Folliculotropic Mycosis Fungoides with Large Cell Transformation

Rosanne Paul, DO\(^{1}\); Ashley Feneran, DO\(^{1}\); Kevin D. Cooper, MD\(^{1}\)

University Hospitals Case Medical Center/Case Western Reserve University School of Medicine  Cleveland, OH, USA

Department of Dermatology

**History**

A 71-year-old Caucasian female presented in 2007 with a persistent, solitary, asymptomatic lesion on the left preauricular cheek for one month. An outside biopsy was consistent with mycosis fungoides (MF), folliculotropic variant (FMF). Disease persisted despite trials of topical bexarotene, oral bexarotene with nitrogen mustard, peg-interferon alfa-2b with oral bexarotene, and vorinostat combined with NB-UVB and topical steroids.

A new lesion on the right chin developed in 2007 and a punch biopsy was consistent with tumor stage MF. Brentuximab was initiated for 6 doses with partial response, later discontinued due to worsening peripheral neuropathy. A lower dose of vorinostat was re-introduced in combination with NB-UVB and topical steroids and the patient remained with adequate disease control until reevaluation in March 2015.

**Physical Examination**

**Figure 1** – (a) Initial presentation abdomen and (b) back; (c) Large cell transformation on the mid nasal bridge and (d) right leg.

**Clinical Course**

In March 2015, a new lesion developed on the nasal bridge. Biopsy was consistent with transformed large cell lymphoma. Due to persistence of disease on the face, vorinostat was discontinued and the patient was restarted on topical nitrogen mustard ointment. One month later, a new, draining lesion developed on the right posterior leg and biopsy confirmed large cell transformation of mycosis fungoides. The legs were treated palliatively with a short course of radiation therapy with improvement.

**Discussion**

- Cutaneous T-cell lymphoma (CTCL) describes a group of neoplasms of skin-homing T cells.
- The most common subtype of CTCL is mycosis fungoides (MF).
- FMF is a distinct variant of MF and is characterized by the presence of folliculotropic infiltrates that often spare the epidermis.
- Patients with FMF may present with follicular papules, acniform lesions, plaques and occasionally tumors classically involving the face, neck, and upper trunk.
- Staging is not helpful in patients with FMF, and even when the face alone is involved they should be considered as having tumor stage disease.
- FMF is often refractory to standard treatments and is associated with a worse prognosis. Combination therapy with interferon-α, retinoids, local radiotherapy or total skin electron beam (TSEB) are often initiated, however complete remission is rare.
- Large cell transformation (LCT) is definitively diagnosed histologically and is defined by the presence of CD30- or CD30+ large cells. To be considered CD30+, there should be staining of at least 25% of the cells with CD30.
- LCT is associated with a poor prognosis. Studies have shown that MF and LCT have a common clonal origin.
- The risk factors involved in LCT are largely unknown. One group demonstrated that expression of CD25 may identify patients that are at risk for LCT.
- The median survival is 37 months for LCT versus 163 months of those with classic MF.

Recently, Herrmann et al. analyzed 14 patients with LCT to guide a dermatologist to what should prompt biopsy for suspected LCT. Three major categories were defined:

1. Large cell transformation as a new, solitary nodule within a long-standing classic MF patch or plaque
2. Large cell transformation as an abrupt onset of multiple pink scattered nodules without spontaneous resolution
3. Large cell transformation occurring within a new or enlarging tumor. In each of the cases the primary morphological lesion was a nonspecific erythematous papule.

None of these patients were noted to have the folliculotropic variant of MF.

- There are no small or large studies of folliculotropic MF with LCT; but there are several case reports.
- In one case, a patient with FMF with LCT was treated with electron beam irradiation and oral bexarotene with remission.
- Similar results were seen in this case.

**Histopathology**

- Figure 2: Punch biopsy of the left pre-auricular cheek consistent with Folliculotropic Mycosis Fungoides
- Figure 3 – Punch biopsy of the Mid Nasal Bridge revealing LCT.

**Laboratory**

- ANA, ENA panel negative
- Initial CBC with diff WNL, now with low hemoglobin and elevated MCV, with normal B12 and Folate levels
- Initial CMP notable for elevated glucose, now CMP with mild elevation in BUN and Cr, 24 and 0.97, respectively
- LDH Initially elevated and now WNL
- Initial and repeat CTs of the chest, abdomen and pelvis negative

**References**