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**ENVISION** A PATH TO SUCCESS

OCT 15-18 —  — VIRTUAL



# Pediatric Dermatologic Presentations in the Emergency Department

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# Faculty Disclosure

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I have no relevant financial relationships to disclose.

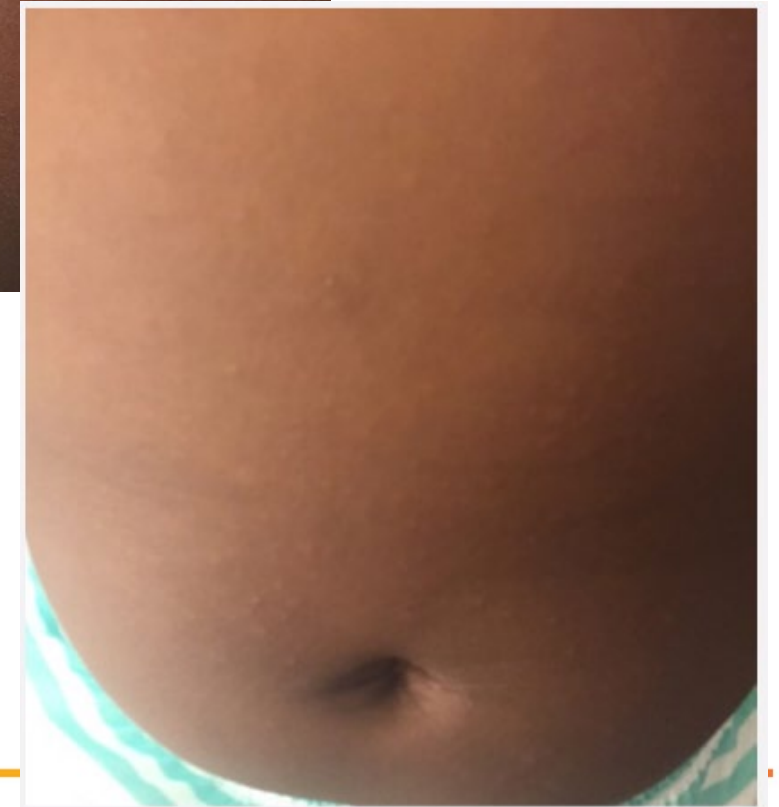
# Objectives

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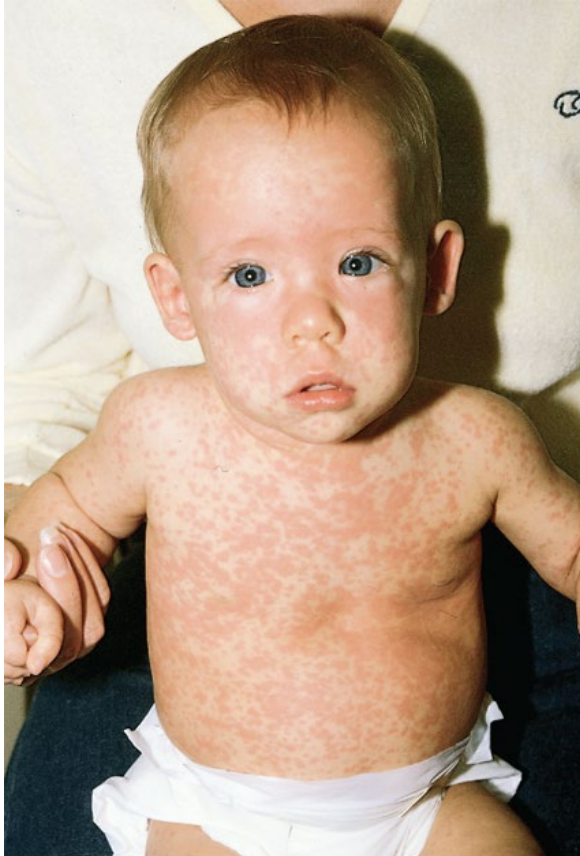
- Recognize emergent versus non-emergent pediatric rash presentations in the ED.
- Relate appropriate associated symptomatology associated with selected rashes and determine a plan of care.
- Apply visual knowledge base to a large breadth of common and uncommon dermatologic presentations.

