Dermatology in Primary Care: Recognition and treatment of common disorders of the skin

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Disclosures

I have no conflicts of interest to disclose.

I may discuss off-label use of treatments for cutaneous disease.

A preview

• Fictional patient
• Series of dermatology visits
• Numerous concerns
  • Common skin infections
  • Acne
  • Drug eruptions
  • Skin cancer

Classic skin infections
Chronic atopic dermatitis with acute flare

Best first test to be performed in clinic:
1. Bacterial culture
2. Fungal culture
3. Viral direct fluorescence antibody (DFA)
4. Skin biopsy
5. KOH test

Eczema herpeticum

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Eczema herpeticum

Itchy rash, not improving with topical steroids

Rash not responding to topical steroids

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Tinea corporis

Trichophyton rubrum
Trichophyton mentagrophytes

Microsporum canis (inflammatory)
Microsporum audouini

Diagnosis:
- KOH
- Morphology on mold cultures (low yield)
- Lactophenol plates (higher yield)
- Skin biopsy (PAS-D)
**Most common cause of “football” shaped vesiculopustules:**

1. Herpes simplex virus
2. Erythema multiforme
3. Coxsackie A16 – Hand, foot, mouth disease
4. Varicella zoster virus
5. Chilblains lupus

**Itchy rash: is my eczema flaring?**
Scabies: *Sarcoptes scabei*

Bedside test
Scabies: Distribution of involvement

Suggested scabies treatment (for non-crusted)

- Permethrin 5% cream: from neck down for 8-14 hours
  - 95% effective after one dose
  - Repeat weekly x 2 weeks

- Pregnant patients: precipitate 6% sulfur in vaseline
  - Repeat daily for 3 days

Permethrin

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<td>Week 1</td>
<td>Week 2</td>
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“Powdery sand stuck on skin by egg white” = crusted scabies

Crusted Scabies

Who:

- Immunosuppression, AIDS, Down’s
- Neurologic disease + immunosuppression

- May be non-pruritic

- Highly Contagious!!!
Suggested crusted scabies treatment

- Permethrin 5% cream: from neck down for 8-14 hour
  - 95% effective after one dose
  - Repeat weekly x 3 weeks (may need BiW or TIW)

- Ivermectin
  - 200 µg/kg orally x 2 doses, two weeks apart
  - 70% effective after one dose
  - 95% effective when used in two doses

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<tr>
<th>Permethrin</th>
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<td>Ivermectin</td>
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<td>Week 1</td>
<td>Week 2</td>
<td>Week 3</td>
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Next clinic visit:
The red leg

D/dx of the red leg?

- erysipelas
- cellulitis
- DVT
- vasculitis
- pyomyositis
- necrotizing fasciitis
- asteatotic dermatitis
- venous stasis dermatitis
- contact dermatitis

Red Leg: Speed rounds
No fever, no leukocytosis, bilateral itchy red legs

Stasis dermatitis
Key features:
- bilateral erythema, edema (L>R)
- varicose veins
- brawny (golden) hyperpigmentation
- no WBC, LAD, lymphangitis

Rx: compression
topical steroids

Fever, leukocytosis, red leg

Cellulitis
- Unilateral
- GAS, Staph aureus
- Rapid spread
- Toxic-appearing patient
- WBC up, LAD, streaking
Fever, leukocytosis, red leg

Erysipelas

- Superficial cellulitis (leg, face)
- Strep (GAS > GBS)
- F>M
- Involves lymphatics
- Clue: raised, shiny plaques

Fever, leukocytosis, minimally “red” leg not responding to antibiotics
Pyomyositis

- bacterial infection of muscle
  - S. aureus (77%), strep (12%)
- risk factors:
  - trauma
  - travel (tropics)
  - immunocompromised
- Dx: MRI
- Rx: surgical drainage

Necrotizing fasciitis

- Strep/ staph infection of fascia
- post-surgical
- 20% mortality
- pain out of proportion to exam
- rapid spread (minutes to hours)
- Dx: MRI
- Rx: surgical debridement
  IV antibiotics

No fever, no leukocytosis, but a red leg history of topical neomycin for “rash”
Contact dermatitis

• clue: red, angry, weeping, itch>pain
• patient looks well
• history is key
• neomycin is top contact allergen
• also: poison oak (rhus)
  topical diphenhydramine

Red leg: Pearls

Not all red legs are cellulitis

Bilateral cellulitis is rare. Reconsider diagnosis

Many treatments for the “red leg” are exclusive

Common skin disorders & Drug eruptions

Acne “emergency”
Acne pearls for adult female patients

- Many adult females fail standard acne therapy
  - 82% fail multiple systemic antibiotics
  - 1/3 fail systemic isotretinoin
  - consider OCP (any) + spironolactone (50-200mg)
  - no K+ monitoring required for healthy patient

- Systemic antibiotics (short-term use only)
  - indicated for nodulocystic acne, truncal acne
  - may require 3 months for truncal lesions
  - works faster than hormonal therapy (2-3 weeks)

10 days later, your acne patient develops an itchy generalized maculopapular rash

