Conflict of Interest

I have no relevant conflicts to disclose.

Case 1

- A 45 year old man presents with painless vesicles and bullae on his face and dorsal hands
You also notice
- Erosions (fragility)
- Hypertrichosis
- Hyperpigmentation
- Milia

Case 1, Question 1
The most likely diagnosis is:
A. Pemphigus vulgaris
B. Bullous impetigo
C. Bullous pemphigoid
D. Porphyria cutanea tarda
E. Dermatitis herpetiformis
Case 1, Question 2
Porphyria cutanea tarda
The underlying condition most likely to be associated is:
A. Hemochromatosis
B. Hepatitis C
C. Chronic renal insufficiency
D. Diabetes mellitus
E. NSAID use

Porphyria Cutanea Tarda (PCT)
- Most common form of porphyria
- Presents in 5th decade of life
- M (60%), F (40%)
- Risk factors
  - HCV 85%
  - Hemochromatosis
  - Alcoholism
  - Genetic predisposition
- Iron overload leads to reduced uroporphyrinogen decarboxylase activity
Porphyria Cutanea Tarda

• Sun-exposed sites (dorsal hands, ears, face)
• Non-inflammatory bulla
• Skin fragility
• Facial hypertrichosis
• Milia
• Hyperpigmentation

Porphyria Cutanea Tarda Treatment

• Phlebotomy +/- erythropoetin
• Low dose hydroxychloroquine
  – 200 mg twice per week
• Sun avoidance/photoprotection

Case 2

• 43 yo Scandinavian male
• Chronic abdominal pain, diarrhea, weight loss
• Small bowel biopsy: shortening of intestinal villi
• Pruritic papules and vesicles on extensor surfaces and buttocks
• No mucous membrane involvement
Case 2, Question 1
The most likely diagnosis is:
A. Pemphigus vulgaris
B. Bullous impetigo
C. Bullous pemphigoid
D. Porphyria cutanea tarda
E. Dermatitis herpetiformis

E. Dermatitis herpetiformis
Case 2, Question 2
Dermatitis Herpetiformis
This condition is most closely associated with:
A. Underlying lymphoma
B. Gluten-sensitive enteropathy
C. Autoimmune diseases
D. Diabetes mellitus
E. No associated underlying condition
Dermatitis Herpetiformis
Associated Diseases

- Associated with gluten-sensitive enteropathy
- Increased risk of GI lymphoma
- Thyroid diseases in 20%
  - hypothyroidism #1
  - acute autoimmune thyroiditis
  - hyperthyroidism
- Other: pernicious anemia, Addison’s disease

Dermatitis Herpetiformis
Diagnosis

<table>
<thead>
<tr>
<th>Test</th>
<th>Mode</th>
<th>Result in DH</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin biopsy</td>
<td>H&amp;E</td>
<td>DIF(+) granular IgA upper dermis</td>
<td></td>
</tr>
<tr>
<td>IgA tissue transglutaminase</td>
<td>ELISA</td>
<td>Sensitivity 90%, Specificity 95%</td>
<td></td>
</tr>
<tr>
<td>IgA anti-endomysial Ab</td>
<td>IF, blood</td>
<td>(+) 70-80%</td>
<td>Antigen is tissue transglutaminase</td>
</tr>
</tbody>
</table>

Dermatitis Herpetiformis
Treatment

- Gluten free diet
- Dapsone (50-300 mg daily) – rapid response
- Does not respond to topical or systemic steroids
Pemphigus Vulgaris

- Elderly
- Widespread, friable blisters -> erosions
- Oral erosions
- Paraneoplastic association suggested by significant mucosal disease

Case 3

- 48 yr old man
- Facial rash x 3 months
- Increasing fatigue
- Difficulty stocking overhead shelves
Case 3, Question 1
The lab test most likely to be abnormal is:
A. ESR
B. Anti-smith antibody
C. Rheumatoid factor
D. Serum creatine kinase
E. Anti-dsDNA

Dermatomyositis
• Proximal muscle weakness
• Characteristic skin findings
  – Heliotrope: peri-orbital edema, violaceous rash @ eyelids
  – Gottron’s papules: flat, violaceous @ MCP, PIP, DIP joints
  – Photosensitive rash, shawl sign
  – Skin biopsy: similar to lupus (vacuolar interface + mucin)
• Lab tests:
  – Elevated CK or aldolase
  – Muscle biopsy, electromyography
  – ANA positive in 60-80%
  – Anti-Jo antibody associated with interstitial lung disease
Case 3, Question 2
Dermatomyositis

