Common Dermatologic Disorders: Tips for Diagnosis and Management
Part 1

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• I have no conflicts of interest to disclose

Outline
• Part 1
  • Approach to the itchy patient
  • Eczemas and approach to treatment
  • Fungal infections of the skin
  • Onychomycosis
  • Grover's disease
• Part 2
  • Acne, Rosacea, Perioral dermatitis
  • Drug eruptions
  • The red leg
  • Psoriasis as a systemic disease

Approach to the itchy patient
Case 1

- 57M with 3 months of itch rash
- started on his lower extremities
- No response to antifungal creams and OTC hydrocortisone cream
- He showers 2 x/day with hot water, uses an antibacterial soap, and does not moisturize

Question 1: The Best Diagnosis is
1. Asteatotic dermatitis
2. Pruritus of renal failure
3. Nummular dermatitis
4. Tinea corporis
5. Neuropathic pruritus

Case 2

68M with ESRD complains of generalized itch

Question 2: The Best Diagnosis is
1. Asteatotic dermatitis
2. Pruritus of renal failure
3. Nummular dermatitis
4. Tinea corporis
5. Neuropathic pruritus
Pruritus = the sensation of itch

Itch can be divided into four categories:

1. **Pruritoceptive**
   - 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**

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

Case 1

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Nummular dermatitis
Case 2
68M with ESRD complains of generalized itch

Linear erosions; “Butterfly” distribution of spared skin
Pruritus “without rash”

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 and Brachioradial Pruritus
• Localized and persistent area of pruritus, without associated primary skin lesions, usually on the back or forearms
• Workup= MRI
  • Cervical spine disease in ~100% brachioradial pruritus
  • Thoracic spine disease in 60% notalgia paresthetica
• Treatment- capsaicin cream TID, neurontin
  • 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/phenol)
  • Topical corticosteroids to inflamed areas
    • Face- low potency (desonide ointment)
    • Body- mid to high potency (triamcinolone acetonide 0.1% oint)

Antihistamines for Pruritus

روم  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, levocetirizine, 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

- Atopic Dermatitis
- Hand and Foot Eczemas
- Stasis Dermatitis
- Asteatotic Dermatitis (Xerotic Eczema)
- Nummular Dermatitis
- Lichen Simplex Chronicus
- Contact Dermatitis (allergic or irritant)

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

Hand Eczema

- Many atopic adults have only hand dermatitis
- Tinea tends to involve only 1 hand, so if two feet and one hand are involved, think tinea
- Treatment:
  - Protect, Moisturize, Medicate
- Occupational history
  - Consider contact dermatitis and patch testing

Asteatotic Dermatitis (Xerotic Eczema)

- Caused by loss of the epidermal water barrier
- More common in the elderly
- Worsened by hot showers, deodorant soaps
- Worse in the winter (dry, heated air)
- Worse after ski trips (altitude, cold)
Asteatotic Dermatitis
(Xerotic Eczema)

- Lower legs, flanks, arms
- Spares armpits, groin, face
- First stage:
  - flaking of the skin, pruritic
- Second stage:
  - cracking of the skin looking like the bed of a dry lake
  - itchy and stings
- Third stage: Weepy dermatitis, ITCHY

Diagnostic clue:
- Itching is relieved by prolonged submersion in bath (20-30 minutes)
- Then itching starts again 5-30 minutes after getting out of the water

Nummular Dermatitis

- Affects middle aged men most, but also other age groups and women
- Some patients have atopic dermatitis
- Some patients start with xerotic eczema
- Alcoholics predisposed
Nummular Dermatitis

- Starts as a single lesion of the lower leg (90%) or arm (<10%)
- Lesion present for months
- A few new lesions on that leg
- Begins to generalize
- Very, very pruritic
- May become secondarily infected

Nummular Dermatitis

- Disease lasts 18 months, tending to relapse in cleared lesions with minimal irritation or dryness
- Need to be very aggressive in good skin care regimen for 1-2 years after cleared

Lichenification

Describes lesions that have been rubbed repeatedly
- Characteristic of any pruritic and chronic dermatosis

Skin is thickened, with slight scale, excoriations, and ACCENTUATED skin lines

Treat with superpotent topical steroids (clobetastol) under occlusion

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
### Moisturizers

- Contain oil to seal the surface of the skin and replace the damaged water barrier
- Petrolatum (Vaseline) is the premier and “gold standard” moisturizer
- Other agents add water to this to make it more palatable, OR use glycerin or mineral oil instead or in addition
  - If the first ingredient is “water”, the moisturizer is less effective than if the first ingredient is an oil (hydrophobic)

### Principles of Dermatologic Therapy

- The efficacy of any topical medication is related to:
  1. The concentration of the medication
  2. The vehicle
  3. The active ingredient (inherent strength)
  4. Anatomic location