- medications: vitamins, doxycycline (for acne)
- no recent travel, food exposures, sick contacts
- vaccinations up to date
- ROS: no URI, GI symptoms

Morbilliform drug eruption

- common
- erythematous macules, papules (can be confluent)
- pruritus
- no systemic symptoms
- begins in 1st or 2nd week
- treatment:
  - D/C med if severe
  - symptomatic treatment: hydroxyzine, topical steroids
When do the symptoms subside?
Up to 1 week

Drug eruptions: when to worry

Minimal systemic symptoms

Systemic involvement

Potentially life threatening
Require systemic immunosuppression

Morbiliform drug eruption
Simple

DRESS
AGEP
Stevens-Johnson (SJS)
Toxic epidermal necrolysis (TEN)
Complex

Drug eruptions: timing of onset can be helpful

Minimal systemic symptoms

Systemic involvement

Potentially life threatening
Require systemic immunosuppression

Morbiliform drug eruption
5-14 days
Simple

DRESS
2-6 weeks
AGEP
1-4 days
Stevens-Johnson (SJS)
5-20 days
Toxic epidermal necrolysis (TEN)
Complex

Signs of a serious drug eruption:

- Mucosal involvement (i.e., oral ulcerations)
- Erythroderma
- Skin pain
- Target lesions
- Bullous lesions
- Denudation (skin falling off in sheets)
- Pustules
- Facial swelling, anasarca
- Fever
- Internal organ involvement: liver, kidney > lung, cardiac
Target lesions: Stevens Johnson Syndrome (SJS)

Mucosal involvement: SJS/ TEN

Bullous lesions, denudation, pain: TEN

Facial swelling: drug-induced hypersensitivity syndrome or DRESS
Also: eosinophilia, transaminitis, renal failure
Widespread pustules: acute generalized exanthematous pustulosis (AGEP)
Also: eosinophilia, renal failure

Drug eruption pearls
Look for cutaneous signs of a potentially-fatal drug eruption
Consider ordering labs if you are not sure

<table>
<thead>
<tr>
<th>Lab order</th>
<th>What you are looking for</th>
<th>Drug eruption</th>
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<tr>
<td>CBC with differential</td>
<td>Eosinophilia</td>
<td>Any drug hypersensitivity (may be slightly increased in simple drug eruption)</td>
</tr>
<tr>
<td>ALT, AST</td>
<td>Transaminitis</td>
<td>Drug-induced hypersensitivity syndrome</td>
</tr>
<tr>
<td>BUN, Cr</td>
<td>Acute renal failure</td>
<td>Drug-induced hypersensitivity syndrome, AGEP</td>
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“Spots,” skin cancers, melanoma

Patient returns with a changing mole
Melanoma: initial evaluation

- 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
Seborrheic keratoses

- benign keratinocytic papules
- trunk, extremities > face
- do not progress to malignancy
- stuck-on tan, ovoid papule/plaque
- sometimes symptomatic

Solar lentigo/lentigines

- Pigmented, flat, even color
- Irregular borders
- Sun exposed areas

Cherry angioma (d/dx: Spitz nevus, melanoma)

- Multiple, 1-2 mm in size
- Age 30+
Actinic purpura, actinic keratoses

Non-melanoma skin cancer

What about this new skin lesion?

Basal cell carcinoma

- pearly papule or plaque
  - central ulceration
  - telangiectasia

- slow growing
- invade locally

• Rx: surgical excision
curettage
superficial -> topical
BCC can be pigmented

Squamous cell carcinoma
- scaly erythematous plaque to nodule
- sun exposed area
- potential to metastasize
- Rx: surgical excision
  IL 5-FU, MTX
  in situ -> topical

SCC on sun-damaged skin

Keratoacanthoma: self-resolving SCC

Sun-damaged skin = worry
What is the recommended frequency of skin cancer screening?

- **USPTF: 2015 update**
  - recommended only for patients with known history of melanoma, NMSC
  - no routine screening (including self-exams)
  - biopsy in 4.4% screened patients
  - 1 in 28 biopsies = melanoma

- **SCREEN study (Germany):**
  - 48% reduction in melanoma-related death
  - NNT: 100,000 screening to prevent 1 death

Breitbart EW et al (2012) JAAD, 66:201-211

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**Prevention? Let’s talk about photoprotection**

**Ultraviolet radiation**

- **UVA: 320-400nm**
  - Photoaging, melanoma
  - Not blocked by glass, clouds, ozone

- **UVB: 290-320nm**
  - Sunburn, skin cancer, melanoma
  - Blocked by clouds, ozone
Sunscreen and the UV spectrum

Sunscreen versus sunblock
- SPF
- Broad-spectrum
- Nano-technology
- Vitamin D

Photoprotection

Pearls for approach to the skin
- Using skin morphology to make the diagnosis
- Keep differential broad: infection & non-infectious causes
- If it scales, scrape it (part I): tinea corporis
- If it scales, scrape it (part II): scabies
- Differential diagnosis of the red leg
- Important differential of drug eruption, changing skin lesions

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