
Correspondence

EARLY-ONSET CELLULITIS AFTER INSECT BITES: ALLERGIC INFLAMMATION

To the Editor:

We read with great interest the study by Orange et al¹ of the child with recurrent cellulitis following black fly bites who was treated with antibiotics on many occasions, referred for evaluation of immune deficiency, and found to have elevated total IgE levels and black fly allergy.

Large local allergic reactions caused by biting insects are probably not as rare as is currently believed, and they are commonly misdiagnosed as cellulitis. In 1999, we reported "skeeter syndrome" in young children with redness, swelling, warmth, and induration accompanied by low-grade fever and fussiness beginning a few hours after mosquito bites and labeled as cellulitis by their primary care physician.² All the children had blood cultures taken, and all received antibiotic treatment, which was discontinued after a few days when the inflammatory reaction was beginning to subside and the culture findings were reported to be negative. The reactions disappeared completely within 10 days. Months later, in our allergy clinic, the history was reviewed and mosquito allergy was confirmed by finding elevated serum concentrations of *Aedes vexans* saliva specific IgE, IgG1, IgG3, and IgG4 compared with age-matched control children.

The important clues to the diagnosis of allergic inflammation after an insect bite are found in the history. They include a history of being around insects or of getting bitten by an insect; reactions occurring only during warm weather, especially in the spring and early summer; onset of symptoms within minutes to hours of the bite (not after days of scratching); and itching of the lesion.

On physical examination, inflammation of the skin and subcutaneous tissues caused by an allergic reaction and inflammation caused by an infection may appear similar. Both are characterized by swelling, warmth, redness, and induration and may be accompanied by fever, although with a large local allergic reaction, body temperature is usually not greatly elevated. The lesions are seldom biopsied, but if they are, allergic inflammation characterized by eosinophil infiltration rather than neutrophil infiltration is observed.

In addition to lack of recognition by health care professionals, a major barrier to accurate diagnosis of large local reactions to insect saliva is lack of availability of optimal diagnostic tests for sensitization to biting insects. For patients with mosquito allergy, use of natural or recombinant mosquito saliva allergens instead of mosquito whole body extracts improves the sensitivity and specificity of diagnostic tests.^{3,4} Salivary antigens are not available for other biting

insects; however, use of head and thorax extracts rather than whole body extracts improves diagnostic testing.

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Response:

We appreciate the comments of Drs. Simons and Peng and have observed a number of patients in our own practice with "skeeter syndrome"¹ who have had demonstrable cutaneous hypersensitivity to one of the commercially available mosquito extracts. Our experience concurs with authors regarding the unfortunate underdiagnosis and misdiagnosis of these patients. Had it not been for a very compelling case history, we would not have suspected the diagnosis conferred upon our patient.² We also agree with the need for better diagnostic modalities for patients suspected of having Diptera allergies. The skin test products currently available in the United States do not include a reagent for Simuliidae, and those for mosquito are not of an ideal quality.¹ We had great difficulty arriving at the specific diagnosis we achieved in our patient for these reasons. Thus, we echo the call made by Drs. Simons and Peng for better means to diagnose and, therefore, care for patients affected by Diptera hypersensitivity syndromes.

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