• In an adult female patient with dermatomyositis, which is the most important test to evaluate for an associated malignancy?
A. Thyroid scan
B. Mammogram
C. Colonoscopy
D. Upper endoscopy
E. Pelvic ultrasound

Dermatomyositis
Paraneoplastic Associations

• Dermatomyositis is associated with underlying malignancy in 32% of adult patients
  – Risk highest > age 45, especially men
• Women: ovarian cancer
• Men: lung cancer
• Asians: hepatomas, esophageal adenoCA
Case 4

- Healthy 20 yo college student
- Pruritic eruption x 10 days

Case 4, Question 1
The most likely diagnosis is:

A. Psoriasis  
B. Pityriasis rosea  
C. Secondary syphilis  
D. Subacute cutaneous lupus  
E. Tinea versicolor

Case 4, Question 1
The most likely diagnosis is:

A. Psoriasis  
B. Pityriasis rosea  
C. Secondary syphilis  
D. Subacute cutaneous lupus  
E. Tinea versicolor
Pityriasis Rosea

- Common
- Herald patch: 1 week earlier, larger plaque
- Widespread, symmetrical oval pink papules and plaques with a central scale
- Central trunk and back (Christmas tree pattern)
- Mimics the rash of secondary syphilis
  - CHECK RPR

Next case

Subacute Cutaneous LE (SCLE)

- Women aged 15-40
- 50% meet ARA criteria for SLE, only 10% severe
- Renal or CNS disease rare = good prognosis
- 80% ANA positive
- Positive Ro/SSA
  - Neonatal heart block is risk
- Photosensitive
  - Ro correlates with photosensitivity
Subacute Cutaneous LE
Skin Lesions
• Papulosquamous: Resembles psoriasis
• Annular
• Sun-exposed areas
• Face, V-neck chest, and back
• Heals without scarring
• (unlike discoid LE)

Case 5
• 55 yr old male
• COPD, HTN, h/o psoriasis
• Fever, shaking chills, and diffuse erythema (erythroderma)
• Meds:
  – ACE inhibitor x 3 months
  – 1 week of pulsed prednisone with rapid taper for COPD flare
Case 5, Question 1
The most likely diagnosis is:
A. Drug eruption due to ACE inhibitor
B. Paraneoplastic syndrome due to non-small cell lung cancer
C. Sézary syndrome (cutaneous T-cell lymphoma)
D. Flare of psoriasis due to prednisone taper
E. Staphylococcal Scalded Skin Syndrome

Pustular Psoriasis
- Commonly drug-induced
- Corticosteroid taper
- Psoriasis flare + pustules
- Can be life threatening
  - High cardiac output state
  - Electrolyte imbalance
  - Respiratory distress
  - Temperature dysregulation
Psoriasis Comorbidities

- Recent evidence links severe psoriasis with
  - Arthritis
  - Cardiovascular disease (including MI)
  - Hypertension
  - Obesity
  - Diabetes
  - Metabolic syndrome
  - Malignancies
    - Lymphomas, SCCs, Solid organ malignancies
    - Higher mortality
    - Poor quality of life
Psoriasis Aggravators

- Medications
  - Systemic steroids
  - Beta blockers
  - Lithium
  - Hydroxychloroquine
- Strep infections
  - Guttate psoriasis (children)
- Trauma
- Sunburn
- Severe life stress
- HIV
  - Up to 6% of patients with AIDS develop psoriasis
- Alcohol for some
- Smoking for some

Treatment for Psoriasis

- Topical therapy
  - Steroid ointment (start mid-potency)
  - Calcipotriene ointment
  - Tar
- Phototherapy
  - PUVA: psoralens + UVA
- Systemic therapy
  - Acitretin (oral retinoid)
  - Methotrexate, cyclosporine
  - Biologics
    - etanercept, infliximab, adalimumab (TNF alpha blockade)
    - ustekinumab (IL-12, IL-23 blockade)
  **Systemic steroids are NOT on this list!**

