Diagnosing Dermatology with Dad: A Case-Based Family Medicine Collaboration

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Disclosure

- *Brian – I have nothing to disclose.*
- *Hannah – I have nothing to disclose.*

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Learning Objectives

By the end of this session, participants will be able to:

- Differentiate common pediatric and adult skin rashes using morphology-based classification, including morbilliform, pustular, psoriasiform, bullous, and urticarial types.
- Diagnose acneiform and follicular disorders as well as skin and soft tissue infections by integrating morphology, clinical presentation, and recognition of associated comorbidities.
- Implement evidence-based treatment strategies for follicular disorders and skin and soft tissue infections, including topical and systemic therapies, procedural options, and referral when indicated.

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Case 1: 10-Month-Old Infant with New Rash

History of Present Illness

- 10-month-old male brought to the ED for **2 days of a new rash**
- Rash described as **small "blister-like" lesions** on the **arms and legs**
- **Involves palms and soles**, sparing the face and trunk
- Rash is not painful or pruritic
- **Attends daycare**
- No fever reported, no recent illness
- No new foods, medications, or environmental exposures

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Case 1: 10-Month-Old Infant with New Rash

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Approach to Pediatric Rashes

Dermatologic exam FIRST!

- Morphology – maculopapular, urticarial, vesicular, pustular, petechial, etc.
- Distribution – localized vs generalized, discrete vs confluent, flexural vs extensor, intertriginous. Other areas – palms & soles, scalp, mucous membranes, nails
- Other features:
  - Blanching or nonblanching
  - Koebner phenomenon
  - Nikolsky sign
  - Scale or crust
  - Evanescence

FP Essent. 2017 Feb;453:11-17.
FP Essent. 2017 Feb;453:18-25.
FP Essent. 2017 Feb;453:26-32.

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Morbilliform (maculopapular, exanthematous)

Kondamudi NP, Waymack JR. Measles. [Updated 2021 Nov 7]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. [Figure, Exanthem subitum (meaning sudden rash,...]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK448098/?report=reader#article-24807.image.f2/. Contributed by Wikimedia Commons, Emiliano Buragli (Public Domain). https://creativecommons.org/licenses/by/4.0/

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Vesicular

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Bullous

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Psoriasiform

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Urticarial

Image courtesy of Dean S. Morrell, MD ®

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Pustular

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Viral vs Drug-induced Rash

Feature	Viral	Drug-induced
Onset	Within few days of illness; rapid	4-21 days post-exposure; first-time reactions >15 d
Clinical course	Rapid resolution	Days to weeks
Seasonal pattern	Common (spring, summer)	No seasonal variation
Systemic symptoms	Common	DRESS, SJS/TEN
Pruritus	Absent to mild	Prominent
Color/appearance	Bright erythema	Duskier; deeper red, purpuric
Enanthem (oral mucosa)	Common; petechial enanthem suggestive of viral	Rare
Petechial component (cutaneous)	More common	Less common
Vesiculation	Erythematous-vesicular pattern exclusive to viral	Rare in simple exanthematous reactions
Pustulation	Rare	Erythematous-pustular pattern common with drugs (AGEP)
Response to drug withdrawal	Independent course	Resolution
Absolute eosinophil count	Lower	Higher, common
CRP	Lower	Higher
Viral serology	Positive	Negative

Pediatr Allergy Immunol. 2021 Jul;32(5):824-834.
Am J Clin Dermatol. 2025 May;26(3):379-393.

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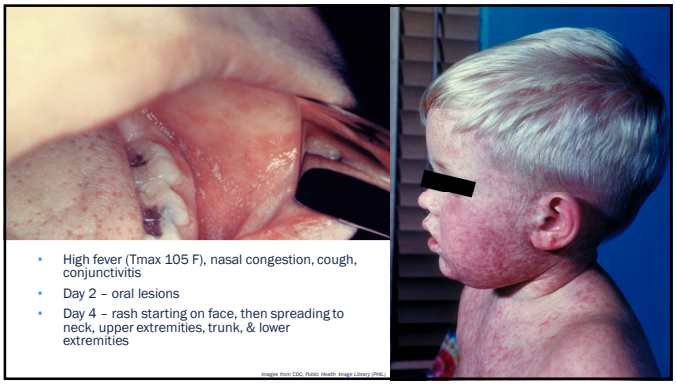

- High fever (Tmax 105 F), nasal congestion, cough, conjunctivitis
- Day 2 – oral lesions
- Day 4 – rash starting on face, then spreading to neck, upper extremities, trunk, & lower extremities

Images from CDC, Public Health Image Library (PHIL)

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Viral Exanthem: Measles (Rubeola)

Presentation
- Incubation: 11-12d
- Prodrome: high fever, 3C's (coryza, cough, conjunctivitis) for 3-4d
- Enanthem: Koplik spots (day 2-3)
- Exanthem: maculopapular rash (cephalocaudal) for 5-6d

Etiology – ssRNA, *Paramyxoviridae* family

Season – winter, spring

Transmission – respiratory (*airborne precautions, N95*)

Dx – clinical, PCR, CBC, CXR, LP

Treatment – supportive

Complications – otitis media (1:10), pneumonia (1:20), encephalitis (1:1000), death (1-3:1000), SSPE (rare/fatal, 10y post-infection)

Return to school – 5d after rash

Prevention – vaccination!

