Outline

- Approach to the itchy patient
- How to really treat eczema
- Psoriasis as a systemic disease
- Acne in the adult
- Onychomycosis
- Grover's disease
- The red leg

Pruritus = the sensation of itch

- Itch can be divided into four categories:
  1. Pruritoeptive
     - Generated within the skin
     - Itchy rashes: scabies, eczema, bullous pemphigoid
  2. Neurogenic
     - Due to a systemic disease or circulating pruritogens
     - Itch "without a rash"
  3. Neuropathic
     - Due to anatomical lesion in the peripheral or central nervous system
     - Notalgia paresthetica, brachioradial pruritus
  4. Psychogenic itch

Approach to the itchy patient

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Pruritus- History

- Suggest cutaneous cause of itch:
  - Acute onset (days)
  - Related exposure or recent travel
  - Household members affected
  - Localized itch
- Itch is almost always worse at night
  - does not help identify cause of pruritus
- Aquagenic pruritus suggests polycythemia vera
- Dry skin itches

Pruritus- Physical Exam

Are there primary lesions present?

- yes
  - Pruritoceptive
- no
  - Neurogenic, Neuropathic, or Psychogenic

Causes of Neurogenic Pruritus (Pruritus Without Rash)

- 40% will have an underlying cause:
  - Dry Skin
  - Liver diseases, especially cholestatic
  - Renal Failure
  - Iron Deficiency
  - Thyroid Disease
  - Low or High Calcium
  - HIV
  - Medications
  - Cancer, especially lymphoma (Hodgkin’s)

Workup of “Pruritus Without Rash”

- CBC with differential
- Serum iron level, ferritin, total iron binding capacity
- Thyroid stimulating hormone and free T4
- Renal function (blood urea nitrogen and creatinine)
- Calcium
- Liver function tests
  - total and direct bilirubin, AST, ALT, alkaline phosphatase, GGT, fasting total plasma bile acids
- HIV test
- Chest X-ray
- Age-appropriate malignancy screening, with more advanced testing as indicated by symptoms
Neuropathic Pruritus

- Notalgia paresthetica
- Brachioradial Pruritus
  - Localized and persistent area of pruritus, without associated primary skin lesions, usually on the back or forearms
- Workup = MRI!!
  - Cervical and/or thoracic spine disease in ~100% of patients with brachioradial pruritus and 60% of patients with notalgia paresthetica
- Treatment - capsaicin cream TID, gabapentin
  - Surgical intervention when appropriate

Notalgia Paresthetica

Treatment of Pruritus

- Treat the underlying cause if there is one
- Dry skin care
  - Short, lukewarm showers with Dove or soap-free cleanser
  - Moisturize with a cream or ointment BID
    - Cetaphil, eucerin, vanicream, vaseline, aquaphor
- Sarna lotion (menthol/camphor)
- Topical corticosteroids to inflamed areas
  - Face - low potency (desonide ointment)
  - Body - mid to high potency (triamcinolone acetonide 0.1% oint)

Antihistamines for Pruritus

- Work best for histamine-induced pruritus, but may also be effective for other types of pruritus
- First generation H1 antihistamines
  - hydroxyzine 25 mg QHS, titrate up to QID if tolerated
- Second generation H1 antihistamines
  - longer duration of action, less somnolence
  - cetirizine, loratidine, desloratidine, fexofenadine
Systemic Treatments for Pruritus

- **Doxepin** - 10mg QHS, titrate up to 50 mg QHS
  - Tricyclic antidepressant with potent H1 and H2 antihistamine properties
  - Good for pruritus associated with anxiety or depression
  - Anticholinergic side effects
- **Paroxetine (SSRI)** - 25- 50 mg QD
- **Mirtazapine** - 15-30 mg QHS
  - H1 antihistamine properties
  - Good for cholestatic pruritus, pruritus of renal failure
- **Gabapentin** - 300 mg QHS, increase as tolerated
  - Best for neuropathic pruritus, pruritus of renal failure

Eczemas

Eczema (=dermatitis)

- Group of disorders characterized by:
  1. Itching
  2. Intraepidermal vesicles (= spongiosis)
     - Macroscopic (you can see)
     - Microscopic (seen histologically on biopsy)
  3. Perturbations in the skin’s water barrier
  4. Response to steroids

Eczemas

- Atopic Dermatitis
- Hand and Foot Eczemas
- Asteatotic Dermatitis (Xerotic Eczema)
- Nummular Dermatitis
- Contact Dermatitis (allergic or irritant)
- Stasis Dermatitis
- Lichen Simplex Chronicus
Eczema Good Skin Care Regimen
• Soap to armpits, groin, scalp only (no soap on the rash)
• Short cool showers or tub soak for 15-20 minutes
• Apply medications and moisturizer *within 3 minutes* of bathing or swimming

Eczema Topical Therapy
• Choose agent by body site, age, type of lesion (weeping or not), surface area
• For Face:
  – Hydrocortisone 2.5% Ointment BID
  – If fails, aclometasone (Aclovate), desonide ointment
• For Body:
  – Triamcinolone acetonide 0.1% ointment BID
  – If fails, fluocinonide ointment
• For weepy sites:
  – soak 15 min BID with dilute Burow’s solution (aluminum acetate) (1:20) for 3 days

