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Eosinophilic dermatitis of hematologic malignancy

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**Case presentation**

**Eosinophilic dermatitis of hematologic malignancy**

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**Abstract**

Eosinophilic dermatosis of hematologic malignancy is a rare, paraneoplastic phenomenon that presents as a pruritic papular or vesicular eruption that is clinically and histopathologically similar to insect bites. We present a 56-year-old man with multiple relapses of diffuse large B cell lymphoma with a typical presentation of pruritic papules and vesicles on the extremities that correlate with a recent relapse of his lymphoma.

**Case synopsis**

**History:** A 56-year-old man with multiple relapses of diffuse large B cell lymphoma, which was diagnosed in 2012, presented to the Skin and Cancer Unit for evaluation of a pruritic, papular eruption on the upper and lower extremities. The lesions first developed a week after his first cycle of chemotherapy with rituximab and bendamustine. He had noted similar eruptions prior to previous relapses of his lymphoma, which improve with treatment of his malignant condition. He describes the lesions as initially large and edematous with associated pain and burning before evolving into small, firm, pruritic papules. The patient declined a biopsy and triamcinolone ointment 0.1% was prescribed. The patient returned for a follow up visit three weeks later stating that his eruption had appreciably improved. He felt that the triamcinolone ointment helped somewhat but attributed much of his improvement to his second round of chemotherapy, which had occurred 12 days prior. A punch biopsy of a residual lesion on the right thigh was performed, which demonstrated findings that were most consistent with a resolving eczematous dermatitis. One month later, the patient returned with an exacerbation of his skin lesions, which now involved vesicles over the palmar surfaces of the hands. Punch biopsies of representative lesions on the left hypothenar eminence and left forearm were performed. Our patient has responded to a combination of antihistamines, topical glucocorticoids under occlusion, and intralesional glucocorticoids.

**Physical examination:** On the arms, legs, and dorsal aspects of the hands, there were small, pink papules. Within the web space of the first and second fingers of the left hand and over the hypothenar eminences there were tense, minimally elevated vesicles with no surrounding erythema, which measured 2-to-5-mm in diameter.

**Laboratory data:** A complete blood count showed eosinophils of 8% and basophils of 2%. A complete metabolic panel and lactate dehydrogenase were normal.

**Histopathology:** There is a superficial and deep, predominantly perivascular infiltrate of lymphocytes and innumerable eosinophils. There is slight epidermal hyperplasia, spongiosis, and parakeratosis. A periodic acid-Schiff stain with diastase fails to show fungal elements.



Figures 1,2. Multiple pink papules and vesicles

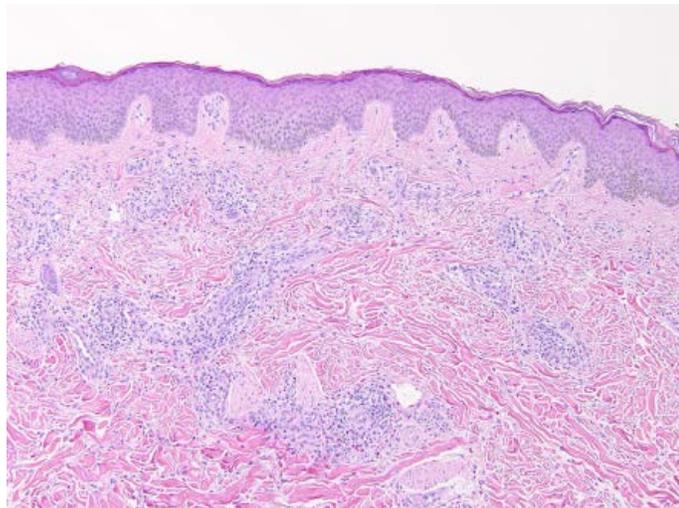


Figure 3 pink papules of web space Figure 4. Perivascular infiltrate of lymphocytes and numerous eosinophils

## Discussion

**Diagnosis:** Eosinophilic dermatitis of hematologic malignancy

**Comment:** Eosinophilic dermatosis of hematologic malignancy (EDHM), which also has been referred to as insect bite-like reaction, was first reported in 1965 [1,2]. It was initially thought to be a hypersensitivity reaction in response to insect bites in patients with chronic lymphocytic leukemia (CLL) owing to its clinical appearance and histopathologic features [1, 3, 4]. EDHM has been described in patients with various hematologic malignant conditions, most commonly CLL, and in diseases that affect the immune system, such as human immunodeficiency virus-1 infection. It is thought to be a paraneoplastic phenomenon [2, 5-9].