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Case 1: Case Resolution

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Case 2: 24-Year-Old Woman with Recurrent Painful Axillary Lesions

History of Present Illness
- 24-year-old female presenting with **2 months of recurrent, painful "boils"** in both axillae
- Lesions **enlarge, drain, and recur in the same areas**
- Pain limits arm movement during flares
- Otherwise healthy, no tobacco use
- **Recent significant weight changes following pregnancy in 2024**
- No fevers or systemic symptoms
- No similar lesions elsewhere

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Case 2: 24-Year-Old Woman with Recurrent Painful Axillary Lesions

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Hidradenitis Suppurativa (HS)

Hurley Staging	
Stage I	Recurrent nodules/abscesses, no tunnels/sinuses
Stage II	Limited tunnels/scarring in between normal skin
Stage III	Multiple interconnected tunnels, extensive scarring



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Image courtesy of Brian Z. Rayala, MD ®

Image courtesy of Chris J. Sayed, MD ®

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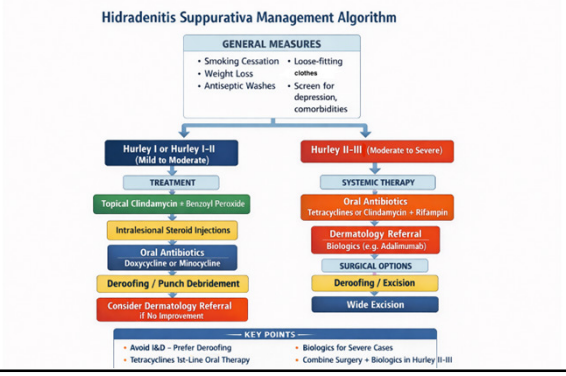
Hidradenitis Suppurativa Management Algorithm



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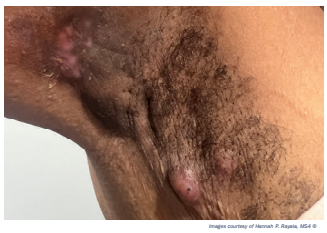
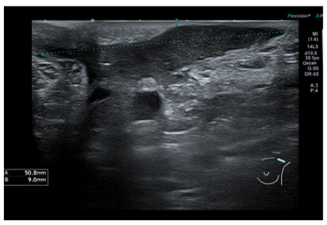
Case 2: Case Resolution

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Case 3: 40-Year-Old Man with Systemic Symptoms and Multiple Skin Findings

History of Present Illness

- 40-year-old male with history of **alcohol use disorder**
- Transferred for **progressive right index finger swelling and pain** after **puncture wound from tire wire**
- Associated **generalized weakness**
- Also had a **chronic left lower extremity wound with surrounding redness**
- Started on **broad-spectrum IV antibiotics prior to transfer**
- No known history of diabetes at presentation
- Systemic symptoms prompted concern for **deep infection and bloodstream involvement**

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Case 3: 40-Year-Old Man with Systemic Symptoms and Multiple Skin Findings

Images courtesy of Hannah P. Rayala, MS4 ®

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Case 3:

40-Year-Old Man with Systemic Symptoms and Skin Findings

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Cutaneous Findings and Clinical Implications

- Multiple erythematous papulo-pustules w/ excoriation
- Superficial nodulocystic lesions w/ **purulence**
- Severe finger infection
- Systemic symptoms
- Excoriating dermatosis
  - Investigate & treat
- Abscesses (**Purulent SSTI**)
  - POCUS, drainage
- Puncture wound
  - Source control, immediate consultation
- Sepsis protocols
  - Culture-directed tx

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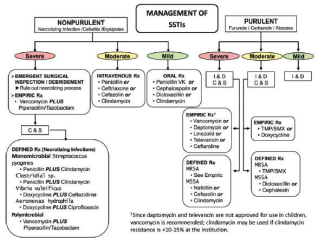
Purulent SSTIs (Furuncle, Carbuncle, Abscess)



Clin Infect Dis. 2014 Jul 15;59(2):147-59.