Eczema Oral Antipruritics
• Suppress itching with nightly oral sedating antihistamine
• If it is not sedating it doesn’t help
• Diphenhydramine
• Hydroxyzine 25-50mg
• Doxepin 10-25mg

Eczema Severe Cases
• Refer to dermatologist
• Do not give systemic steroids
• We might use phototherapy, hospitalization, immunotherapy

• Beware of making the diagnosis of atopic dermatitis in an adult- this can be cutaneous T cell lymphoma!
Psoriasis pearls

Psoriasis Aggravators

- Medications
  - Systemic steroids (withdrawal)
  - Beta blockers
  - Lithium
  - Hydroxychloroquine
- Infections
  - Strep- children and young adults
  - Candida (balanitis)
- Trauma
- Sunburn
- Severe life stress
- HIV
  - 6% of AIDS patients develop psoriasis
- Alcohol for some
- Smoking for some

Psoriasis and Comorbidities

- Psoriasis is linked with:
  - Arthritis
  - Cardiovascular disease (including myocardial infarction)
  - Hypertension
  - Obesity
  - Diabetes
  - Metabolic syndrome
  - Malignancies
    - Lymphomas, SCCs, 7 solid organ malignancies
    - Higher mortality
- Psoriasis patients more likely to
  - Be depressed
  - Drink alcohol
  - Smoke

Risk of Myocardial Infarction in Patients With Psoriasis

- Psoriasis - independent risk factor for MI
- Risk for MI:
  - Greatest in young patients with severe psoriasis
  - Attenuated with age
  - Remains increased after controlling for other CV risk factors
  - Magnitude of association is equivalent to other established CV risk factors
Psoriasis and Comorbidities

- In patients with psoriasis, important to
  1. Recognize these associations
  2. Screen for and treat the comorbidities according to American Heart Association, American Cancer Society, and other accepted guidelines

Pustular Psoriasis

- Pustular and erythrodermic variants of psoriasis can be life-threatening
- Most common in patients with psoriasis who are given systemic steroids
- High cardiac output state with risk of high output failure
- Electrolyte imbalance (hypo Ca²⁺), respiratory distress, temperature dysregulation
- Treat with hospitalization and cyclosporine or acitretin or TNF alpha blocker (infliximab)

Approach to the Adult Acne Patient

Acne Pathogenesis, Clinical Features, Therapeutics

<table>
<thead>
<tr>
<th>Pathogenesis</th>
<th>Clinical features</th>
<th>Therapeutics</th>
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</thead>
<tbody>
<tr>
<td>Excess sebum</td>
<td>Oily skin</td>
<td>Retinoids, spironolactone</td>
</tr>
<tr>
<td>Abnormal follicular keratinization</td>
<td>Non-inflammatory open and closed comedones (&quot;blackheads and whiteheads&quot;)</td>
<td>Salicylic acid, retinoids</td>
</tr>
<tr>
<td>Propionibacterium acnes</td>
<td>Inflammatory papules and pustules</td>
<td>Benzoyl peroxide</td>
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<tr>
<td>Inflammation</td>
<td>Cystic nodules</td>
<td>Antibiotics (topical and oral)</td>
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<tr>
<td></td>
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<td>Spironolactone</td>
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<td>OCPs</td>
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<td>Isotretinoin</td>
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Acne Treatment

• Mild inflammatory acne
  – benzoyl peroxide + topical antibiotic (clindamycin, erythromycin)
• Moderate inflammatory acne
  – oral antibiotic (tetracyclines) (with topicals)
• Comedonal acne
  – topical retinoid (tretinoin, adapalene, tazarotene)
• Acne with hyperpigmentation
  – azelaic acid
• Acne/rosacea overlap /seborrheic dermatitis-
  – sulfur based preparations
• Hormonal component
  – oral contraceptive, spironolactone
• Cystic, scarring- isotretinoin
  – Teratogenic, hypertriglyceridemia, transaminitis, cheilitis, xerosis, alopecia (telogen effluvium)

Topical Retinoids

• Side effects
  – Irritating- redness, flaking/dryness
  – May flare acne early in course
  – Photosensitizing
  – Tazarotene is category X in pregnancy !!!!

