Skin Infections That Won’t Quit

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No relevant conflict of interests;
No discussion of off-label medications

Possible Causes

- Wrong antibiotic
- Treating wrong organism
- Using wrong therapeutic approach (e.g. abscess needs draining not antibiotics)
- Needs combined or parenteral Rx
- Bad host (Immunodeficiency)

Widening the DDx

- Dermatitis mimicking infection
- Infection but not bacterial
- Immunobullous diseases
- Insect bite reactions and infections mimicking bites
- Annular eruptions not always due to tinea
- Developmental defects

4 yo with itchy, weeping plaques

7 yo with itchy plaques

Nummular Ezcema

- Form of Atopic Dermatitis
- Marked edema in the epidermis leads to leakage of serum
- Results in crusted lesions
- Ideal bacterial growth media
- Need to treat inflammation and infection (if present)
**Nummular Eczema Up Close**

**18 years old s/p cardiac surgery 3 mos before: 3 week hx itchy rash**

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**Key Lessons**

- Exuberant dermatitis has *marked epidermal edema*
- Edema leads to serum/crust – easy to confuse with infection AND often gets colonized with bacterial
- Infection is not usually extremely itchy unless underlying dermatitis

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**Infant Known Atopic Dermatitis Getting Worse; Has fever**

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**Infection in setting of Atopic Dermatitis**

- Colonization vs. Infection
- Are you dealing with S. Aureus and if so MRSA vs MSSA?
- Could another organism be to blame (HSV, GAS)?
- Management: Must treat dermatitis to get control of infection and vice versa
Group A Strep Skin Infection in Setting of Atopic Dermatitis
- More virulent organism than S. aureus
- Kids feel sicker, skin may hurt
- Mimick of HSV infection
- Often asymptomatic pharyngeal infection
- Respond well to many of same antibiotics as S. Aureus BUT not as well to Tmp/Sulfa
- Look for other infected family members

Atopic Dermatitis in the MRSA era
- Treating with cephalaxin empirically no longer as good a strategy in atopic dermatitis flare
- Need to culture skin if infection concern
- Need to widen Rx options

What about “Bleach Baths”?
- Use of sodium hypochlorite (bleach) to diminishing bacterial colonization (e.g. MRSA)
- Concept is to make bath into a chlorinated swimming pool
- ½ to 1 cup in full bathtub; 1-2 tsp/gallon water
- Not all “Clorox” is bleach
- Irritation potential

8 month old stubborn intertrigo:
Seems to be a little irritable

6 month-old diaper rash
No response to Clotrimazole

GAS infection – perinal plus
GAS Intertrigo

- Intertrigo can be due to candida, irritation, or bacterial infection
- GAS can be subtle but moist pink erythema is characteristic
- Can involve extra-perineal sites such as neck folds
- Relapse fairly common
- May need repeat Rx and consider strategies such as concomitant mupirocin, clindamycin, etc. Honig et al. Pediatrics; 2003:112:1427-9

“Souvenir” of Trip to Mexico

Widespread Blistering especially Tense Blisters – Not Impetigo

3 you tense blisters lower legs x several days; Itchy, Non-toxic

Bugs but What Kind?

Courtesy Sheila Friedlander M.D.
Fungus that doesn’t look fungal
Rashes that look fungal but aren’t

If it looks like a ring it must be tinea?
- Many rashes can be annular including granuloma annulare, urticaria, psoriasis, and pityriasis rosea
- KOH and/or fungal culture often necessary

3yo with 6 month history facial rash

Looks fungal. It is fungal!
But it keeps coming back despite topical anti-fungals

Obvious tinea capitis
Rash begins after treatment started
Exuberant weeping eruption leg but why all the rest of the rash?

Autoeczematization AKA “Id Reaction”
- Poorly understood phenomenon – the body is “breaking out in sympathy”
- Distant rash usually develops in setting of exuberant primary skin disease (esp. tinea capitis, tinea pedis, candida DD)
- Often begins after initiation of therapy
- Easily misdiagnosed as either drug eruption or dissemination of rash (e.g. infection)

6 y.o. girl: nothing present at birth but onset abscess age 5, recurrent with only partial response to multiple antibiotics, never quite heals; Parents very frustrated!

An Recurrently Infected Cyst

Some Take-Home Messages
- Need cultures (now more than ever)
- Information from cultures is helpful but must look at clinical context to interpret
- Don’t get boxed in:
  - “Representativeness error” (being overly influenced by what is typically true)
  - “Confirmation bias” (having a hunch and ignoring other details)
- Be aware of masqueraders
Groopman, J: How Doctors Think, New Yorker, April 19, 2007