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 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

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
- 5th decade of life
- M (60%), F (40%)
- Risk factors
  - HCV 85%
  - Hemochromatosis
  - Alcoholism
  - Genetic predisposition
- Iron overload -> 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
- Pruritic papules and vesicles on extensor surfaces and buttocks
- No mucosal involvement
- Weight loss, chronic abdominal pain, diarrhea
- Small bowel biopsy: shortening of intestinal villi
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

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
Case 2, Question 2
Dermatitis Herpetiformis
This condition is most closely associated with:
A. Underlying lymphoma
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D. Diabetes mellitus
E. No associated underlying condition

Dermatitis Herpetiformis

- Symmetric, erythematous vesicles and papules in groups
- Intensely pruritic
- Distribution is a clue:
  - Elbows, knees, forearms, buttocks, scalp, neck

Dermatitis Herpetiformis

- 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>Collections of neutrophils at dermal-epidermal junction</td>
<td>DIF(+) granular IgA upper dermis</td>
</tr>
<tr>
<td>IgA tissue transglutaminase</td>
<td>ELISA, blood</td>
<td>Sensitivity 99%, Specificity 95%</td>
<td>Higher false (+), confirm with anti-endomysial Ab</td>
</tr>
<tr>
<td>IgA anti-endomysial Ab</td>
<td>IF, blood</td>
<td>(+) 70-90%</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

Case 3

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

Case 3, Question 1

The most likely diagnosis is:

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

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
- Annular scaly plaques
- Central trunk and back (Christmas tree pattern)
- Mimics the rash of secondary syphilis – CHECK RPR

Case 4

- 48 yr old man
- Facial rash x 3 months
- Increasing fatigue
- Difficulty stocking overhead shelves
Case 4, 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

Case 4, Question 1
The lab test most likely to be abnormal is:
A. ESR
B. Anti-smith antibody
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Dermatomyositis
• Proximal muscle weakness
• Characteristic skin findings
  – Heliotrope: periorbital 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, MRI
  – ANA positive in 60-80%
  – Anti-Jo antibody associated with interstitial lung disease
Case 4, 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

Next case: Case 5
Case 5

- 24 YO M with a sudden onset rash that began on a beach vacation. Which is most likely diagnosis?
  - A) mycosis fungoides
  - B) secondary syphilis
  - C) subacute cutaneous lupus erythematosus
  - D) tinea corporis

Subacute Cutaneous LE (SCLE)

- Women aged 15-40
- 50% meet ARA criteria for SLE, only 10% severe
- Renal or CNS disease rare = good prognosis
- Consider drug-induced form
- 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 6

- 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 6, 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 malignacies
  - Higher mortality
  - Poor quality of life

Psoriasis Aggravators

- Medications
  - Systemic steroids
  - Beta blockers
  - Lithium
  - Hydroxychloroquine
- Strep infections (children, guttate psoriasis)
- Trauma (friction, sunburn)
- HIV
Treatment for Psoriasis

• Topical therapy
  – Steroid ointment (start mid-potency)
  – Calcipotriene ointment
• Phototherapy
  – PUVA: psoralens + UVA
• Systemic therapy
  – Acitretin (oral retinoid)
  – Methotrexate, cyclosporine
  – Biologics
    • etanercept, infliximab, adalimumab (TNF alpha inhibitor)
    • ustekinumab (IL-12, IL-23 blockade)

**Systemic steroids are NOT on this list!**

Case 7

• 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 7, 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
Case 7, 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 7, 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 7, 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

Simple
- Morbilliform drug eruption
- Minimal systemic symptoms

Complex
- Drug hypersensitivity reaction
- Stevens-Johnson (SJS)
- Toxic epidermal necrolysis (TEN)
- Systemic involvement
- Potentially life threatening

Morbilliform (Simple) Drug Eruption
- common
- erythematous macules, papules
- pruritus
- no systemic symptoms
- begins in 2nd week
- treatment:
  - D/C med if severe
  - symptomatic treatment: diphendryamine, topical steroids

Facial edema is key to the diagnosis of drug hypersensitivity reactions
Hypersensitivity Reactions
Clinical features (General)

- Rash
- Fever
- Pharyngitis
- Hepatitis
- Myocarditis
- Hematologic abnormalities
  - eosinophilia
  - atypical lymphocytosis, lymphadenopathy
- Facial edema

Hypersensitivity Reactions

- Morbilliform rash + visceral involvement
- Late onset: 2-6 weeks after medication started
- Classic associations
  - Aromatic anticonvulsants: phenobarbital, carbamazepine, phenytoin, lamotrigine
  - Allopurinol
  - Dapsone
  - NSAIDs
  - Sulfonamides
  - Anti-retrovirals