Acne in Adult Women

• Often related to excess androgen or excess androgen effect on hair follicles
• Other features of PCOD are often not present—irregular menses, etc.
• Serum testosterone can be normal
• Spironolactone 50 mg-100mg daily with or without OCPs

Acne Pearls

• Retinoids are the most comedolytic
• Topical retinoids can be tolerated by most
  • Start with a low dose: tretinoin 0.025% cream
  • Wait 20-30 minutes after washing face to apply
  • Use 1-2 pea-sized amount to cover the whole face
  • Start BIW or TIW
• Tazarotene is category X in pregnancy
• Back acne often requires systemic therapy
• Acne in adult women- use spironolactone
  – No need to check K+
### Perioral Dermatitis

- **Women aged 20-45**
- Papules and small pustules around the mouth, narrow spared zone around the lips.
- Asymptomatic, burning, itching
- **Causes**
  - Steroids (topical, nasal inhalers)
  - Fluorinated toothpaste
  - Skin care creams with petrolatum or paraffin base or isopropyl myristate (vehicle)

### Perioral Dermatitis: Treatment

- Stop topical products
- **Topical Antibiotics**
  - clindamycin
- **Oral tetracyclines**
- Warn patients of rebound if coming off topical steroids
- Avoid triggers

### Onychomycosis

- Infection of the nail plate by fungus
- Vast majority are due to dermatophytes, especially *Trichophyton rubrum*
- Very common
- Increases with age
- Half of nail dystrophies are onychomycosis
  - This means 50% of nail dystrophies are NOT fungal

### Onychomycosis Diagnosis

- **KOH** is the best test, as it is cheap, accurate if positive, and rapid; Positive 59%
- If KOH is negative, perform a fungal culture
  - Frequent contaminant overgrowth
  - 53% positive
- **Nail clipping**
  - Send to pathology lab to be sectioned and stained with special stains for fungus
  - Accurate (54% positive), rapid (<7d), written report
- **Downside:** Cost (>$100)
### Onychomycosis: Interpreting Nail Cultures

- **Any growth of** *T. rubrum* **is significant**
- **Contaminants**
  - Not considered relevant unless grown twice from independent samples AND no dermatophyte is cultured
  - Relevant contaminants:
    - *C. albicans*
    - *Scopulariopsis brevicaulis*
    - *Fusarium*
    - *Scytalidium* (Carribean, Japan, Europe)
  - Especially in immunosuppressed patients

### Onychomycosis: Local Treatment

- **Laser** - insufficient data that it works
- **Topical Therapy**:
  - Ciclopirox (Penlac) 8% Lacquer:
    - Cure rates 30% to 35% for mild to moderate onychomycosis (20% to 65% involvement)
    - Clinical response about 65%
  - Efinaconazole (Jublia) 10% *
    - Daily for 48 weeks
    - Complete or almost complete cure (completely clear nail) - 26%
    - Mycologic cure (neg KOH and neg fungal cx) - 55%
  - Tavaborole (Kerydin) 5% *
    - Daily for 48 weeks
    - Complete or almost complete cure (completely clear nail) - 15-17%
    - Mycologic cure (neg KOH and neg fungal cx) - 31-36%

*Data from pharma website

### Onychomycosis: Systemic Treatment

- **Itraconazole**: 200 mg BID with acid drink and food for one week each month for 3 months
- **Terbinafine**: 250 mg QD for 12 weeks
  - Check LFTs at 6 weeks
  - Efficacy: 35% complete cures; 60% clinical cures

### Onychomycosis: Assessing Treatment Efficacy

- **Nail growth**
  - At 2 to 3 months nail begins to grow out
  - Continues for 12 months
- **Repeat KOH/culture at 4-6 months**
  - If culture still positive, treatment will likely fail
  - KOH may still be positive (dead dermatophytes)
Grover’s Disease (transient acantholytic dermatosis)
- Sudden eruption of papules, papulovesicles; often crusted
- Mid chest and back
- Itchy
- Middle aged to older men
- Etiology unknown—heat, sweating
- Risk factors: hospitalized, febrile, sun damage
- Transient
- Treatment: topical steroids (triamcinolone 0.1% cream); get patient to move around

The red leg:
Cellulitis and its (common) mimics
- Cellulitis/erysipelas
- Stasis dermatitis
- Contact dermatitis

Cellulitis
- Infection of the dermis
- Gp A beta hemolytic strep and Staph aureus
- Rapidly spreading
- Erythematous, tender plaque, not fluctuant
- Patient often toxic
- WBC, LAD, streaking
- Rarely bilateral
- Treat tinea pedis
### Stasis Dermatitis
- Often bilateral, L>R
- Itchy and/or painful
- Red, hot, swollen leg
- No fever, elevated WBC, LAD, streaking
- Look for: varicosities, edema, venous ulceration, hemosiderin deposition
- Superimposed contact dermatitis common

### Contact Dermatitis
- Itch (no pain)
- Patient is non-toxic
- Erythema and edema can be severe
- Look for sharp cutoff
- Treat with topical steroids

### Contact Dermatitis
- Common causes
  - Applied antibiotics (Neomycin, Bacitracin)
  - Topical anesthetics (benzocaine)
  - Other (Vitamin E, topical diphenhydramine)
- Avoid topical antibiotics to leg ulcers
  - Metronidazole OK (prevents odor)

### The Red Leg: Key features of the physical exam:

<table>
<thead>
<tr>
<th>Cellulitis</th>
<th>Fever</th>
<th>Pain</th>
<th>Warmth</th>
<th>Bilateral</th>
<th>Streaking</th>
<th>Lymphadenopathy</th>
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<td>Yes</td>
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<td>Almost</td>
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