F066  Management Issues in Cutaneous Lymphoma

Managing Pediatric Mycosis Fungoides

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Pediatric CD8+ Hypopigmented Mycosis Fungoides

Conflicts of Interest: none
A 12-year-old African-American boy went to a dermatologist in early 2012 with hypopigmented patches on buttocks spreading to trunk, arms, and legs. Treated for eczema with topical hydrocortisone with no improvement. Biopsy taken from buttocks December 2012.
HYPOPIGMENTED PATCHES
**Histopathology**

- Superficial dermal perivascular lymphocytic infiltrate of slight to moderate density.

- Multifocal infiltration of lymphocytes into epidermis consistent with epidermotropism.

- Mild lymphocytic atypia with enlargement and hyperchromatism of nucleii in a subset of lymphocytes.
IMMUNOHISTOCHEMISTRY

- Dominant population of lymphocytes:
  CD2+, CD3+, CD5+, and TCR beta F1+
- Infiltrating lymphocytes: **epidermotropic**
  CD8+ lymphs with few CD4+ lymphs
- Loss of CD7 expression
INITIAL TREATMENT

- Narrow band UVB 3x/wk for 9 months
- Complete remission (CR) so stopped nbUVB
- One month later patches recurred on buttocks, arms, and legs
- Restarted nb-UVB 3x/wk plus
  - Oral MTX 15 mg per week
  - Methotrexate discontinued 08/14 for lack of response
SECOND OPINION

- Methotrexate did not clear skin
- 11/14 - presented for a second opinion
- 0.5% BSA round/oval patches on buttocks
- Pruritus 0 of 10
- Triamcinolone 0.1% alternating with tazarotene cream 0.1%
- nbUVB 3x/week until clear then tapered to 2 x then 1 x per week then every other week
LABORATORY RESULTS

- Clonal rearrangement of TCR-gamma and TCR-beta chain genes in skin
- Flow cytometry of blood was normal
  - CD3+CD4+ cells: 1462 ul (48.1%)
  - CD3+CD8+ cells: 1009 ul (33.2%)
  - CD4+/CD8+ ratio: 1.45
  - CD4+CD26- cells: 29.9%
FOLLOW-UP

- **01/15**: CR, suggested to taper nbUVB to 1x/wk
- **07/15**: CR - suggested to taper off nbUVB in fall
- **01/16**: he continued nbUVB 1x/wk, no longer using topical therapies, CR ongoing
- **02/17**: he continued nbUVB 1x 2 wk in CR
- After 2 years in CR he will stop nbUVB in spring and get natural sun light
Management issues

Childhood MF presents with hypopigmented patches and is misdiagnosed as eczema or tinea versicolor.

Treat with nbUVB and topical steroids

Taper the nbUVB slowly after response

Don’t need to use methotrexate or nitrogen mustard

Treat the child, not the parents
Case 2

- A 14-year-old Caucasian boy presented in September 2015 with
- 3 year history of an erythematous rash diagnosed as atopic dermatitis and pigmented purpura
- Treated with topical triamcinolone and NB-UVB with improvement in skin lesions
PHYSICAL EXAMINATION

- Erythematous, scaly plaques and patches, mostly involving the lower extremities, buttocks, and lower abdomen
- MF involvement of 34.5% of body surface area (BSA)
- Two 1-cm mobile inguinal lymph nodes
PHYSICAL EXAMINATION
PHYSICAL EXAMINATION
HISTOPATHOLOGY

- Atypical lymphocytic infiltrate with focal epidermotropism
- Majority of lymphocytes are small with atypical hyperchromatic nuclei and irregular contours, admixed with large histiocytes and multinucleated giant cells

- Diagnosis of granulomatous MF
**Treatment Course**

- Topical triamcinolone, clobetasol, and nbUVB 3x per week x 6 months
- February 2016 - BSA decreased from 34.5% to 9%
- Continued to improve until June 2016 when he presented with a 10 day history of tenderness in the left inner thigh.
- Exam: new-onset rock-hard induration of left thigh
WORK UP

- Laboratory findings: Cr 3.23 mg/dl, Ca2+ 14.7 mg/dl, uric acid 8.9 mg/dl
- Renal biopsy: analgesic nephropathy - NSAIDs
- Left thigh biopsy: atypical lymphoid infiltrate with admixed multinucleated histiocytes infiltrating fibro-connective tissue and skeletal muscle
- IHC: CD4 >> CD8 cells, CD4 : CD8 ratio: 6:1
- Granulomatous MF with muscular infiltration
Histopathology
**MANAGEMENT**

- Pediatric oncology recommended CHOP but agreed to conservative management
- Oral prednisone 30 mg & allopurinol 200 mg daily
- Discharged from hospital 7 days later
- July 2016: significant improvement in skin lesions and left thigh mass resolved
- Examination: no induration of left medial thigh and affected BSA of 3%.
PET/CT Imaging

Hypermetabolism (SUV 4.4-12.7) of L thigh muscles, L gastrocnemius, R tibialis anterior, bilateral foot muscles, R scrotum

Left – Feb 2016 stable

Middle – June infiltration of muscles

Right - after high dose prednisone – decrease uptake in muscle
CLINICAL RESPONSE
MANAGEMENT

- Prednisone continued for 1 month & given clinical improvement, no chemotherapy. Retinoids contraindicated in growing child
- Complications: steroid-induced acne, diabetes mellitus (managed with insulin)
- August 2016: prednisone tapered to 5 mg daily, topical steroids resumed, and bexarotene gel prescribed to prevent granulomatous slack skin
T-cell receptor (TCR) gene high-throughput sequencing (HTS) Adaptive Technologies

4 T cell beta clones

5 T cell gamma clones
HTS: TCR-β Shared Clones

- 00547-01BB: blood sample
- 00547-01SB-SHS-16-36139A1: skin sample
- 00547-01SB-SHS-16-39116A1: subcutaneous tissue/muscle sample

TCR beta Clones are shared between blood, skin, muscle
Follow-up Nov 2016

- Steroid-induced acne and diabetes resolved (hemoglobin A1C level of 6.2%)
- Cr 1.62 mg/dl, uric acid 5.4 mg/dl
- Allopurinol discontinued
- Remains on low-dose prednisone and insulin
- Physical examination: 9.3% MF patch
- Bexarotene gel-induced erythema
- His insurance denied further visits.
**DISCUSSION**

- Muscle involvement in lymphoma is rare (1.8%) and is extraordinarily rare in MF.
- Epstein et al. - six of 86 (7.0%) MF patients demonstrated muscle involvement on autopsy.
- Only 4 cases reported in ante-mortem patients
- Site of involvement in all four was the gastrocnemius muscle, as in our patient
- None received steroids - consider for first line
Childhood Mycosis Fungoides