## Case # 1

- 13-month-old female presented to her FP office with a 4-day history of fever, nasal congestion, rash and loose stools. T-max is 103.9, rectally.
  - Diminished appetite
  - Irritability
  - Malaise
- Up to date on immunizations
- Started daycare 1 month ago
- On 5<sup>th</sup> day the fever subsided, and patient developed an erythematous-maculopapular rash on the trunk



# Roseola (sixth disease)



Source: J.E. Tintinalli, J.S. Stapczynski, O.J. Ma, D. Yealy, G.D. Meckler, D.M. Cline: Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9th Edition: Copyright © McGraw-Hill Education. All rights reserved.

- Exanthem subitem or sixth disease
- HHV-6 and HHV-7
- Occurs at 6 months to 3 years of age
- Pre-exanthem: URI, periorbital edema, lymphadenopathy, diarrhea
- Course: high fever for 3-5 days in a well appearing child → defervescence → rash on trunk and proximal extremities 1-2 days
  - Small, blanchable, rose/pale-pink, maculopapules 2-5mm in size
  - Neck, trunk, buttocks
  - Lasts 1-2 days

## Case # 2

- ER visit #2: 7-year-old male presents to the ED with a rash & fever.
- History:
  - PCP visit #3: dx with allergic reaction (patient had been on penicillin for “scarlet fever” despite a negative strep test)
  - ER visit #1 – dx with erythema multiforme and discharged
  - Rash continued to worsen, fever continues, lip swelling, refuses to bear weight due to foot pain
  - ER visit #2: labs drawn



# Erythema Multiforme (EM)

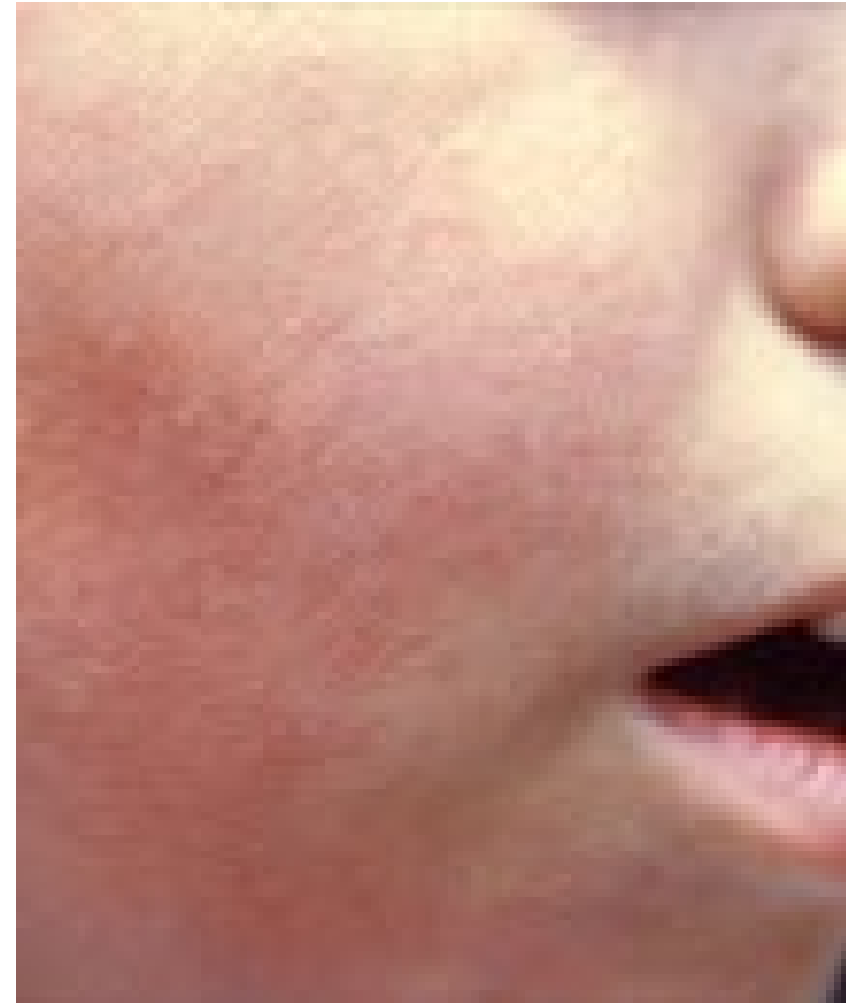
- “Target” lesions with 2-3 zones of dark, ruddy appearing center and a lighter colored area surrounding the center
  - Coalescing plaques
  - Palms and soles
- EM minor – limited distribution
- EM major – involves oral mucosa
- Cause:
  - Medications
  - Infection in children
    - Herpes virus (70-90%) and Mycoplasma pneumoniae