### Vehicles

**Ointment** (like Vaseline):
- Greasy, moisturizing, messy, most effective.

**Creams** (vanish when rubbed in):
- Less greasy, can sting, more likely to cause allergy (preservatives/fragrances).

**Lotions** (liquid):
- Cooling, liquids that pour.

**Solutions** (liquids that are greasy or alcoholic):
- Can sting, good for hairy areas

**Gels** (semi solid alcohol-based):
- Can sting, good for hairy areas or wet lesions

**Foams** (cosmetically elegant):
- For hairy areas

**Sprays**: Aerosols (rarely used)
Topical Corticosteroids

- Super-High Potency: Clobetasol
- High Potency: Fluocinonide
- Medium Potency: Triamcinolone (TAC)
- Mid-Low: Aclometasone, Desonide
- Lowest Potency: Hydrocortisone

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 Burrow’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
- Avoid making the diagnosis of adult onset atopic dermatitis in a patient without a history of atopy (could be cutaneous T cell lymphoma)
- We might use phototherapy, hospitalization, immunotherapy
Superficial Fungal Infections

• Dermatophytoses:
  – Infections by fungi that parasitize keratin stratum corneum, nail, or hair

• Candidiasis:
  – Yeast infection of mucosal surfaces and moist skin

• Tinea Versicolor:
  – Yeast infection of skin surface

Diagnosis

• Clinical examination
  – Inaccurate, especially for onychomycosis (nail fungal infection)

• KOH

• Culture

• Biopsy

KOH

• Scrape scale, put on slide, add KOH, and examine at 10x-40x

• Rapid, accurate

• Requires training and repetition
Keys to doing a Good KOH

- Collect from the right area
- Get lots of material
- Adequately digest the keratin (heat)
- Set microscope correctly (condenser down and iris closed partially)
- Systematically scan entire slide

*Spaghetti and Meatball* KOH smear of Tinea Versicolor

Superficial Fungal Infections Diagnosis

- Fungal Culture:
  - Takes up to 4 weeks for results; contaminants
- Histology:
  - Skin biopsy or nail for histology
Dermatophytoses (Tineas)

- Tinea pedis
- Tinea manuum
- Tinea cruris
- Tinea corporis
- Tinea capitis
- Tinea incognito

Topical Antifungals

- Polyenes: nystatin
- Imidazoles (fungistatic; BID)
  - Miconazole (OTC), Clotrimazole (OTC), Sulconazole, Oxiconazole, Ketoconazole
- Ciclopirox (QD)
  - Loprox
- Allylamines (fungicidal; QD)
  - Terbinafine (OTC), Naftifine, Butenafine

Lotrisone

- Combination of betamethasone plus clotrimazole
  - Weak antifungal + superpotent steroid
- Inadequate to kill fungus and may cause complications (striae, fungal folliculitis)
- Dermatologists rarely use it
- Rarely indicated

Tinea versicolor

- Etiology: Malassezia furfur (Pityrosporum ovale)
- Appearance: well-defined scaling patches with hypo- or hyperpigmentation
- Diagnosis: clinical morphology, KOH exam
Tinea Versicolor Treatment

- Selenium sulfide shampoo and lotion
- Ketoconazole shampoo
- Topical antifungal agents (ketoconazole)
- Oral ketoconazole
  - 400 mg, take with coca-cola, wait 30 min, exercise, let sweat sit on skin
  - Repeat in one week
- Prophylactic treatment may prevent recurrence

Superficial Cutaneous Candidiasis

- Etiology: Candida albicans
- Appearance: erythematous plaques, often with "satellite pustules"
- Occurs most commonly in moist, macerated folds of skin

Candidiasis Treatment

- Oral thrush
  - Nystatin suspension
  - Clotrimazole troches
- Balanitis
  - Topical clotrimazole cream
  - Oral fluconazole (single dose)
- Candida intertrigo
  - Topical imidazole cream
- Paronychia
  - Avoid water
  - Topical imidazoles
  - Topical corticosteroid ointment
  - Systemic therapy in resistant cases
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 Treatment

- Topical Therapy: Limited efficacy
  - Ciclopirox (Penlac) 8% Lacquer:
    - Cure rates 30% to 35% for mild to moderate onychomycosis
      (20% to 65% involvement)
    - Clinical response about 65%
  - 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 Toenail Treatment

- 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)

Grovers 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
Common Dermatologic Disorders: Tips for Diagnosis and Management

- Approach to the itchy patient
- Eczemas and approach to treatment
- Fungal infections of the skin
- Onychomycosis
- Grovers disease

Common Dermatologic Disorders: Tips for Diagnosis and Management

- Select potency of a topical steroid and its vehicle based on location of treatment site
- Don’t use lotrisone
- Onychomycosis requires oral treatment and 12 months to see final results