Case 6

- 42 yo HIV+ male admitted to ICU
- Severely hypotensive → IV fluids, norepinephrine
- ?Sepsis → antibiotics are started
- History of taking TMP/SMX for UTI
- 24 hrs after admission:
  - febrile
  - rash, rapidly progressive
  - skin is painful
  - gritty sensation in eyes
  - oral pain, difficulty swallowing
Case 6, Question 1
The most likely diagnosis is:
A. Drug Eruption
B. Staphylococcal Scalded Skin Syndrome
C. Autoimmune Blistering Disorder
D. Toxic Shock Syndrome
E. Severe viral exanthem

Toxic epidermal necrolysis (TEN)
Case 6, Question 2
All of the following are red flags of a serious drug eruption except:
A. Oral (mucocutaneous) involvement
B. Morbilliform eruption
C. Vesicle/Bullae
D. Target lesions
E. Facial edema

Case 6, Question 2
All of the following are red flags of a serious drug eruption except:
A. Oral (mucocutaneous) involvement
B. Morbilliform eruption
C. Vesicle/Bullae
D. Target lesions
E. Facial edema

Case 6, Question 3
All of the following are signs/symptoms of a drug hypersensitivity reaction except:
A. Eosinophilia
B. Lymphadenopathy
C. Elevated liver function tests
D. Hypertension
E. Facial edema
Case 6, Question 3

All of the following are signs/symptoms of a drug hypersensitivity reaction except:

A. Eosinophilia
B. Lymphadenopathy
C. Elevated liver function tests
D. Hypertension
E. Facial edema

Drug eruptions:
Simple or Complex

<table>
<thead>
<tr>
<th>Simple</th>
<th>Complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morbilliform drug eruption</td>
<td>Drug hypersensitivity reaction</td>
</tr>
<tr>
<td></td>
<td>Stevens-Johnson (SJ)</td>
</tr>
<tr>
<td>Minimal systemic symptoms</td>
<td>Toxic epidermal necrolysis (TEN)</td>
</tr>
<tr>
<td></td>
<td>Systemic involvement</td>
</tr>
<tr>
<td></td>
<td>Potentially life threatening</td>
</tr>
</tbody>
</table>

Morbilliform (Simple) Drug Eruption

- common
- erythematous macules, papules
- pruritus
- no systemic symptoms
- begins in 2nd week
- risk factors: EBV, HIV infection
- treatment:
  - D/C med if severe
  - symptomatic treatment: diphenhydramine, topical steroids
Hypersensitivity Reactions

Clinical features (General)

- Rash
- Fever
- Pharyngitis
- Hepatitis
- Hematologic abnormalities
  - eosinophilia
  - atypical lymphocytosis
- Lymphadenopathy
- Facial edema

Hypersensitivity Reactions

- Skin eruption + visceral involvement
- Late onset: 2-6 weeks after medication started
- Classic associations
  - Aromatic anticonvulsants THESE CROSS-REACT
    - phenobarbital, carbamazepine, phenytoin, lamotrigine
  - Allopurinol
  - Dapsone
  - NSAIDs
  - Sulfonamides
  - Anti-retrovirals
- Treatment:
  - Must stop medication (cannot treat through)
  - Prednisone (1-2mg/kg/day)

Facial edema is key to the diagnosis of drug hypersensitivity reactions.
Stevens-Johnson Syndrome (SJS)
Clinical morphology:
- Target lesions
- Two or more mucous membranes (eyes, mouth, genitalia) involved
- Can progress to resemble toxic epidermal necrolysis (TEN)

Toxic Epidermal Necrolysis (TEN)
- Life threatening
- Blistering reaction
- Skin pain > pruritus
- Erythema -> bullae -> denuded dermis
- Medical emergency: call dermatology immediately
SJS/TEN: Emergency Management

- Stop all unnecessary medications
  - The major predictor of survival and severity of disease
- Treatment
  - Systemic
    - Check for Mycoplasma- 25% of SJS in pediatric patients
    - Controversial
      - SJS: high dose corticosteroids
      - TEN: IVIG 0.5-1g/kg/d x 4 days
    - Refer to burn unit or ICU early
      - Reduces risk of infection and reduces mortality to 5%
- Call Ophthalmology

Case 7

- 37 yo woman with inflammatory bowel disease
- Rapidly progressive, painful ulceration
- 3 days after bumping her leg on a chair
Case 7, Question 1