## Case # 3

- 5-year-old male presents to the ER with a fever and a rash
- Rash is only on the cheeks
- Associated rhinorrhea, decreased oral intake and diarrhea
- It is mid-spring and the child just started in daycare
- Up to date on immunizations



# Erythema Infectiosum (fifth disease)

- Acute, febrile illness, occurs in the spring
- Cause: parvovirus B19
- Symptoms: HA, ST, cough. Coryza, N/V/D, arthralgias
- Characterized by abrupt appearance of rash
  - “Butterfly wings” or “slapped cheek”
    - Diffuse erythema, closely grouped papules on erythematous base
    - Fades after 4-5 days
  - Develop macular rash diffusely 1-2 days later
    - Fades with central clearing (reticulated appearance)
- Complications: aplastic anemia in sickle cell disease, fetal anemia and hydrops in pregnant women



<http://quintepediatrics.com/tag/fifth-disease/>

## Case # 4

- 15-month-old male is brought to the ED for yellow, crusting patches on his upper lip and nose
- An older sibling in school has a similar rash on their cheek and upper arm
- No other associated symptoms



Source: Fitzpatrick's Color Atlas & Synopsis of Clinical Dermatology Klaus Wolff, Richard Allen Johnson, Dick Suurmond Copyright 2005, 2001, 1997, 1993 by The McGraw-Hill Companies. All Rights reserved.

# Impetigo

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- Cause: Staphylococcus aureus (MSSA) or B-hemolytic streptococci
- Distribution: face, extremities
- Non-bullous (MC)
  - Small papules → vesicles → pustular → rupture → “honey-colored” crusty exudate
- Treatment
  - Clean area, remove crusts with wet dressings
  - Localized area: topical: mupirocin (Bactroban) 2%
    - TID for 7-14 days
  - Large area affected: cephalexin or clindamycin
- Culture if no response to therapy
- 5% of Strep pyogenes cases → acute post-streptococcal glomerulonephritis

## Case # 5 Flesh Eating Bacteria?

- 3-month-old male with 2-day history of “lesions” on his chest, left arm and face
- No fevers, chills, oral lesions or new medications
- Older sister with similar lesion on her buttock



# Ecthyma “deep impetigo”



Source: S. Kang, M. Amagai, A.L. Bruckner, A.H. Enk, D.J. Margolis, A.J. McMichael, J.S. Orringer: Fitzpatrick's Dermatology, Ninth Edition Copyright © McGraw-Hill Education. All rights reserved.

- Cause: Staphylococcus aureus (MSSA) or GAS
  - Untreated impetigo
- Small, pus-filled blister and red border, which eventually leaves a thick black/brown crusty ulcer underneath, “punched-out”, extends to dermis
- Spread - contact with bacteria, autoinoculation
- Culture - if antibiotics fail
- DDX: insect bites, venous stasis ulcers, ecthyma gangrenosum
- Treatment: Topical vs. Oral abx

## Case # 6

- 3-year-old male presents to the emergency department at 3am for abdominal pain
- Onset of symptoms about 2 days ago, but pain worsened tonight
- Parents tried to get him out of bed, but he cries and refuses to stand up on his own
- He has had a fever, but no N/V/D



# Immunoglobulin A Vasculitis (Henoch-Schonlein Purpura)

- Most common vasculitis in childhood aged 3-15 years
- Cause: Preceding viral URI, streptococcal infections, medications
- *Non-thrombocytopenia palpable purpura, renal disease (hematuria), abdominal pain, polyarthralgias*
- Deposition of IgA, C3, and immune complexes in the walls of blood vessels
- Clinical presentation
  - Rash: petechiae, raised purpura or larger ecchymoses (3-10 days)
  - Lower extremities, buttocks, extensor aspect upper extremities
  - N/V/D (80%), arthralgias (75%), edema of lower extremities, bloody stools, abdominal pain, renal involvement (30%)
  - Patient may refuse to bear weight