The clinical features of EDHM most frequently consist of tender papules and nodules that resemble insect bites. They may occur anywhere on the body. The lesions often are indurated and erythematous; vesicles and bullae have been reported. The development of EDHM may coincide with the diagnosis of a hematologic malignant condition or it may develop months to years after the patient's cancer diagnosis. EDHM preceding the diagnosis of hematologic malignant condition also has been reported [10, 11].

The clinical diagnostic criteria include pruritic papules, nodules, and/or a vesiculobullous eruption that is refractory to standard treatment. Other criteria include histopathologic features that consist of an eosinophil-rich, superficial and deep, dermal lymphohistiocytic infiltrate, exclusion of other causes of tissue eosinophilia, and the diagnosis of a hematologic malignant condition [12]. Other histopathologic features include eosinophilic spongiosis. In cases that present with vesicles or bullae, intraepidermal, and subepidermal edema may occur [2, 10-11]. Flame figures in the dermis and subcutaneous tissue also have been reported [11]. Specific laboratory abnormalities are infrequent [2, 10]. The differential diagnosis of EDHM includes leukemia cutis, scabies, drug eruption, insect bite reaction, papular urticaria, urticarial stage of bullous pemphigoid, dermatitis herpetiformis, eosinophilic folliculitis, and Wells syndrome [10].

Treatment is difficult. Therapeutic options have included topical and systemic glucocorticoids, phototherapy, radiation, antihistamines, dapsone, interferon alpha, intravenous immunoglobulin, and chemotherapy [10-11].

## References

1. Weed RI. Exaggerated delayed hypersensitivity to mosquito bites in chronic lymphocytic leukemia. *Blood* 1965; 26: 257
2. Barzilai A, et al. Insect bite-like reaction in patients with hematologic malignant neoplasms. *Arch Dermatol* 1999;135: 1503
3. Houston JG, et al. Exaggerated delayed hypersensitivity to mosquito venom in association with lymphoproliferative disorders. *J Fla Med Assoc* 1970; 57: 15
4. Pederson J, et al. Exaggerated reaction to insect bites in patients with chronic lymphocytic leukemia: clinical and histological findings. *Pathology* 1990; 22: 141
5. Khamayasi Z, et al. Insect bite-like reaction associated with mantle cell lymphoma: clinicopathological, immunopathological, and molecular studies. *Am J Dermatopathol* 2005; 27: 290
6. Dodiuk-Gad RP, et al. Insect bite-like reaction associated with mantle cell lymphoma: a report of two cases and review of the literature. *Int J Dermatol* 2004; 43: 754
7. Kunitomi A, et al. Hypersensitivity to mosquito bites as a potential sign of mantle cell lymphoma. *Internal Med* 2005; 44: 1097
8. Bottoni U, et al. Bullous lesions in chronic lymphocytic leukaemia: pemphigoid or insect bites? *Acta DermVenereol* 2006; 86: 74
9. Smith KJ, et al. Exaggerated insect bite reactions in patients positive for HIV. *J Am Acad Dermatol* 1993; 29: 269
10. Farber MJ, et al. Eosinophilic dermatosis of hematologic malignancy. *J Cutan Pathol* 2012; 39: 690
11. Qiao J, et al. Flame figures associated with eosinophilic dermatosis of hematologic malignancy: is it possible to distinguish the condition from eosinophilic cellulitis in patients with hematoproliferative disease? *Int J Clin Exp Pathol* 2013;6:1683
12. Byrd JA, et al. Eosinophilic dermatosis of myeloproliferative disease: characterization of a unique eruption in patients with hematologic disorders. *Arch Dermatol* 2001; 137: 1378