Cases from the Crescent City

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DISCLOSURE OF RELATIONSHIPS WITH INDUSTRY

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TEST QUESTION
1. The most likely diagnosis is:
The most likely diagnosis is:

A. Disseminated gonorrhea
B. Meningococcemia
C. Erythema multiforme
D. Rocky Mountain Spotted fever
E. Syphilis
Disseminated gonorrhea

- The answer is disseminated gonorrhea.
- Hematologic spread of the N. gonorrhea causes:
  - arthritis-dermatitis syndrome or
  - localized septic purulent arthritis without skin lesions.

Louisiana Dermatological Society Meeting, New Orleans, April 16, 2016
Disseminated Gonorrhea

• Diagnosis: Culture from the primary infected mucosal site: urethra, cervix, oropharynx, or rectum.

• Cultures of the joints, skin lesions, and blood are less likely to isolate the bacteria.

• Tx: Ceftriaxone 1 g IM or IV every 24 hours PLUS Azithromycycin 1 g orally in a single dose then oral agent x 7 days

• Louisiana: 1st (221.1 per 100,000 persons).
A 44-year-old male with history of renal transplant complains of new onset skin colored growths on his face and hands. Histopathology shows a bluish and bubbly cytoplasm. His skin condition increases his risk of which of the following cutaneous infections?
A 44-year-old male with history of renal transplant complains of new onset skin colored growths on his face and hands. Histopathology shows a bluish and bubbly cytoplasm. His skin condition increases his risk of which of the following cutaneous infections?

a. Candida  
b. Epstein Barr virus  
c. Herpes virus  
d. Human papilloma virus  
e. Molluscum contagiosum
2 Epidermodysplasia Verruciformis (EDV)

- The answer is D human papilloma virus (HPV).
- The genetic defect in EDV is caused by a truncating mutation in the genes EVER1 and EVER2.
- This allows beta-HPV types, which lack E5, to become pathogenic.
- H&E: keratinocytes have large perinuclear halos and blue-gray cytoplasm.

References:
- Kirnbauer R, Lenz P. Human Papillomaviruses in Dermatology 3rd edition, Elsevier Ltd 1303-1319
- Louisiana Dermatologic Society Meeting September 13, 2014
- Louisiana Dermatologic Society Meeting September 12, 2015
A 53-year-old female presented with 5 year history of skin lesions that have been slowly spreading and increasing in size. Review of systems was positive for weight loss, chronic fatigue, and lower extremities weakness. Punch biopsies were performed and the histopathology and Fite stain are shown above. This disease is associated with:
3 Histopathology

Fite stain
This disease is associated with:

A. Abnormal chest x ray
B. Atypical lymphocytes on flow cytometry
C. Decreased sensation in the lower extremities
D. Elevated aldolase levels
E. Joint pains in the hands and feet
Lepromatous leprosy

- The answer is C, decreased pain sensation in the lower extremities.
- Infection caused by Mycobacterium leprae.
- Peripheral nerve damage is one of the most common findings

- Louisiana Dermatological Society Meeting September 12, 2015
Cuatneous Leprosy

**Tuberculoid (paucibacillary)**
- Asymmetric
- Few hypopigmented or hyperpigmented macules with loss of sensation
- Swelling of peripheral nerves

**Lepromatous (multibacillary)**
- Symmetrics
- Multiple skin lesions: Nodules, plaques
- Nasal mucosa involvement: congestion, nosebleeds
- Anesthesia in a stocking-glove distribution
Leprosy in the US

• 178 new cases reported in 2015
• 72 percent (129) of new cases were reported by Arkansas, California, Florida, Hawaii, Louisiana, New York and Texas
• Diagnosis: Skin or nerve biopsy
A 25-year-old otherwise healthy woman presents with a two-week history of painful nodules on her lower legs, as shown in the image below.

- She mentions that lesions developed several days after receiving a pedicure.
- Which of the following Mycobacterial species do you suspect caused this infection?

a. M. leprae 
b. M. ulcerans 
c. M. kansasii 
d. M. fortuitum 
e. M. bovis
4 Cutaneous Mycobacteria

- The answer is D, M. fortuitum.
- The occurrence of rapidly growing mycobacterial infections after **nail salon pedicures** has been well documented in the literature.
  - Mycobacterium fortuitum
  - Mycobacterium chelonae
- Skin microtrauma due to **shaving** has been identified as a risk factor for disease.
- **Tattooing** is another risk for exposure.

