Cutaneous Pseudolymphoma Due to Lamotrigine: First Reported Case

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Cutaneous Pseudolymphoma Due to Lamotrigine: First Reported Case

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Case Presentation:

Patient: 8-year-old Caucasian female.

History of Present Illness: The patient presented with new onset of three pink papules on the scalp, which were mildly painful to palpation and gradually increasing in size. She denied any insect bites or trauma to the area. She did report switching from oxcarbazepine to lamotrigine for her seizure disorder six months prior to onset of the lesions and was gradually escalating the dosage. Review of systems was negative for fever, weight loss, nausea, lymphadenopathy or night sweats. She gradually developed a total of nine lesions over a course of a few months following her initial presentation, but remained otherwise asymptomatic. The lesions were located on the posterior scalp, which were mildly painful to palpation and gradually involuted completely within weeks, without recurrence at nine months follow-up.

Medical History/Surgical History: seizure disorder, keratosis pilaris, seborrheic dermatitis.

Current Medications: lamotrigine, ketocanazole 2% shampoo

Physical Examination: nine well-circumscribed, mildly scaly, pink, indurated 0.5-1 cm nodules on the frontal and vertex scalp (Figures 1 & 2). No lymphadenopathy.

Laboratory Data: CBC, immunoglobulin assay, bone marrow transverse panel, CMP, lactate dehydrogenase, inflammatory markers and viral testing - WNL, bacterial and fungal skin cultures negative.

Biopsy: Health Network Labs (AD13-02642, 04/13/2013) Right crown of scalp: Lymphocytic infiltrate, nodular (Figures 3 & 4).

Health Network Labs (AD13-03460, 04/03/2013) Right lateral crown of scalp: Atypical dermal lymphoid infiltrate (Figures 5 & 6).

Immunohistochemical studies revealed small BCL2+ lymphocytes with a 2:1 mixture of CD3+ T-cells and CD20+ CD10+ B-cells. The T-cells expressed CD2, CD4, and CD83 and a subset with loss of CD7. The CD4:CD8 ratio was 10:1. No follicular dendritic networks were noted with CD21 and CD23. Rare, scattered medium sized CD30 cells were noted. CD10, Bcl6, ALK, EBER1, IgG and IgM were negative. The plasma cells had kappa/lambda ratio of 2:1. K-B was positive in 15% of lymphoid cells. Gene rearrangement by PCR revealed a peak at 228bp in a predominantly polyclonal background. The primary concern regarding a diagnosis of cutaneous pseudolymphoma is the clinician’s ability to effectively differentiate this entity from a true malignant lymphoma. Immunostaining has some value by identification of heterogeneous cell type populations with a mixed T-cell and B-cell infiltrate more characteristic of a benign reactive process. Subsequent PCR analysis can detect the presence or absence of monoclonal rearrangements of the T-cell receptor gene or heavy chain chain. These monoclonal rearrangements are absent, a benign diagnosis is favored. However, these rearrangements have also been shown to exist in certain cutaneous pseudolymphomas that earned their final diagnosis when removal of the offending agent led to spontaneous lesion regression.

Many different entities have been described as causative factors for the development of pseudolymphomas. Of those that have been consistently reported include: anticonvulsants, monoclonal antibodies, and infliximab. Many other drugs have also been implicated in this process, including: antibiotics, antimalarials, antipsychotics, cyclosporine, antiretrovirals, interferon, immunomodulators, and biologics. As a class, anticonvulsants are considered more likely to cause a lymph node pseudolymphoma than a strictly cutaneous pseudolymphoma. Similar to other cases, lamotrigine was discontinued after the biopsy and the lesions resolved rapidly. The lesions have not recurred since discontinuation.

The primary concern regarding a diagnosis of cutaneous pseudolymphoma is the clinician’s ability to effectively differentiate this entity from a true malignant lymphoma. Immunostaining has some value by identification of heterogeneous cell type populations with a mixed T-cell and B-cell infiltrate more characteristic of a benign reactive process. Subsequent PCR analysis can detect the presence or absence of monoclonal rearrangements of the T-cell receptor gene or heavy chain chain. These monoclonal rearrangements are absent, a benign diagnosis is favored. However, these rearrangements have also been shown to exist in certain cutaneous pseudolymphomas that earned their final diagnosis when removal of the offending agent led to spontaneous lesion regression.

Cutaneous pseudolymphoma is a term used to describe a heterogeneous group of benign reactive T-, B-cell or mixed cell type lymphoproliferative processes that resemble cutaneous lymphomas clinically and/or histopathologically. Historically, these types of proliferations were classified under many alternative names and originally served to describe only B-cell type proliferations. The advent of T-cell type pseudolymphoma classification and description occurred more recently, in the 1980s. With advances in immunohistochemistry allowing for more specific cell marker identification, cutaneous pseudolymphomas are often found to contain a mixture of T-cell and B-cell populations.

The appearance of cutaneous pseudolymphoma is variable, from discreet nodules or papules to even confluent erythroderma in certain cases. The high clinical variability further complicates diagnosis. While our case presented with nine individual nodular lesions, this alone would not be sufficient to have high suspicion for cutaneous pseudolymphoma without including a much broader differential diagnosis.

It is recommended that watchful follow up for these patients be carried out until at least 5 years after the diagnosis of cutaneous pseudolymphoma to rule out the possibility of malignant transformation, particularly in idiopathic cases.

Conclusion:

Our patient represents the first case, to our knowledge, of strictly cutaneous pseudolymphoma due to lamotrigine. This is based on her negative systemic workup for underlying malignancy and development of lesions after starting the medication, with rapid resolution of the lesions after its discontinuation.

REFERENCES: