Best Cases OHSU

Kelly Griffith-Bauer, MD
Case 1

• Inpatient consult: Possible vasculitis
• HPI: 51 y/o gentleman with h/o COPD, recent pneumonia with 3 month history of ulcers on the R foot, unintentional 30lb weight loss
• Epistaxis and tongue ulcer
Physical Exam

[Images of a hand with swollen fingers and a patient in a hospital bed]
Physical Exam
Histology

• Neutrophilic Vasculitis involving small to medium sized vessels, as seen on step level sections through the entire tissue segment.
Case 1

- Elevated ESR, +c-ANCA, cavitary lung mass
Diagnosis: Wegener’s Granulomatosis

- AKA granulomatosis with polyangiitis (GPA)
- Granulomatous inflammation usually involving the upper and lower respiratory tract and focal necrotizing glomerulitis.
- Small and medium-sized ("mixed") vasculitis
- Predominant ANCA type/antigen – C/PR3 90%, P/MPO 10%
- Findings include palpable purpura, friable gums, Palisaded neutrophilic granulomatous dermatitis (PNGD) (umbilicated papules on extensors, face), subcutaneous nodules, PG-like ulcers, digital necrosis
Case 2:

• Presented to the OHSU dermatology clinic with an ~6 month history of painful “bumps” involving bilateral palms.

• HPI: 47 y/o Native American female with a hx of Primary Biliary Cirrhosis (undergoing liver transplant work up), DM2, HTN.
Physical Exam
Differential for lesions of the palms/soles:

• Calcinosis cutis
• Corns and/or callous
• Verruca Vulgaris (common and plantar warts)
• Xanthoma Striatum Palmare/Plane Xanthomas
• Arsenic keratoses
• Gouty tophi
• Acrokeratosis paraneoplastic of Bazex
• Acquired keratodermas (ex, Aquatic syringeal palmar keratoderma)
Histology

- Nodular and interstitial granulomatous dermatitis with foam cells, consonant with xanthoma.
Histology

40x

CD68
Diagnosis: Xanthoma Striatum Palmare

- Xanthoma striatum palmare = plane xanthomas involving the palmar creases.
- Causes of xanthoma striatum palmare include:
  - Familial dysbetalipoproteinemia (type III).
  - Primary biliary cirrhosis and other cholestatic liver diseases (Incr lipoprotein X).
  - Normolipemic patients with underlying monoclonal gammopathy (plasma cell dyscrasia) and lymphoproliferative disorders (B cell lymphoma and Castleman’s disease).
    - Secondary to macrophages phagocytizing IgG-LDL complexes.
Primary Biliary Cirrhosis & Xanthomas

• **Primary biliary cirrhosis (PBC)** is an **autoimmune**, chronic, cholestatic liver disease secondary to intrahepatic bile duct destruction.

• **Hypercholesterolemia** is found the majority of patients with advanced PBC due to altered enterohepatic circulation of bile acids.

• **Xanthomas** in primary biliary cirrhosis are thought to be secondary to an accumulation of deposition of lipoprotein X (LpX).
Xanthoma work up

• Fasting lipid panel (LDL, HDL, Total Cholesterol, and Triglycerides).

• If normolipemic consider underlying hematologic malignancy or lymphoproliferative disorder.

• Carotid artery US and/or CT of the abdomen with contrast.

• Work up for underlying familial hyperlipidemias (Apolipoprotein B) and secondary causes of hyperlipidemia.
Work Up

• #1. Order fasting lipid panel.

• #2. Call in back up and consult cardiology.

• #3. Imaging studies.

• #4 Rule out underlying familial hyperlipidemia.
### Results

<table>
<thead>
<tr>
<th>Test</th>
<th>Range</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>CHOLESTEROL (LAB)</td>
<td>&lt;200 mg/dL</td>
<td>1127 (H)</td>
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<tr>
<td>TRIGLYCERIDES</td>
<td>&lt;150 mg/dL</td>
<td>184 (H)</td>
</tr>
<tr>
<td>HDL CHOLESTEROL</td>
<td>&gt;40 mg/dL</td>
<td>12 (L)</td>
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<tr>
<td>HDL CMNT</td>
<td></td>
<td>No Hemo</td>
</tr>
<tr>
<td>LDL CHOLESTEROL, CALCULATED</td>
<td>&lt;100 mg/dL</td>
<td>1078 (H)</td>
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<tr>
<td>VLDL CHOLESTEROL, CALCULATED</td>
<td>&lt;31 mg/dL</td>
<td>37 (H)</td>
</tr>
<tr>
<td>NON-HDL CHOLESTEROL</td>
<td>&lt;130 mg/dL</td>
<td>1115 (H)</td>
</tr>
</tbody>
</table>

**Resulting Agency**

OHSU CORE LAB
Results

Conclusions: An abnormal cerebrovascular study demonstrating moderate plaque at the right and left carotid bifurcations with <50% stenosis of the right and left internal and external carotid arteries. The vertebral artery examination is normal bilaterally.
Back to our patient: Work Up

• #1. Order fasting lipid panel.
• #2. Call in back up and consult cardiology.
• #3. Imaging studies.
• #4 Rule out underlying familial hyperlipidemia.

Final Diagnosis: Severe hypercholesterolemia primarily secondary to primary biliary cirrhosis in conjunction with underlying heterozygous familial hypercholesterolemia (Type IIa).
Case 3

• ED consult: 34 y/o healthy woman presents to OHSU ED with a severe skin eruption. We were asked to rule out SJS/TEN.

• HPI: 10 days ago was bitten by her cat. After bite, received IM Keflex x 1, then started a 7 day course of Augmentin, finished 2 days prior to presentation. Noticed blisters in shower, so came to ED
Histology

• Epidermis was lost
• Dermis shows sparse lymphocytes, rare neutrophils
• Focal adnexal necrosis was seen
Histology
A widespread eruption with sloughing

Chen (Amy) Chen, BA, Anar Mikailev, MD, and Daniela Kreshinsky, MD, MPH
Boston, Massachusetts

Chen et al, 2016
Diagnosis

• SDRIFE – Symmetric Drug Related Intertriginous and Flexural Exanthem (AKA Baboon Syndrome)

• 5 criteria
  • Exposure to new systemic med 1-2 weeks prior (beta-lactam antibiotics in over 50% of cases; amoxicillin is the most common)
  • Sharply demarcated “V-shaped rash involving the gluteal crease
  • Involves another flexual area such as axilla
  • Symmetry (many cases unilateral however)
  • Absence of systemic symptoms
Case 4

• Inpatient consult: 64 y/o gentleman with smouldering myelodysplastic syndrome, but otherwise well, admitted for 1 week history of rash on dorsal hands. Please biopsy and culture to confirm diagnosis of anthrax.
History

• Hunts and skins large animals all over the world.
• 1 week prior to consult was in New Mexico. He skinned an Audad sheep with his bare hands.
• Wound cultures negative x 2.
• Has not responded to antibiotics
Physical Exam
Biopsy

• Moderate neutrophilic infiltrate – nonspecific between infection and neutrophilic dermatosis
Our diagnosis

• Neutrophilic dermatosis of the dorsal hands
  • Shares features of Sweet’s syndrome – bullous, hemorrhagic, seen in patients with hematologic malignancies
  • Shares features of pyoderma gangrenosum – pathergy; worsens with debridement
  • Tends to present as juicy plaques symmetrically involving the distal dorsal hands and skin overlying the MCPs
  • Treatment typically with prednisone or dapsone
  • Should heal without scarring
Discharge diagnosis

- Medicine team discharged the patient with a diagnosis of cutaneous anthrax, based on history of exposure to a sheep
- Wound cultures negative x 3
- Discharged with 3 week course of doxycycline
- Told to complete entire course “even if your primary doctor tells you not to”
- Considering sending 16s ribosomal RNA studies to Seattle to confirm the diagnosis
Follow up

• Medicine team sends an email that he is doing great, and his rash is essentially cleared up on the doxycycline
Follow up

• Medicine team sends an email that he is doing great, and his rash is essentially cleared up on the doxycycline
1 week later

• Ribosomal RNA study is negative
• Pt is getting new lesions
Case 5

• Inpatient consult for purpuric rash in the ICU... vasculitis?
Case 5:

- Inpatient ICU consult: Rule out vasculitis
- 56 y/o obese but otherwise healthy woman. Presented to outside hospital for malaise, diarrhea and tested positive for influenza B
- Developed purpuric skin lesions
Biopsy

• Sparse superficial perivascular dermatitis with rare microthrombi
Case 5:

• Developed presumed viral myositis with CK > 13,000, rhabdomyolyysis, acute renal failure requiring hemodialysis

• Developed 4-limb compartment syndrome, requiring 4 fasciotomies
Diagnosis

- **Purpura Fulminans**
  - Devastating complication of uncontrolled systemic inflammation
  - Dermal and systemic thrombosis of the microcirculation
  - Often associated with infectious illness (streptococcal, meningococcal, viral, etc.)
Pathophysiology of skin lesions

• In purpura fulminans, the mechanism involves infection and vasodilation leading to a transient reduction in Protein C activity
• Protein C concentrate available in Europe, but not in the U.S.
• Thrombotic processes are best investigated through a series of lab tests
  • Protein C, Protein S, Factor V Leiden, antiphospholipid antibodies, Prothrombin gene mutation
Why compartment syndrome?