A 23 year old male with past medical history of HIV is evaluated for papules on the face for 3 months. They are non pruritic and asymptomatic. What is the most likely causative organism?

A. Herpes simplex virus
B. Varicella virus
C. Parapox virus
D. Propionibacterium acnes
E. Malassezia furfur
4 Molluscum contagiosum (MC)

• The answer is C parapox virus (MC) in an HIV patient.
• In patients with HIV, MC can indicate advancing immunosuppression and can be difficult to treat.

Chen et al. Lancet Infectious Diseases, 2013-10-01, Volume 13, Issue 10, Pages 877-888
A 46-year-old Caucasian male with a past medical history of HIV/AIDS presented to the emergency department with fever, pancytopenia, and this large plaque on the forehead. You are called in emergently for help with the case. Histopathology from a 4mm punch biopsy of the forehead lesion is shown. The treatment of choice for this patient is:

a. Amphotericin B  
b. Fluconazole  
c. Penicillin  
d. Valacyclovir  
e. Voriconazole
Herpes simplex

- The answer is D, Valacyclovir.
- The patient was confirmed to have an atypical presentation of HSV-2 infection.
- In patients with low CD4 counts, vesicles can be transient, leaving ulcerated, crusted and necrotic lesions.
- Pain, active vesicular border and a scalloped periphery are clues to HSV infection.
- The presence of multinucleated keratinocytes on histopathology are the key to the diagnosis of herpes infection.

- Louisiana Dermatological Society Meeting September 2015.
Tzanck smear
• A 47 year old male with HIV/AIDS (CD4 count-3) presents to the ED with an ulcer on the penis and scattered umbilicated papules on the face, trunk and extremities with hemorrhagic and necrotic centers.
• There is a penile ulcer and several white papules on the penile shaft. You perform a KOH and Biopsy of the penile ulcer. What is your diagnosis?
• What is your diagnosis?
  a. Blastomycosis
  b. Cryptococcus neoformans
  c. Histoplasma capsulatum
  d. Molluscum contagiosum
  e. Treponema Pallidum
Disseminated Cryptococcus

- The answer is B, Cryptococcus neoformans.
- The patient had disseminated Cryptococcus, which is an opportunistic infection that a **primary pulmonary infection** that can involve the CNS, bone, and visceral organs.
- It is the fourth most common opportunistic infection in AIDS patients (CD4 counts <100)
- Cutaneous manifestations of infection vary from molluscum contagiosum like papules, ulcerations, cellulitis, and herpetiform lesions.

- KOH and Path photos: Louisiana Dermatological Society Meeting March 7, 2015
Disseminated Cryptococcus

• **Diagnosis:**
  – Culture of CSF, sputum, urine, and blood
  – Fixed tissue staining
    • Mucicarmine
    • Fontana-Masson
  – Serum and CSF testing for cryptococcal antigen

• **Tx:** Flucytosine + Fluconazole
A 44-year-old male is evaluated in your clinic for a 2-day history of pruritic rash on the face, chest and back. The patient reports generalized malaise and subjective fevers and chills overnight. Photograph of the patient is shown. Of the following, the most appropriate in-office test to perform is:
A 44-year-old male is evaluated in your clinic for a 2-day history of pruritic rash on the face, chest and back. The patient reports generalized malaise and subjective fevers and chills overnight. Photograph of the patient is shown. Of the following, the most appropriate in office test to perform is:

A. Aerobic culture
B. Gram stain
C. KOH prep
D. Scabies prep
E. Tzanck smear
8 Primary Varicella

- The best answer is E Tzanck smear.
- Pink papules and vesicles of various stages.
- On Tzanck smear, the characteristic finding for herpetic infections is acantholytic and multinucleated keratinocytes.
- In one study the sensitivity and specificity of this cytologic finding for herpetic infections were 84.7% and 100%, respectively.

- Durdu et al. Journal of the American Academy of Dermatology, 2008-12-01, Volume 59, Issue 6, Pages 958-964
What is the best next test?

A. Skin culture
B. Pharyngeal culture
C. Patch test
D. KOH prep
E. Scabies prep
9 Staphylococcal Scalded Skin Syndrome

- Tender flaccid bullae
- Hematogenous spread of exfoliative toxin (ETA and ETB) which cleave desmoglein 1
- Leads to disruption at the granular layer
- Positive cultures come from conjunctiva, oropharynx, feces
- Treat with Dicloxacillin, Cephalexin
A 72 year old female with a history of CLL status post stem cell transplant is evaluated for this lesion on the right thigh. Biopsies for H&E are show. What is the most likely diagnosis?

A. Bullous pemphigoid  
B. Calciphylaxis  
C. Bullous impetigo  
D. Mucormycosis  
E. Vibrio vulnificus
Cutaneous Mucormycosis

• Rhizops, Mucor, Absidia
• Characterized by necrotic skin lesions
• Risk factors are diabetes mellitus and immunosuppression
• Broad non septate hyphae with 90° branching
• **Primary infection:** direct inoculation
  – patients with burns or other forms of local skin trauma.
• **Secondary cutaneous:** hematogenous spread
  – painful cellulitis to an ulcer with black eschar.
11. This skin disease often involves:
• This skin disease often involves:
  A. Brain
  B. Eyes
  C. Kidneys
  D. Muscle
  E. Salivary glands
Dermatomyositis

- The answer is muscle.
- The photographs show a patient with dermatomyositis.
- Autoimmune connective tissue disease that can present as a proximal extensor inflammatory myopathy.

KEY POINTS TO DX:
- PHOTOGRAPH DISTRIBUTION
- POIKILODERMA
- HELIOTROPE
- GOTTRON'S
- MOTTLED PIGMENTATION
- CUTICULAR DYSTROPHY

- Louisiana Dermatological Society Meeting, New Orleans, September 17, 2016
12. This 68-year-old male with a past medical history of polycythemia vera for 15 years presents with a new onset rash. Which drug is responsible for his skin eruption?
This 68-year-old male with a past medical history of polycythemia vera for 15 years presents with a new onset rash. Which drug is responsible for his skin eruption?

A. Captopril
B. Hydroxyurea
C. Minocycline
D. Terbinafine
E. Voriconazole
Drug induced dermatomyositis

- The answer is hydroxyurea, which a known cause of drug induced dermatomyositis.
- Others are phenytoin, penicillamine, statins, phenylbutazone, tegafur, and TNF alpha inhibitors.

This 20-year-old female is evaluated in your office for this new rash on the trunk and extremities.

- Histopathology shows **urticarial vasculitis**.
- She has a low CH50 and low C1q.
- Which disease is most likely related?
  a. Allergic rhinitis
  b. Crohn’s disease
  c. Dermatomyositis
  d. Systemic lupus erythematosus
  e. Ulcerative colitis
The answer is Systemic lupus erythematosus.

Hypocomplementememic urticarial vasculitis (HUV) is associated with systemic symptoms including:
- musculoskeletal,
- pulmonary,
- ocular,
- renal manifestations,

Associated disease include:
- SLE,
- Sjogren’s syndrome,
- celiac disease,
- rheumatoid arthritis,
- autoimmune thyroiditis, and
- Type I diabetes mellitus.

Williams, J et al. Anaphylaxis and Urticaria. Immunology and Allergy Clinics of North America. 35 (1); 199-219

Type of Chronic Cutaneous Lupus

- **Acute CLE**
  - Butterfly rash

- **Subacute CLE**
  - Polycyclic plaques / papulosquamous psoriasiform

- **Chronic CLE**
  - Discoid, chillblain, tumid, panniculitis
Subacute Cutaneous Lupus
Discoid Lupus Erythematosus
Other

Tumid Lupus

Lupus Panniculitis
Work up for Cutaneous Lupus

**First visit:**
- CBC with diff
- CMP
- ANA
- Urinalysis

**Consider:**
- ENA
- C3/C4
- ESR/CRP

**Follow up:**
- ROS
- Physical exam
- CBC
- Urinalysis
- ANA (if not positive)
A 45-year-old female is in your office to establish dermatologic care. She has a long history of Raynaud’s phenomenon. About 10 years ago she developed ulcers on the distal fingertips and has had resorption of 2 of her fingertips. This year, she has noticed gradual difficulty in swallowing solids, and has noticed changes in the skin around her mouth. Her ANA is positive 1:160 and she also has a positive scl-70. The scl-70 autoantibody is suggestive of the following diagnosis:
A 45-year-old female is in your office to establish dermatologic care. She has a long history of Raynaud’s phenomenon. About 10 years ago she developed ulcers on the distal fingertips and has had resorption of 2 of her fingertips. This year, she has noticed gradual difficulty in swallowing solids, and has noticed changes in the skin around her mouth. Her ANA is positive 1:160 and she also has a positive scl-70. The scl-70 autoantibody is suggestive of the following diagnosis:

a. Diffuse systemic sclerosis
b. CREST syndrome
c. Limited systemic sclerosis
d. Lupus erythematosus
e. Mixed connective tissue disease
Diffuse systemic sclerosis

• The answer is A diffuse systemic sclerosis.
• The scl-70 auto-antibody corresponds to topoisomerase I.
• It is associated with diffuse systemic sclerosis and in particular lung fibrosis.
• This test is highly specific (>99.5% in some studies) but only moderately sensitive (20-50%).

• Louisiana Dermatological Society Meeting November 16 2014.
How to tell the difference

Limited Cutaneous Systemic Sclerosis
- Raynaud’s
- + centromere
- Interstitial Lung disease
- Esophageal dismotility
- Pulmonary artery Hypertension
- Sclerodactyly
- Nail changes
- Calcinosis
- Telangiectasias
- +ANA

Diffuse Cutaneous Systemic Sclerosis
- Facial involvement
- Proximal involvement
- Explosive Raynaud’s
- Digital resorption
- Renal crisis
- +Scl70
- +RNA polymerase III
Systemic sclerosis

Proximal involvement

Nailfold telangiectasias
Systemic sclerosis

Digital resorption

Salt and pepper dyspigmentation
15. What is the diagnosis?

A. Tinea corporis
B. Blastomycosis
C. Mycosis Fungoides
D. Bowen’s disease
E. Sarcoidosis
Large Cell Transformation of Mycosis Fungoides

• 20-50% of advanced MF
• Histopathological transformation of neoplastic small lymphocytes to a large cell phenotype.
• Associated with a poor prognosis

• Pulitzer et al. Pathology, 2014; 46(7):610-616
16

- 74-year-old African American female presents with a one-year history of generalized rash which consists of numerous 1-3mm papules over the face, chest, arms, abdomen, and upper thighs. Histopathology is shown. What is the next best step in diagnosis?
16. What is the next best step in diagnosis?

A. Ophthalmic exam
B. CT head and neck
C. Chest X ray
D. Peripheral blood smear
E. Serum protein electrophoresis
The best answer is E, **serum protein electrophoresis**.

The photograph and histopathology demonstrate scleromyxedema.

Histopathology: mucin deposition, fibroblasts, and fibrosis.

Highly associated with a monoclonal gammopathy—
—CHECK SPEP!
Extracutaneous manifestations of Scleromyxedema

- dermato-neuro syndrome
- peripheral neuropathy
  - arthralgias
- cardiac involvement
17 and 18
17. WHAT IS YOUR DIAGNOSIS?

A. Lupus erythematosus
B. Mucormycosis
C. Mycosis fungoides
D. Sarcoidosis
E. Rosacea
Cutaneous Sarcoidosis

• The answer is D, sarcoidosis.
• Increased incidence in African Americans
• Red-brown or violaceous papules and plaques
18. Which systemic manifestation is associated with lupus pernio?

A. Heart conduction defects
B. Lung involvement
C. Migrating polyarteritis
D. Nephropathy
E. Parotid gland enlargement
Cutaneous Sarcoidosis

- The answer is B, lung involvement.
- Lupus pernio is associated with lung and laryngeal involvement.
33 year old male with a history of chronic blisters on the face and lower extremities is evaluated in clinic. You perform a 4mm punch biopsy at the edge of a blister. Histopathology is shown as well as collagen IV stain. The diagnosis is:
The diagnosis is:

A. Bullous lupus erythematosus
B. Bullous pemphigoid
C. Epidermolysis bullosa acquisita
D. Pemphigus foliaceus
E. Pemphigus vulgaris
Bullous Pemphigoid

• The answer is A. bullous pemphigoid.
• Histopathology = subepidermal blister.
• Collagen IV stain = blister above the collagen IV stained areas.
  – level of the blister occurs at the lamina lucida.

