Infectious Exanthems of Childhood

William C. Koch, M.D.
Associate Professor of Pediatrics
Division of Infectious Diseases
School of Medicine
Virginia Commonwealth University

Definitions
- Exanthem: a generalized cutaneous eruption associated with a systemic disease
- Enanthem: an eruption on a mucous membrane associated with a systemic disease

Differential diagnosis of infectious rashes based on:
- Past history of infection, exposure, immunization
- Type of prodromal period
- Features of the rash
- Presence of pathognomonic or diagnostic signs
- Laboratory diagnostic tests

Clinical Case #1
- 7 y/o with 2 day history of fever, sore throat and abdominal discomfort, 1 day history of generalized rash
- PE: alert but ill-appearing; febrile; erythematous, finely papular rash; exudative pharyngitis, tender cervical nodes
Differential Diagnosis of Scarlet Fever
- Viral pharyngitis and rash
- “Staphylococcal scarlet fever”
- *Arcanobacterium haemolyticum* infection
- Kawasaki Disease
- Toxic Shock Syndrome
- Measles

Diagnostic Criteria for Kawasaki Disease
- Fever lasting at least 5 days
- Presence of 4 out of 5 conditions:
  - Bilateral conjunctival injection
  - Changes in the mucosa of oropharynx
  - Changes in the peripheral extremities
  - Unilateral cervical node enlargement
- Illness not explained by other known disease

Complications of Streptococcal Scarlet Fever
- Suppurative: cervical adenitis, peritonsillar abscess, etc.
- Nonsuppurative: rheumatic fever and acute glomerulonephritis

Clinical Case #2
10y/o with history of URI 4-5 days ago, now with rash on face spreading to trunk. Mother worried about measles. Attends public school; no travel or exposure history.

PE: afebrile, doesn’t appear ill except for prominent rash: flushed facial appearance with diffuse, erythematos M/P rash on trunk and proximal extremities; palms and soles spared; HEENT exam is normal.
Differential Diagnosis

- Measles
- Rubella
- Erythema infectiosum (fifth disease)
- Infectious mononucleosis
- Drug eruption
- Other viral infection
Complications of Measles

- Otitis media
- Laryngotracheitis (croup)
- Obstructive laryngitis
- Bronchopneumonia
- Encephalitis
- SSPE
Clinical Case #3

- 3y/o with 2-3 day history of fever, decreased activity and complaints of HA. Presents in July; lives in rural area but no history of tick bite or other known exposure.
- PE: febrile, ill-appearing child, but alert and cooperative. Neck is supple. Faint petechial rash on distal extremities, including palms and soles; none on trunk. Rest of exam normal.
Differential Diagnosis of Fever and Petechial Rash

- Rocky Mountain Spotted Fever
- Meningococcemia
- Other rickettsial infection (ehrlichiosis, etc.)
- Other bacterial infection/sepsis (e.g. H. influenzae, E. coli, etc.)
- Viral infection, esp. enteroviruses
- Trauma
- Typhoid

Rocky Mountain Spotted Fever (RMSF)

- Etiologic Agent: Rickettsia rickettsii
- Distribution: southeastern and south central states primarily
- Vectors: dog tick (Dermacentor variabilis); wood tick (D. andersoni); Lone Star tick (Amblyomma americanus)
- Peak seasons: spring and summer
Features of the rash of RMSF
- Begins as erythematous macules/papules and becomes petechial
- First appears on wrist and ankles, spreading to extremities and proximal trunk
- Palms and soles often involved
- Rash usually occurs by sixth day of illness

Treatment of RMSF
- Chloramphenicol or tetracycline is highly effective if given early – during the first week of illness
- If the disease proceeds into the second week, even optimal therapy becomes progressively less effective
- Adequate supportive care is essential: fluid management, monitoring, blood products, etc.

Infectious Exanthems of Childhood
William C. Koch, M.D.
Associate Professor of Pediatrics
Division of Infectious Diseases
School of Medicine
Virginia Commonwealth University