• The most appropriate treatment for this disorder is
  A. Systemic steroids
  B. Intravenous antibiotics
  C. Surgical debridement
  D. Compression dressing
  E. Wet to dry dressings

Pyoderma Gangrenosum

• Rapidly progressive (days) ulcerative process
• Begins as a small pustule
• Undermined violaceous border
• Occur anywhere on body
• Triggered by trauma (pathergy) (surgical debridement, attempts to graft)
Pyoderma Gangrenosum

• 50% have no underlying cause
• Associations:
  – Inflammatory bowel disease (1.5%-5% of IBD patients get PG)
  – Rheumatoid arthritis
  – Seronegative arthritis
  – Hematologic abnormalities

Pyoderma Gangrenosum Treatment

• Treatment of underlying disease may not help PG
• Topical therapy:
  – Superpotent steroids
  – Topical tacrolimus
• Systemic therapy:
  – Systemic steroids
  – Cyclosporine
  – Tacrolimus
  – Mycophenolate mofetil
  – Thalidomide
  – TNF-inhibitors (infliximab)

Case 8

• 52 yr old Caucasian male
• Wife noted enlarging mole on his back
• Family history – brother recently diagnosed with melanoma, mother died of metastatic melanoma
Case 8, Question 1

The most significant prognostic indicator for melanoma is:
A. Anatomic location of melanoma
B. Diameter of melanoma
C. Positive family history in a first degree relative
D. Thickness of melanoma
E. History numerous childhood blistering sunburns

Diagnosis of Melanoma

- Prognosis is DEPENDENT on the depth of lesion (Breslow’s depth)
  - < 1mm thickness is low risk
  - > 1mm Consider sentinel lymph node biopsy

- If melanoma is on the differential, complete excision or full thickness incisional biopsy is indicated
Malignant Melanoma

- Asymmetry
- Border
- Color
- Diameter (>6mm)
- Evolution

---

Case 9

- 30 yr old Asian female
- Fevers, malaise, arthralgia
- Prior history of lower extremity cellulitis with recent 10 day course of cephalexin
- Meds: OCPs
- ROS: intermittent abdominal pain and loose stool
- Family history: inflammatory bowel disease
Case 9, Question 1

The most likely diagnosis is:
A. Erythema multiforme
B. Cellulitis resistant to cephalosporins
C. Pretibial myxedema
D. Erythema nodosum
E. Sweet’s syndrome

Case 9, Question 1

The most likely diagnosis is:
A. Erythema multiforme
B. Cellulitis resistant to cephalosporins
C. Pretibial myxedema
D. Erythema nodosum
E. Sweet’s syndrome

Case 9, Question 2

All of the following are associated with the erythema nodosum EXCEPT:
A. Oral contraceptive use
B. Streptococcal infection
C. Hyperthyroidism
D. Sarcoidosis
E. Inflammatory bowel disease
Case 9, Question 2

All of the following are associated with the erythema nodosum EXCEPT:
A. Oral contraceptive use
B. Streptococcal infection
C. Hyperthyroidism
D. Sarcoidosis
E. Inflammatory bowel disease

Erythema Nodosum: Associations

- **Common**
  - Idiopathic (35-55%)
  - Infection: STREP
    - URI, Mycoplasma, TB
    - Coci (+ prognosis)
  - Drugs
    - OCPs, sulfonamides, PCN, halides
  - Sarcoidosis
  - IBD (Crohn’s > UC)

- **Uncommon**
  - Yersinia
  - Behcet’s
  - Sweet’s syndrome
  - Pregnancy
  - Malignancy

- **Rare**
  - Brucellosis
  - Meningococcus/gonococcus
  - E. coli
  - Pertussis
  - Syphilis
  - Leptosy
  - Cat Scratch
  - Chlamydia
  - Blastomycosis
  - Histoplasmosis
  - HIV

Erythema Nodosum Treatment

- Elevation, bedrest, reduced exercise
- Support stockings
- NSAID’s or indomethacin (AVOID in IBD)
- SSKI (potassium iodide) 5-15 gtt’s TID
  - Improvement can be seen within weeks
Case 10

- 19 yr old male
- Pruritic rash on left forearm
- History of allergic rhinitis and asthma
- Meds: albuterol inhaler and antihistamines prn
- Rash improves with triamcinolone ointment but recurs