• Bologna. Dermatology. Elsevier 2012
• Louisiana Dermatologic Society Meeting September 13, 2015
Bullous pemphigoid

Tense Bullae

Urticaria BP
BLISTERING DISEASE

Pemphigus Vulgaris - demoglein
Epidermolysis Bullosa Simplex - keratins 5 and 14
Bullous Pemphigoid - BP Antigens
Dystrophic Epidermolysis Bullosa - Collagen 7

Stratum corneum
Stratum lucidum
Stratum granulosum
Stratum spinosum
Stratum basale (germinativum)
69-year-old female with history of skin lesions and worsening and painful **stomatitis**. Lesions began on the scalp and started slowly spread to involve the face, trunk, extremities. Lesions are tender but do not itch. She has these **painful erosions on the lips, tongue, and buccal mucosa** for the past 2 weeks. She denies any history of HSV or new medications.

**Biopsy:** punch biopsy shows subcorneal microvesiculation with necrotic keratinocytes and vacuolar interface changes with apoptotic keratinocytes and mild perivascular lymphocytic infiltrate.

**DIF:** intercellular IgG and complement C3 and at the DEJ

**IIF:** positive to **rat bladder** transitional epithelium
The most common neoplasm associated with this patient’s condition is:

A. Castleman’s disease
B. Chronic myelogenous leukemia
C. Non Hodgkin’s lymphoma
D. Sarcoma
E. Thymoma
Paraneoplastic Pemphigus

• The answer is C. Non-Hodgkin’s lymphoma.
• Paraneoplastic pemphigus is an autoimmune suprabasilar blistering disorder seen in association with malignancy.
• The most characteristic clinical feature is intractable hemorrhagic stomatitis, often extending to the vermillion border and resistant to therapy.

• Louisiana Dermatological Society Meeting November 15 2015
A 52 year old male complains of painful lesions on the scalp and back for over 1 year. On examination he has several tender shallow erosions with scale on the scalp, neck, chest and back. He denies the presence of oral or genital ulceration. Histopathology is shown. This patient likely has antibodies to:

A. Hepatitis C  
B. Desmoglein 1  
C. Desmoglein 3  
D. Anti nuclear  
E. Collagen VII
Pemphigus Foliaceus

- The correct answer is B desmoglein 1 antibodies.
- The diagnosis is pemphigus folicaceus which is characterized by autoantibodies that target the intercellular adhesion protein desmoglein 1.
- This causes acantholysis and subcorneal blisters that rupture easily leaving erosions and scale.

22. WHAT IS YOUR DIAGNOSIS?
A. Ocular rosacea
B. Allergic contact dermatitis
C. Cicatricial pemphigoid
D. Angioedema
WHAT IS THE PROTEIN TARGET IN THIS DISEASE?

A. Bullous pemphigoid antigen 1
B. Collagen VII
C. β4 integrin
D. desmoglein
Ocular
Cicatricial
Pemphigoid

- Autoantibodies to the β4 subunit of α6β4 integrin is specific for the ocular predominant disease
- Other forms of cicatricial pemphigoid can involve laminin or BP180
- Starts as a chronic conjunctivitis (inflammation) that leads to progressive scar tissue formation.
- Trichiasis, entropion are common and lead to corneal trauma and blindness
The most likely diagnosis is:
• The most likely diagnosis is:
  A. Cicatricial pemphigoid
  B. Erythema multiforme
  C. Lichen planus
  D. Pemphigus Foliaceus
  E. Pemphigus Vulgaris
• The answer is pemphigus vulgaris.
• Antibodies to intracellular keratinocyte adhesion protein desmoglein 3
• Oral erosions- buccal and palatine- often the presenting symptoms.
• DIF: intercellular IgG and C3 deposition, primarily in lower epidermis.

UNUSUAL CLINICAL PRESENTATIONS:
  o isolated crusted plaque on face or scalp,
  o paronychia
  o foot ulcers
  o dishidrotic eczema
  o macroglossia.

• Amagai, M. Pemphigus in J. Bologna (Ed.) Dermatology. Elsevier. 2012
• Louisiana Dermatological Society Meeting, New Orleans, September 17, 2016
Thank you!

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