• Have been very few cases reported in adult and pediatric literature
• Generally related to viral myositis and influenza A
Case 6

• Inpatient consult: Purpura on fingers and toes...vasculitis?
History

• Inpatient consult: 37 y/o woman with complex medical history
• Developed purpuric acral rash days ago while in hospital
• History notable for IVDU, poor compliance, untreated hereditary angioedema, systemic sclerosis, mixed connective tissue syndrome
• Presented for abdominal pain “different than usual”, acute renal injury, severe thrombocytopenia
• Rheumatology very concerned about scleroderma renal crisis, although improving with fluids
• Hematology considering TTP (thrombotic thrombocytopenic purpura)
Biopsy

• Necrotic epidermis with underlying small blood vessel thrombosis
Further workup

• Biopsy led to hypercoagulable labs – revealed abnormal lupus inhibitors
• CT scan performed for worsening abdominal pain showed renal infarcts, splenic infarcts, bowel ischemia
• None of which were there on prior CT abdomen at outside hospital
Diagnosis

• Catastrophic antiphospholipid antibody syndrome (CAPS)
• 4 criteria
  • Involves 3 or more organs
  • Confirmation of small vessel occlusion in 1 or more organ (skin)
  • Develops in less than 1 week
  • Lab confirmation of antiphospholipid antibody (APL)
• The major organs involved renal, lung, brain, heart, and skin
• Mortality approaches 50%
Treatment

• IV methylprednisone x 3 days transitioning to high dose prednisone
• IV heparin
• Plasma exchange therapy (PLEX) AKA plasmapheresis x 5 days
• IVIG x 5 days
Case 7

• Clinic Visit: 45 y/o Female 10+ year history of slowly enlarging facial and upper arm lesions
Morphological Differential

**Granulomatous Diseases**
- Rosacea fulminans
- Granulomatous mycosis fungoides
- Sarcoidosis

**Infectious Diseases**
- Leprosy
  - Lepromatous
  - Intermediate
  - Tuberculoid
- Cutaneous tuberculosis
  - Lupus vulgaris
- Other atypical mycobacterial infections
Case 7

Positive ROS: SOB, cough, hemoptysis, nasal drainage, hip pain, palpitations, visual disturbances

PMH: Lung disease

SH: Lifelong non-smoker, No travel outside of US

FH: No autoimmune diseases
Previous Work Up

MCV: 65.0
ESR: 28
ACE: 192
Ca: Normal
1,25 Vit D: Normal
QuantiFERON: Negative
Autoimmune Work Up: Negative
Previous Work Up

• Evaluated by Neuro, ENT, Cardiology, Ophthalmology
  • Normal brain MRI
  • Obliterated nasal septum
  • Normal Echo
  • Normal eye exam

• PFTs
  • Consistent with a restrictive process

<table>
<thead>
<tr>
<th>FEV1</th>
<th>FVC</th>
<th>FEV1/FVC</th>
<th>Lung Volume</th>
<th>DLCO</th>
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<tbody>
<tr>
<td>42%</td>
<td>45%</td>
<td>0.90</td>
<td>68%</td>
<td>39%</td>
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</tbody>
</table>
Special Stains

PAS

FITE
Additional studies

Tissue culture
• AFB smear negative
• Negative for bacteria, mycobacteria and fungal organisms

Non-Tuberculosis Mycobacterial PCR testing negative
Diagnosis:

Sarcoidosis
Sarcoidosis

• A chronic multisystem inflammatory disorder

• Epidemiology
  • Scandinavian countries, African Americans
  • W > M
  • 3rd – 4th decade of life

• Pathogenesis
  • Genetically susceptible host + unknown trigger
  • Type 1 helper T cell mediated
Systemic Manifestations

Pulmonary (>90% of patients)
Cutaneous
Ocular

Many more...
• Upper respiratory tract
• Cardiovascular
• Liver, Spleen
• Musculoskeletal
• Electrolytes
• Renal
• Neuro
• Endo and Reproductive
Cutaneous Manifestations

• A great mimicker

• Specific and non-specific skin findings
  • Specific = + non-caseating granulomas
  • Non-specific = no granulomas
Specific Manifestations

Common
- Maculopapular
- Plaque
- **Lupus pernio**
- Subcutaneous
- Scar

Uncommon
- Psoriasiform
- Annular
- Lichenoid
- Photodistributed
- Verrucous
- Ichthyosiform
- Lymphedematous
- Tumoral
- Atrophic
- Ulcerative
- Hypopigmented
- Erythrodermic

- Angiolupoid
- Sarcoidal alopecia
- Polymorphous
- Nail
- Mucosal
Lupus Pernio

Associations

• Chronic lung involvement
• Upper respiratory tract involvement
• Cystic bone lesions
• Chronic, progressive disease

Often treatment resistant
Treatment

• Spontaneous remission

• Therapy is guided by severity

• Always be patient!
THANK YOU!!
References