Case 10, Question 1

Best next management step is:
A. Add antibiotic to cover bacterial superinfection
B. Consider patch testing for contact allergen
C. Counsel patient on gentle skin care and use of emollients
D. Add antiviral to cover for zoster
E. Treat for scabies

Case 10, Question 1

Best next management step is:
A. Add antibiotic to cover bacterial superinfection
B. Consider patch testing for contact allergen
C. Counsel patient on gentle skin care and use of emollients
D. Add antiviral to cover for zoster
E. Treat for scabies
Contact Dermatitis

- **Clinical Features**
  - Severe pruritus
  - Common allergens - poison oak, nickel, hair dye, bandages, topical neomycin, topical diphenhydramine
  - Worse in patients with atopic dermatitis

- **Diagnosis**
  - Look for clues as to shape and location
  - Linear (plant), wrist/beltline/earlobes (nickel), forehead/neck/ears (hair dye)

Treatment

- For localized, small areas - potent topical steroids and systemic anti-histamine
- May need systemic steroids for 3 weeks to prevent rebound reaction (ie poison oak)

Herpes Zoster

- **Hutchinson’s sign**
  - Vesicles on the nasal tip or side suggest nasociliary nerve branch involvement
  - Prompt ophthalmology referral
- **Ramsay Hunt syndrome**
  - Vesicles in distribution of the nervus intermedius (external auditory canal, pinna, soft palate, anterior 2/3 of tongue)
  - Associated with vertigo, ipsilateral hearing loss, tinnitus, facial paresis
Treatment of Herpes Zoster

- Early antiviral treatment (<3-4d)
  - Faster resolution, shorter duration of pain
  - May help prevent and shorten duration of PHN
- Prednisone
  - Improves QOL score in patients with acute pain
  - Does not prevent PHN
  - Don’t use in immunosuppressed patients (increased risk of dissemination)
- Post herpetic neuralgia (PHN)
  - Capsaicin, amitriptyline, gabapentin

Case 11

- 37 yo man with HCV presents with fever, joint pain, and rash
- Skin biopsy: leukocytoclastic vasculitis

Case 11, Question 1

- In this patient, the test most likely to be abnormal is:
  A. Antinuclear antibody
  B. ASO
  C. Cryoglobulins
  D. Urinalysis
  E. Stool guaiac
Case 11, Question 1

- In this patient, the test most likely to be abnormal is:
  A. Antinuclear antibody
  B. ASO
  C. Cryoglobulins
  D. Urinalysis
  E. Stool guaiac

Leukocytoclastic Vasculitis
Differential Diagnosis

- Infection
  - Post strep GN
  - Hepatitis B
  - SBE
- Hypersensitivity
  - Henoch-Schönlein purpura
  - Serum sickness
  - Medication
- Rheumatic disease
  - RA
  - Sjögren’s syndrome
- Mixed cryoglobulinemia (HCV)
- Malignancy associated
  - CLL
  - Multiple myeloma
  - Lymphoma
  - Hodgkin’s disease
- ANCA associated vasculitis
  - Wegener’s granulomatosis
  - Microscopic polyangiitis
  - Churg Strauss
Skin Cancer: Case 12

• 65 year old man s/p renal transplant
• Rapid growth of nodule on leg
• Skin biopsy: Squamous Cell Carcinoma

Squamous Cell Carcinoma

• Red nodule (>1cm) or tumor, often ulcerated or wart-like
• Risk factors:
  – Chronic sun exposure
  – Organ transplant recipients

Skin Cancer in Organ Transplant Recipients

• Skin cancer is the most common malignancy
• 90% are nonmelanoma skin cancer
  – SCC: 70x increased risk
  – BCC: 10-20x increased risk
  – Melanoma: 2x increased risk
• 2% of all deaths in OTR = metastatic SCC
• Very aggressive tumors
• Low threshold for skin biopsy in this patient population

Traywick and O’Rielly. Derm Therapy. 2005; 18: 12-18
Skin Cancer in Organ Transplant Recipients

• To reduce skin cancer risk in transplants:
  – Reduce total immunosuppressive dose to minimum required
  – Absolute sun protection
  – Oral acitretin (25 mg daily) may reduce rate of SCC development

• Refer organ transplant patients to a dermatologist for regular skin checks

Good Luck!