwest. Of the individuals queried, 49% responded.

The survey consisted of eight brief questions, but only two of them related to seafood allergy and RCM. The other six were intended as distractors.

The first seafood-related question was, "Do you or someone on your behalf inquire about a history of seafood or shellfish allergy prior to administration of contrast media?" Sixty-five percent of the radiologists and 89% of the cardiologists answered, "Yes."

The second question was, "Would you withhold RCM administration or recommend pretreatment with corticosteroids and/or antihistamines based on a history of seafood or shellfish allergy?" Thirty-five percent of the radiologists and 50% of the cardiologists answered, "Yes."

While 69% of the total respondents said that they would ask patients about seafood allergy, only 37% said that they would change management based on that information. That suggests that about 32% would ask the question even if the answer would not affect patient management.

Merely asking that question may serve to perpetuate the myth among patients, Dr. Beaty said. He pointed to a separate study indicating that 65% of patients with seafood allergy had either read or been told by their physician to avoid RCM, and 92% believed that iodine in seafood was responsible for their allergy (Allergy Asthma Proc. 2005;26:468-9).

Several physicians in the audience rose to describe their experiences with this medical myth. One described a radiologic technician who received an official reprimand for failing to ask a patient about seafood allergy. Another physician said that at his institution no allergic patients were allowed to receive RCM unless they were premedicated.

A third physician said that at his institution, the computer system automatically categorized every patient with a seafood allergy as being sensitive to RCM, and every patient who was sensitive to RCM as having a seafood allergy. That has now been changed, but patients who were seen before the change will have that erroneous information persist in their records until someone changes it manually. ■