Dermatopathology Case Challenge: Recognizing Mimics and Masqueraders

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DISCLOSURE OF RELATIONSHIPS WITH INDUSTRY

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F045 Dermatopathology Case Challenge

DISCLOSURES

• None relevant to this talk
• Others:
  ◆ Royalties Lippincott Williams Wilkins
    ▪ Lever’s Histopathology of the Skin
  ◆ Consultant Myriad Genetics
Case 1

- 61 year old woman develops scaly plaques on thigh
SITE: Left thigh
DATE: 02/03/17
Pathology Summary

- Hyperkeratosis
- Lichenoid dermatitis
- Lymphocytes and neutrophils
Diagnosis?

A. Fixed drug eruption
B. Secondary syphilis
C. Lupus erythematosus
D. Mycosis fungoides
E. Sweet’s syndrome
Follow up

- Treponema stain negative
- RPR negative
- ANA negative
- Patient develops more lesions on legs
Site: Right thigh
Date: 2/20/17
Differential Diagnosis

- Lichenoid interface dermatitis
- Dyskeratotic keratinocytes
- Dermal perivascular lymphocytic infiltrate with a few neutrophils and eosinophils, RBC extravasation
- PAS and treponemal stains negative

Diagnosis:
Lichenoid and cytotoxic dermatitis

Erythema multiforme
Drug eruption
Pityriasis lichenoides
SITE: Lt prox dorsal forearm
DATE: 03/06/17
Differential Diagnosis

- Focal interface changes
- Dermal perivascular and periadnexal lymphocytic infiltrate with neutrophils and plasma cells
- PAS and treponemal immunostain negative

Diagnosis:
Focal interface changes and dermal inflammation

Connective tissue disease
Palisaded neutrophilic granulomatous dermatitis
Differential Diagnosis

- Interface changes
- Dermal perivascular and periadnexal lymphocytic infiltrate with plasma cells
- Extension to subcutis
- PAS and treponemal immunostain negative
- CD3, CD4, CD8, CD30 unremarkable

Diagnosis:
Interface dermatitis and dermal inflammation

Connective tissue disease
Drug eruption
Site: Right forearm
Date: 10/23/17
TCR PCR (gene rearrangement studies)

- Matching 235bp and 167bp clonal peaks in biopsies from:
  - Right arm
  - Right calf
  - Right thigh
  - Nasal mucosa
Subcutaneous Panniculitic T cell Lymphoma

- T cell lymphoma derived from mature cytotoxic T cells.
- 1% of all non-Hodgkin lymphoma
- Mean age of 36 at diagnosis
- 20% of patients have underlying autoimmune disease
  - SLE most frequent
Subcutaneous Panniculitic T cell Lymphoma

- Clinically present with nodules or infiltrated plaques of trunk and extremities
- May ulcerate
- May regress resulting in lipoatrophy
- Cytopenias, LFT abnormalities
- Hemophagocytic syndrome
Dense subcutaneous lobular T cell infiltrate
May show interface changes and mucin that resemble lupus erythematosus
T cells: CD3+ CD4- CD8+
T cells: granzyme B, TIA-1, perforin (+)
Beta F1 (+)
Gamma/delta, EBER, and CD56 (-)
Fatal subcutaneous panniculitis-like T-cell lymphoma with interface change and dermal mucin, a dead ringer for lupus erythematosus

We report a 48-year-old man who presented with ulcerated plaques and nodules of the lower extremities. Skin biopsies revealed a dense

Subcutaneous Panniculitis-Like T-Cell Lymphoma With Overlapping Clinicopathologic Features of Lupus Erythematosus: Coexistence of 2 Entities?

Laura B. Pincus, MD, Philip E. LeBoit, MD, Timothy H. McCalmont, MD, Roberto Ricci, MD, Carlo Buzio, MD, Lindy P. Fox, MD, Fergus Oliver, MD, and Lorenzo Cerroni, MD
Lupus Panniculitis or SPTCL?

- Does SPTCL mimic lupus panniculitis?
- Does lupus panniculitis have “atypical” features that mimic SPTCL?
- Do SPTCL and lupus panniculitis exist on a spectrum?
Atypical lymphocytic lobular panniculitis

Background: Although subcutaneous T-cell lymphoma (SCTCL) is considered an aggressive form of lymphoma, some patients manifest a long waxing and waning phase unaccompanied by constitutional symptoms.

Methods: Twelve patients were prospectively encountered, presenting with a lymphocytic panniculitis accompanied by lymphoid atypia, although not fulfilling criteria for SCTCL. Clinical, histologic, phenotypic, and genotypic analyses were conducted.

