Letters to the Editor

Case Report: Delayed Anaphylaxis Following Meat Consumption and Tick Exposure

To the Editor: A 43-year-old man presented with an 18-month history of recurrent angioedema and urticaria. Several times per month, he went to bed as usual and woke with urticaria and facial swelling. The most recent episode involved difficulty breathing, and he was treated in the emergency department for anaphylaxis. He denied any chronic medical problems, history of environmental or food allergies, or changes in environment, soaps, lotions, or medications. The total immunoglobulin E (IgE) and panel of specific IgE antibodies related to commonly allergenic foods were unremarkable. He was referred to an allergist, where skin prick testing was negative. On further questioning, he noted that episodes usually occurred the mornings after eating beef or pork for dinner and recalled removing an attached tick after hiking in the months preceding symptom onset. Additional testing showed alpha-gal IgE was elevated at 5.2 kU/L (normal < 0.35 kU/L). Alpha-gal allergy was diagnosed. The patient now carries an epinephrine auto-injector, avoids mammalian meat products, and has had no further episodes of anaphylaxis.

Alpha-gal, or galactose-alpha-1,3-galactose, is a carbohydrate expressed in all mammals except higher primates. Humans become sensitized to alpha-gal through bites from the Lone Star tick (*Amblyomma americanum*), with repeated bites increasing the risk of sensitization. Unlike immediate reactions following IgE-mediated protein allergies, allergic reactions to alpha-gal can occur 4 to 8 hours after meat consumption. Subsequent tick bites and consumption of red meat and, more rarely, milk products and gelatin can trigger allergic reactions in sensitized individuals.[1] These range from mild urticaria to gastrointestinal distress to life-threatening anaphylaxis.[1-3] Identifying the allergy can prevent future allergic reactions through avoidance. All patients should receive an epinephrine auto-injector, with counseling on avoiding red meat and preventing tick bites.[1,4]

The delay in symptom onset after exposure can make the diagnosis of alpha-gal allergy challenging. Physicians must be aware of this unusual but increasingly common cause of recurrent urticaria and anaphylaxis.[5] This is especially important as cases of alpha-gal allergy are rising as tick populations are increasing due to warming climates.[6] By including tick and meat exposures in a patient's history, primary care physicians can diagnose this delayed allergy, facilitating appropriate avoidance measures, improving quality of life, and preventing life-threatening complications.

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