Eosinophilic dermatosis of hematologic malignancy: Reality bites

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By July, you and your patients have likely suffered the indignity of insect bites. Virtually everyone is sensitive to mosquito bites. Aside from serving as a vector for infectious diseases, such as dengue fever, malaria, West Nile, and others, mosquito bites are usually just a nuisance.

Some unfortunate patients experience a severe reaction to mosquito bites accompanied by fever and systemic symptoms. Patients with chronic Epstein-Barr virus infection are at risk for hypersensitivity to mosquito bites and experience necrotic skin lesions. Hypersensitivity to mosquito bites is observed in association with Epstein-Barr virus infection and natural killer cell lymphoproliferative disorder. Exaggerated reactions to mosquito bites are also observed in Wells syndrome; in these patients, a strong T helper 2 cell—skewed immune dysregulation leads to a robust $CD4^+$ T-cell proliferation in response to mosquito salivary gland extracts. Also, a profound reaction to mosquito bites can also be observed in certain B-cell neoplasms.[1]

The phenomenon of exaggerated delayed hypersensitivity to mosquito bites has been attributed to Dr Robert Weed, who, in 1965, noted that such lesions had long been recognized in patients having chronic lymphocytic leukemia (CLL). All of Weed's patients were believed to have been bitten by insects.[2]

Although the majority of these lesions occur in association with or preceding CLL, cases have been reported in other hematologic malignancies, including B-cell lymphoproliferative diseases, acute lymphoblastic leukemia, and mantle cell and large cell lymphoma. Bite reactions have been described for other conditions causing immune dysregulation, such as HIV infection and congenital agammaglobulinemia. It is now recognized that insect bites might not have occurred in many affected patients. This phenomenon is now referred to as eosinophilic dermatosis of hematologic malignancy (EDHM).[3]

In this issue of the Journal of the American Academy of Dermatology, Grandi et al[4] performed a retroactive analysis of 37 patients with EDHM using proposed EDHM diagnosis criteria: a known history of oncohematologic disease; recurrent episodes of papules, nodules, urticarial plaques, or blisters with intense pruritus; eosinophilic infiltration on histopathology; and the exclusion of other causes of tissue eosinophilia. The majority of these patients had primarily B-cell chronic lymphocytic leukemia (51%) and various types of B-cell non-Hodgkin lymphomas (30%), whereas acute leukemia was observed in only 4 patients (10%). At the time of EDHM onset, a minority of patients (25%) had underwent chemotherapy because of active and progressive disease. There is no evidence to suggest that EDHM adversely affected the prognosis of the associated malignancy.[4]

Eosinophilic folliculitis has also been associated with CLL. Eosinophilic folliculitis with underlying CLL and EDHM likely represent the same condition given their common clinical context, morphology, distribution, and natural history.[5] Histopathology is also unifying: a lymphocytic infiltrate, perivascular and interstitial eosinophils, and intraepidermal and intrafollicular eosinophilic spongiosis are observed in both disorders.[5]

When you evaluate patients with severe, recalcitrant insect bites this summer, keep the remote possibility of EDHM in mind—you might be

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witnessing a dermatologic manifestation of a lymphoproliferative process.

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