Results: There were five men, one boy, and six women; none had symptoms compatible with lupus erythematosus or aggressive SCTCL. All but two had a waxing and waning course of years. Four...
Checklist: dense panniculitic T cell infiltrate

**SPTCL**
- Lymphoid atypia
- Rimming of adipocytes
- Karyorrhexis
- CD8>CD4
- Elevated Ki67
- TCR positive

**LEP**
- Plasma cells
- Clusters of B cells
- Clusters of CD123+ cells
- TCR negative
SPTCL vs LEP, unhelpful features

- Degeneration of subcutaneous tissue
- Granulomatous inflammation

DDX: Cutaneous Gamma Delta T cell lymphoma

• Plaques or nodules on extremities that ulcerate
• B symptoms
• Hemophagocytic syndrome

• CD3+ CD4- CD8 +/-
• CD56+
• BF1- / GD+
Cutaneous Gamma Delta T cell lymphoma

• Rapid progression with poor prognosis
• Resistant to multiagent chemotherapy
• Median survival, studies:
  ❖ 15 months
  ❖ 31 months
Take home point

- T cell lymphoma masquerading as an interface/lichenoid dermatitis
- Persistence! If there is clinical-path mismatch or lesions change morphology, re-biopsy
Case 2

• 54 year old women presents with new rash
• Present for several weeks
• Started on back. Now on legs
• Itchy
PMH

• No history of skin rashes
• + history of asthma
• Meds: albuterol inhaler prn
• Teacher, no occupational exposures
Plan

- Triamcinolone ointment 0.1%
- Review skin care habits, emollients
- Biopsy
What is your diagnosis

• Nummular dermatitis
• Contact dermatitis
• Cutaneous T cell lymphoma
• Pemphigus
• Self-induced dermatosis
Follow up

• Patient returns in 3 months
• Feels she is getting worse with more lesions
Review path report

• Spongiotic dermatitis with eosinophils
Next Step?

A. Take another biopsy
B. Clobetasol ointment
C. 2 week course of prednisone
D. Check CBC, ANA, urinalysis
E. Start NB UVB treatment
Next Step?

• Take another biopsy
• Clobetasol ointment
• 2 week course of prednisone
• Check CBC, ANA, urinalysis
• Start NB UVB treatment
Pathology Report

- Spongiotic dermatitis with eosinophils
Call the pathologist

- I’ll get deeper levels and show it around
Diagnosis

- Psoriasis
- Impetigo
- Eczema herpeticum
- Pemphigus foliaceus
- Pityriasis rubra pilaris
Diagnosis

- Psoriasis
- Impetigo
- Eczema herpeticum
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ELISA Testing

**DIAGNOSIS**

Blood: **ELISA TESTING POSITIVE FOR DESMOGLEIN 1**

**Microscopic Description:**

**Blood** - The patient's blood has been used for enzyme-linked immunosorbent assay (ELISA) for the detection of DSG-1 and DSG-3 antibodies. The following index values are an average of two runs.

Average index value for anti DSG-1: 127.75
Average index value for anti DSG-3: 2.30
Pemphigus from the Greek “pemphix” meaning blister or bubble
Pemphigus Foliaceus: variants

- Idiopathic
- Endemic (fogo selvagem)
  - Brazil, Columbia, Peru
- Drug-induced
- Pemphigus erythematosisus
Pemphigus Foliaceus, Idiopathic

- Age of onset: 40-60 years
  - Fogo selvagem 10-30 years
- Men=Women
- All races and ethnicities
Pemphigus Foliaceus: clinical

- Often starts on the trunk, occasionally begins on head
- Crusted scaly lesions
- May not see blisters
- Typically no oral lesions
Pemphigus Foliaceus: drugs

- *Penicillamine*, most common
- ACE inhibitors
  - Captopril, Lisinopril, enalapril, fosinopril
- Angiotensin-II Receptor Blockers
  - Candesartan
- Antibiotics
  - Rifampin
- Tiopronin
Pemphigus Foliaceus: associated dz

- Bullous pemphigoid
- Myasthenia gravis
- Autoimmune disease
- Malignancy
  - Lymphoma, prostate CA, cutaneous SCC
- May transform to pemphigus vulgaris
  - Rare, shift from PV to PF more common
Pemphigus Foliaceus: immunofluorescence

- Direct IF: may look like Pemphigus vulgaris or may only stain superficial epithelium

- Indirect IF: Normal human skin as substrate is more sensitive than monkey esophagus
  - Using both substrates may improve sensitivity
Pemphigus Foliaceus ELISA

- Enzyme-linked immunosorbent assay
- Useful to make diagnosis
  - Sensitivity and specificity 97-99%
- Quantitative way to measure amount of circulating antibodies
Pemphigus Foliaceus: ELISA

- Anti DSG-1 (+)
- Anti DSG-3 (-)

- ELISA titers correlate with disease activity
- Monitor response to therapy
Take home message

• Spongiotic dermatitis with eosinophils
  ❖ Blistering diseases such as pemphigus foliaceus
Thank you

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