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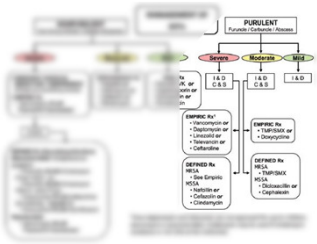
Purulent SSTIs (Furuncle, Carbuncle, Abscess)



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Purulent SSTIs (Furuncle, Carbuncle, Abscess)

- Evaluation
  - GS/C&S of pus *recommended*, but treatment without these studies is reasonable in typical cases
  - GS/C&S of pus from inflamed epidermoid cyst not recommended
- Severity
  - **Mild**
  - **Moderate** –systemic signs of infection
  - **Severe** – SIRS, immunocompromised, or failed I&D plus oral abx
- Management
  - **I&D**
  - **I&D + abx** (*Staph*) – pts w/ SIRS
  - **MRSA coverage** – failed initial abx (MSSA), immune-suppressed, SIRS, hypotensive
- Recurrent abscesses
  - Look for causes (pilonidal cyst, HS, FB, neutrophil d/o)
  - Drain & culture *early*
  - Culture-directed tx for **5-10d**
  - Consider decolonization

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Case 3: Clinical Course & Resolution

Hospital Course

- Admitted for **deep hand infection with concern for flexor tenosynovitis**
- Underwent **multiple incision & drainage procedures** of LLE abscesses (ED) and right index finger by Plastic Surgery
- Blood cultures grew **methicillin-resistant Staphylococcus aureus (MRSA)**
- Treated with **IV vancomycin** during hospitalization
- Chronic left lower extremity wound treated as **infection source**
- New diagnosis of **Type 2 Diabetes Mellitus (A1c 6.9%)**
- Transitioned to **single-dose IV dalbavancin** at discharge
- Planned **oral linezolid** for outpatient therapy per Infectious Disease
- Repeat blood cultures negative prior to discharge

Discharged home in stable condition with **Plastics + PCP follow-up**

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Case 4: 58-Year-Old Man with Open Back Wound

History of Present Illness

- 58-year-old male with history of **schizophrenia, bipolar disorder, and seizure disorder**
- Presents via EMS for **evaluation of a chronic back wound**
- Reports wound present for **~6 weeks**
- Noticed **new red-white drainage on clothing 2 days prior**
- EMS noted **fever to 101.5 °F**, afebrile on ED arrival
- Denies pain, chills, nausea, vomiting; no IV drug use
- No recent trauma to the area

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Case 4: 58-Year-Old Man with Open Back Wound

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Cutaneous Findings and Clinical Implications

- Open superficial skin nodule or cyst w/ adequate drainage
- Limited perilesional erythema
- Multiple comedones, nodules w/ puncta
- Clinical comorbidities
- Inflamed epidermoid cyst
  - I&D +/- culture
- Antibiotics vs No abx
- Acneiform & follicular skin disorders
  - Nodulocystic acne
  - Steatocystoma multiplex
- Management options

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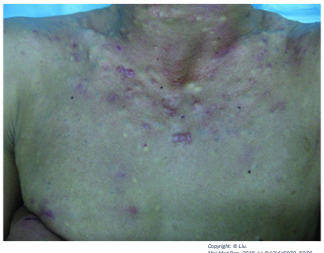
Nodulocystic acne vs Steatocystoma multiplex



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Case 4: Case Resolution

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Case 5: 3-Year-Old Girl with New Open Skin Lesions

History of Present Illness

- 3-year-old female with history of **asthma and eczema**
- Mother noticed **small blister-like lesions 1 day prior** on:
  - Right upper arm
  - Right thigh
- Lesions **began as blisters, then opened**
- Painful only when cleaned, **not itchy**
- Child **plays outside frequently** with multiple minor scratches
- No fever, no systemic symptoms
- No daycare, no sick contacts
- No new soaps, detergents, or exposures

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Case 5: 3-Year-Old Girl with New Open Skin Lesions

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Impetigo

- Etiology: *Staph, Strep*
- Types: primary, secondary
- Forms:
  - Non-bullous
    - *Staph*, *Strep*
    - Face, extremities
  - Bullous
    - *Staph* only
    - Trunk, extremities
- **Treatment:**
  - Non-extensive impetigo
    - topical mupirocin and fusidic acid ≥ oral abx
    - retapamulin, ozenoxacin
  - Extensive impetigo
    - Insufficient evidence for best treatment
    - PCN inferior to erythromycin and cloxacillin
- **Return to school:**
  - 24 hrs after oral abx
  - 48 hrs after topical abx

Clin Infect Dis. 2014 Jul 15;59(2):147-59.
Cochrane Database Syst Rev. 2012 Jan 18;1(1):CD003261.

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Practice Recommendations

- For patients with primary skin complaints, perform a dermatologic exam (prior to comprehensive H&P) and quickly establish morphology and distribution of cutaneous presentation. (***SOR C***)
- Treat mild HS with topical (***SOR B***) and intralesional therapies (***SOR C***); manage moderate-to-severe HS with systemic (***SOR B***) & surgical therapies, and consider early referral. (***SOR C***)
- Drain purulent SSTI and treat moderate-to-severe infections with culture-directed antistaphylococcal antibiotics. (***SOR C***)
- Treat non-extensive impetigo with topical mupirocin (***SOR B***); consider oral antibiotics for extensive disease & outbreaks. (***SOR C***)
- For patients with recurrent or persistent dermatologic symptoms, be attentive to subtle cutaneous findings and broaden your diagnostic considerations. (***SOR C***)

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Any questions?

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