- **Diagnosis**

- Based on clinical constellation of symptoms
- Labs:
- CBC (platelets normal)
- UA
- Occult blood in stool specimens
- Rule out other disease processes

- **Clinical Course**

- Spontaneously resolves in 94% of children and 89% of adults over weeks to months
- Complications:
  - Glomerulonephritis
  - GI bleeding
  - Intussusception
  - Orchitis

- **Treatment**

- Supportive
- Steroids can be used, do not alter prognosis

## Case # 7

- 5-year-old boy presents to the ED with his mother with a well-demarcated, erythematous skin rash in a drip-mark configuration on his shoulders, upper arms, trunk and back
- Spent the weekend at his fathers playing outdoors
- No associated fevers, chills, URI sx
- No rash on palms, soles or mucus membranes
- Rash is not itchy or painful
- Parent admits to using homemade lice removal solution on the patient



# Phytophotodermatitis “Lime Dermatitis”, “Berloque Dermatitis”

- Non-immunologic inflammatory skin reaction
  - No prior sensitization required
- Due to contact with psoralen & UV-A exposure
  - Lemons, limes, celery, parsnips, figs, bergamot oranges, carrots, dill, mustard
- Rash onset 24 hours after exposure, peaks in 48-72 hours
- Erythema, edema, vesicles, bullae
- Hyperpigmentation lasts weeks to months
- Diagnosis: irregular or bizarre sunburns
- Treatment: Cool compresses, topical steroids for severe reaction



## Case # 8

- 18-year-old male presents with a 1-week history of asymptomatic rash on his back
- About 1 week prior noted a scaling plaque in his left groin/lower abdomen
- Denies fevers, chills, previous episodes of similar, denies family with similar



# Pityriasis Rosea

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- Etiology: possible viral etiology (HHV-6 and HHV-7)
- Peak occurrence between ages 10-35 years
- Clinical:
  - “Herald patch”, skin/pink/salmon colored patch with raised margins
  - Secondary eruption 1-2 weeks after the herald patch
    - On the trunk along Langer lines
    - “Christmas tree” pattern
    - 50% of patients with severe pruritis
  - 69% of patients with headache, fever, malaise, nausea, fatigue, arthralgias
  - Eruption lasts 6-8 weeks

# Pityriasis Rosea

- Differential diagnosis:
  - Nummular eczema
  - Lichen planus
  - Medication reaction
  - Seborrheic dermatitis
  - Secondary syphilis
  - Tinea corporis
- Treatment:
  - Symptomatic: antihistamines or steroids for pruritis
  - Antivirals – for severe cases, have been shown to improve sx
  - Phototherapy – small studies, showed some improvement



<https://www.aafp.org/afp/2018/0101/p38.html>

## Case # 9

- 5-year-old boy presents to the ED for a fever and a rash
- Temperature 100.7
- Has a sore throat that started 2 days ago, rash started today
- Decreased oral intake
- Mild abdominal pain, diffuse
- No nausea or vomiting
- Appears well overall



Source: J.E. Tintinalli, J.S. Stapczynski, O.J. Ma, D. Yealy, G.D. Meckler, D.M. Cline: Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 9th Edition: Copyright © McGraw-Hill Education. All rights reserved.

# Scarlet Fever

- Toxin mediated exanthem caused by Streptococcus pyogenes (GAS) exotoxin
- Occurs in ages 5-15 years
- 10% of children presenting with streptococcal pharyngitis
- “sandpaper” rash, erythematous, blanchable, maculopapular
  - 1-2 days after initial symptoms
  - Spares palms and soles
  - Pastia lines
  - Desquamation several weeks later
- Diagnosis: Rapid antigen testing and throat culture



<https://www.gponline.com/infectious-diseases-scarlet-fever/infections-and-infestations/infections-and-infestations/article/1324924>



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- Emergency Department Management of Rash and Fever in the Pediatric Patient. Rhonda L. Philopena, MD; Erin M. Hanley, MD; Kayla Dueland-Kuhn, MD. EB Medicine.  
<https://www.ebmedicine.net/topics/infectious-disease/pediatric-rash-fever>



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  - For a clear and easily digestible message, keep bullets short and to the point.
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## Table style

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