Treatment:
- Must stop medication (cannot treat through)
- Prednisone (1-2mg/kg/day)

Stevens-Johnson Syndrome (SJS)

>2 mucosal sites

Target lesions

Toxic Epidermal Necrolysis (TEN)

- Widespread bullae
- Skin pain > pruritus
- Erythema -> bullae -> denuded dermis
- Medical emergency: call dermatology immediately
Toxic Epidermal Necrolysis (TEN)

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 8

• 37 yo woman with inflammatory bowel disease
• Rapidly progressive, painful ulceration
• 3 days after bumping her leg on a chair

Case 8, 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
Case 8, Question 1

- The most appropriate treatment for this disorder is
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Pyoderma Gangrenosum

- Non-infectious, inflammatory ulcer
- Diagnosis of exclusion (must r/o infection)
- Rapidly progressive (days) ulcerative process
- Begins as a small pustule
- Undermined violaceous border
- Triggered by trauma (pathergy) (surgical debridement, attempts to graft)

Pyoderma Gangrenosum

- 50% idiopathic
- Associations:
  - IBD (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 topical steroids or tacrolimus
- Systemic therapy:
  - Systemic steroids
  - Cyclosporine, tacrolimus
  - Mycophenolate mofetil
  - Thalidomide
  - TNF-inhibitors (infliximab)
Case 9

- 52 yr old Caucasian male
- Enlarging mole on his back
- Family history – brother recently diagnosed with melanoma, mother died of metastatic melanoma

Case 9, 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

Malignant Melanoma

- Treatment: many new molecular targets
- Confer survival
- B-Raf inhibitors
- PD-1 inhibitors

Skin Cancer: Case 10

- 65 year old man s/p renal transplant
- Rapid growth of nodule on leg

Case 10

- Which is the most likely diagnosis?
  - A) SCC
  - B) BCC
  - C) Melanoma in situ
  - D) Pyoderma gangranosum
Skin Cancer in Organ Transplant Recipients

- Skin cancer: #1 common malignancy
- Incidence increases with survival time post transplant
- Important cause of morbidity, mortality
- 90% are nonmelanoma skin cancer
  - Squamous cell carcinoma (SCC)
    - 65x increased risk
  - Basal cell carcinoma (BCC)
    - 10x increased risk
  - Melanoma
    - 2x increased risk

Traywick and O’Rielly. Derm Therapy. 2005; 18: 12-18

Skin Cancer in Organ Transplant Recipients

- Risk Factors
  - Increased age at transplant (BCC)
  - Exposure to UV radiation
  - Amount of immunosuppression (SCC)
  - Fair skin (BCC)
  - Personal history of AK, NMSC, melanoma
  - Heart > kidney > liver transplants
  - HPV infection

Derm Therapy. 2005; 18: 12-18

To reduce skin cancer risk:
- Reduce immunosuppression to minimum required
- Photoprotection
- Acitretin (25 mg daily) may reduce rate of SCC development
- Refer organ transplant patients to a dermatologist for regular skin checks

Case 11

- 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

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Case 11, 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

Erythema Nodosum: Associations
- Common
  - Idiopathic (35-55%)
  - Infection: STREP
    - URI, Mycoplasma, TB
    - Cocci (+ prognosis)
  - Drugs
    - OCPs, sulfonamides, PCN, halides
  - Sarcoidosis
  - IBD (Crohns > UC)
- Uncommon
  - Yersinia
  - Behcet’s
  - Sweet’s syndrome
  - Pregnancy
  - Malignancy
- Rare
  - Brucellosis
  - Meningococcus/gonococcus
  - E. coli
  - Pertussis
  - Syphilis
  - Leprosy
  - Cat Scratch
  - Chlamydia
  - Blastomycosis
  - Histoplasmosis
  - HIV

What about if lesions are more purpuric, raised?
- 37 yo man with HCV
  - fever, joint pain, and rash
Case 11

- A) leukocytoclastic vasculitis
- B) meningococcemia
- C) erythema multiforme
- D) angiosarcoma

Leukocytoclastic Vasculitis Differential Diagnosis

- Infection
  - Post strep GN
  - Hepatitis B
  - SBE

- Hypersensitivity
  - Henoch-Schönlein purpura
  - Serum sickness
  - Medication

- Rheumatic disease
  - SLE
  - RA
  - Sjögren’s syndrome

- Mixed cryoglobulinemia (HCV)
- Malignancy associated
  - CLL
  - Multiple myeloma
  - Lymphoma
  - Hodgkin’s disease
- ANCA associated vasculitis
  - Wegener’s granulomatosis
  - Microscopic polyangiitis

Good Luck!