Drug Induced T-Cell Dyscrasia Mimicking Granulomatous Mycosis Fungoides

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Drug Induced T-Cell Dyscrasia Mimicking Granulomatous Mycosis Fungoides

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Case Presentation:

Patient: 47 year-old Indian male.

History of Present Illness: The patient presented with an eight-month history of pruritic papules on the arms and legs, which gradually spread to involve the face. The lesions were not responsive to topical corticosteroids alone. He denied systemic symptoms or new medications. However, he admitted to beginning new hair loss regimen, with an oral dietary supplement (containing vitamins B3, D and E, biotin, saw palmetto and nettle root). The patient was instructed to discontinue this supplement upon presentation and had complete clearance of his rash within two weeks.

Medical/Surgical History: Nephrolithiasis, tinea pedis

Family History: Negative for skin cancer or hematological malignancy

Medications: Hair Revitalizing Complex, halobetasol propionate 0.05% ointment, econazole nitrate 1% cream, miconazole topical powder

Previous Medications: Fluoruracil 5%, doxycycline, clobetasol proprionate 0.05% cream

Current Treatment: Halobetasol propionate 0.05% ointment, CeraVe moisturizing cream

Physical Examination: The patient presents with multiple scattered, pink to violaceous papules involving the glabella, eyelids, periorbital areas, arms and legs. There is no palpable lymphadenopathy.

Laboratory Data: (08/25/2015) T-cell receptor (TCR) gamma gene rearrangement by PCR positive.

Biopsy: *Advanced Dermatology Associates, LTD* (AD15-09941, 08/25/2015) Right temple: "Mycosis fungoides. There are nodular lymphohistiocytic infiltrates in the superficial half of the dermis that, on multiple sections, appear to be perifollicular. Lymphocytes are also scattered and clustered in the epidermis, and within follicular epithelium. IHC stains demonstrate a significant loss of CD7 positivity overall (with less than 10% of cells staining), when compared with CD2, CD3, and CD5. Intraepidermal lymphocytes are entirely CD7-. CD4 and CD8 stains demonstrate an overall helper:suppressor ratio of greater than 10:1, while intraepidermal lymphocytes are almost entirely CD4+/CD8-. CD45RB and CD45RO highlight all lymphocytes in a roughly equal fashion. The immunostains also demonstrate intraepidermal lymphocytes to be conspicuously aligned in the basal layer across the surface and also down the sides of follicular epithelium.

Diagnosis: Drug Induced T-Cell Dyscrasia Mimicking Granulomatous Mycosis Fungoides.

Follow-up: The patient was instructed to avoid the dietary supplement and followed closely. He had no evidence of recurrence at six months follow-up.

Figures 1-3: Scattered, pink to violaceous papules located on the face, back and flank

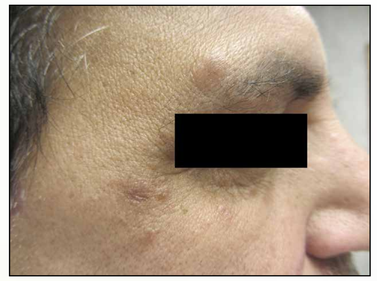


Figure 1

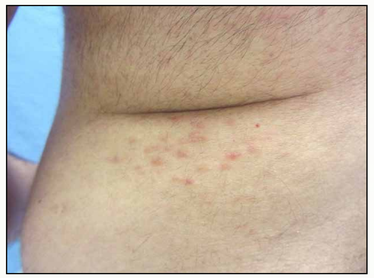


Figure 2

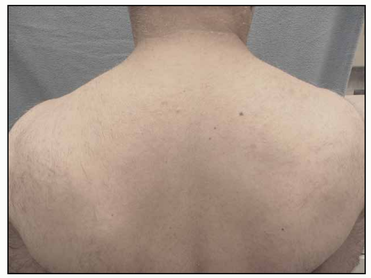
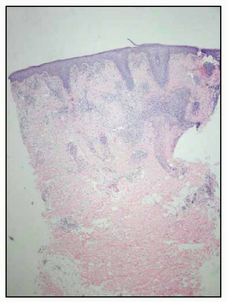
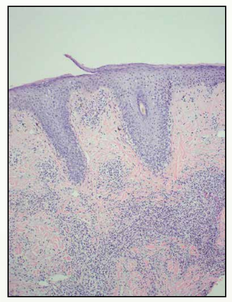


Figure 3

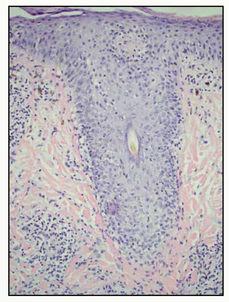
Figures 4-6: Punch biopsy of the right temple demonstrating a nodular, lymphohistiocytic infiltrate in the superficial dermis with lymphocytes perifollicularly, tagging the basal layer, and within epidermis



Figures 4: Right temple H&E 4x



Figures 5: Right temple H&E 10x



Figures 6: Right temple H&E 20x

Discussion:

T-cell dyscrasia is a term used to encompass a group of disorders that often present with a cutaneous infiltrate, exhibiting cytologic and histopathological atypia, which may be associated with a clonal T-cell population. These disorders may mimick other entities both clinically and histopathologically, such as mycosis fungoides (MF) or cutaneous T-cell lymphoma. Clinical characteristics of drug-induced MF-like lesions can be quite variable, ranging from discreet papules, plaques or nodules to a more diffuse, maculopapular eruption or rarely, erythroderma. Descriptions of this disease have appeared in the literature under various terms, such as drug-associated pseudolymphoma and drug-associated reversible T-cell dyscrasia. The defining characteristics of such cases are that of an atypical lymphocytic cutaneous proliferation with findings similar to MF in their histopathological, phenotypic and molecular profiles. By definition, the eruption may begin weeks to years after initiation of a medication with complete resolution upon its discontinuation and worsening or recurrence with medication re-challenge. Medications reported in the literature that cause similar eruptions include: antihistamines, anticonvulsants, antipsychotics, serotonin reuptake inhibitors, penicillin, dapsone, nitrofurantoin, vancomycin, rifampin, beta-blockers, calcium channel blockers, angiotensin-converting enzyme inhibitors and many more. Contrarily, over the counter medications and supplements, as in our patient's case, have rarely been reported as causative agents. The proposed pathogenesis of this entity is that of antigenic stimulation from the medication resulting in aberrant T-cell proliferation. Histopathological findings are variable and may simulate both interstitial granulomatous disease as well as MF, as reported by Magro et al. Features may include: superficial and mid dermal atypical lymphocytic associated with a palisading histiocytic infiltrate, epidermotropism, elevated CD4:CD8 ratio and loss of CD7. Cases have been reported in association with monoclonal T-cell populations in both biopsy specimens and peripheral blood, however the majority are polyclonal. Patients are reported to have complete resolution of their skin findings in as early as one to twelve weeks of medication discontinuation. In many cases no recurrence has been reported in up to three years, according to one study. These patients should avoid the inciting medication and should be followed to ensure long-term resolution of their disease. It is unknown if the antigenic stimulation predisposes them to the development of lymphoma in the future.

References:

1. Jahan-Tigh R, Huen A, Lee G, et al. Hydrochlorothiazide and cutaneous T-cell lymphoma. *Cancer.* 2013:825-831.
2. Magro C, Cruz-Inigo, Votava H, et al. Drug-associated reversible granulomatous T cell dyscrasia: a distinct subset of the interstitial granulomatous drug reaction. *J Cutan Pathol* 2010;37:96-111.