Name That Rash or Lesion: Pediatric and Adolescent Dermatology

Wendy L. Wright,
DNP, ANP-BC, FNP-BC, FAANP, FAAN, FNAP
Adult/Family Nurse Practitioner
Owner – Wright & Associates Family Healthcare @Amherst
Owner – Partners in Healthcare Education

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Disclosures

- Speaker Bureau:
  - Sanofi-Pasteur, Merck, Pfizer, Sanofi, Seqirus: Vaccines
  - AbbVie and Pfizer: Migraines
  - Idorsia: Insomnia
- Consultant:
  - Sanofi-Pasteur, Merck, Pfizer, Moderna, and Seqirus: Vaccines
  - GlaxoSmithKline: OA and Pain
  - Idorsia: Insomnia
  - Shield Therapeutics: Iron Deficiency Anemia

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Objectives

- Upon completion of this program, the participant will be able to:
  - Identify various pediatric and adolescent dermatology conditions.
  - Determine those conditions that warrant a referral.
  - Develop an appropriate plan for evaluation, treatment and follow-up individuals with dermatologic complaints.

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Fifth's Disease (Erythema Infectiosum)

- Human Parvovirus B19
  - Occurs in epidemics
  - Occurs year round: Peak incidence is late winter and early spring
- Most common in individuals between 5-15years of age
  - Period of communicability believed to be from exposure to outbreak of rash
  - Incubation period: 5-10 days
  - Can cause harm to pregnant women and individuals who are immunocompromised

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Fifth's Disease (Erythema Infectiosum)

- Low grade temp, malaise, sore throat
  - May occur but are less common
- 3 distinct phases
  - Facial redness for up to 4 days
  - Fishnet like rash within 2 days after facial redness
  - Fever, itching, and petecchiae
    - Petecchiae stop abruptly at the wrists and ankles
      - Hands and feet only

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Fifth's Disease (Erythema Infectiosum)

- Physical Examination Findings
  - Low grade temperature
  - Erythematous cheeks
    - Nontender and well-defined borders
  - Netlike rash
    - Erythematous lesions with peripheral white rims
    - Rash-remits and recurs over 2 week period
  - Petecchiae on hands and feet

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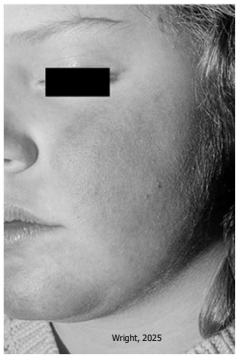
Fifth's Disease



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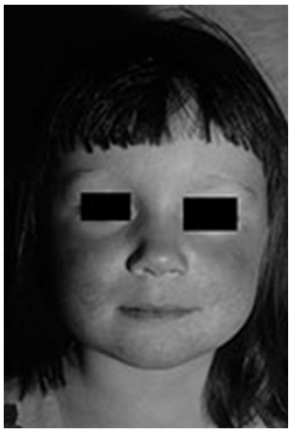

- Fifth's Disease

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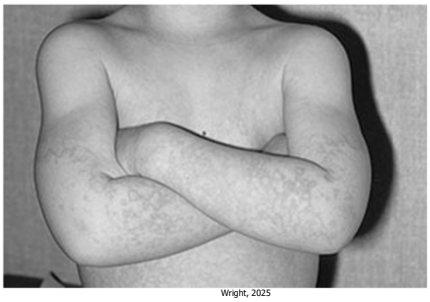
Fifth's Disease



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Fifth's Disease (Erythema Infectiosum)

- Diagnosis/Plan
  - Parvovirus IgM and IgG
  - IgM=Miserable and is present in the blood from the onset up to 6 months
  - IgG=Gone and is present beginning at day 8 of infection and lasts for a lifetime
  - CBC-May show a decreased wbc count

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Fifth's Disease (Erythema Infectiosum)

- Diagnosis/Plan
  - Was contagious before rash appeared therefore, no isolation needed
    - Spread via respiratory droplets
  - Symptomatic treatment
  - Patient education-I.e. contagion, handwashing
  - Can cause aplastic crisis in individuals with hemolytic anemias
  - Concern regarding: miscarriage, fetal hydrops
  - Adults: arthralgias

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Hand, Foot, and Mouth Disease (Coxsackie Virus)

- Caused by the coxsackie virus A16
- Most common in children
- 2-6 day incubation period
- Occurs most often in late summer-early fall
- Symptoms
  - Low grade fever, sore throat, and generalized malaise
  - Last for 1-2 days and precede the skin lesions
  - 20% of children will experience lymphadenopathy

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cdc.gov

- From November 7, 2011, to February 29, 2012, CDC received reports of 63 persons with signs and symptoms of HFMD or with fever and atypical rash in Alabama (38 cases), California (seven), Connecticut (one), and Nevada (17).
- Coxsackievirus A6 (CVA6) was detected in 25 (74%) of those 34 patients
- Rash and fever were more severe, and hospitalization was more common than with typical HFMD.
- Signs of HFMD included fever (48 patients [76%]); rash on the hands or feet, or in the mouth (42 [67%]); and rash on the arms or legs (29 [46%]), face (26 [41%]), buttocks (22 [35%]), and trunk (12 [19%])
- Of 46 patients with rash variables reported, the rash typically was maculopapular; vesicles were reported in 32 (70%) patients
- Of the 63 patients, 51 (81%) sought care from a clinician, and 12 (19%) were hospitalized. Reasons for hospitalization varied and included dehydration and/or severe pain
- No deaths were reported

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Hand, Foot, and Mouth Disease – A6

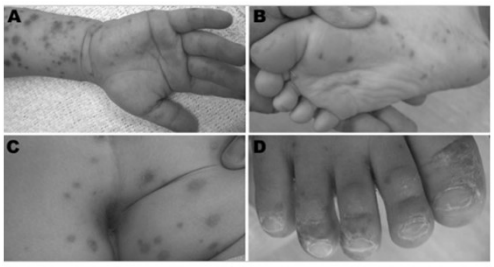

Figure. Typical clinical manifestations of hand, foot, and mouth disease associated with coxsackievirus CVA6 in Shizuoka, Japan, June–July, 2011. A) Hand and arm of a 2.5-year-old boy; B) foot and C) buttocks of a 6-year-old boy; D) nail matrix of a 20-month old boy.

http://wwwnc.cdc.gov/eid/article/18/2/11-1147-f1.htm accessed 05-01-2013

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Hand, Foot, and Mouth Disease (Coxsackie Virus)

- Physical Examination Findings
  - Oral lesions are usually the first to appear
    - 90% will have
  - Look like canker sores; yellow ulcers with red halos
  - Small and not too painful
  - Within 24 hours, lesions appear on the hands and feet
    - 3-7 mm, red, flat, macular lesions that rapidly become pale, white and oval with a surrounding red halo
    - Resolve within 7 days

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Hand, Foot, and Mouth Disease (Coxsackie Virus)

- Physical Examination Findings
  - Hand/feet lesions
    - As they evolve – may evolve to form small thick gray vesicles on a red base
    - May feel like slivers or be itchy

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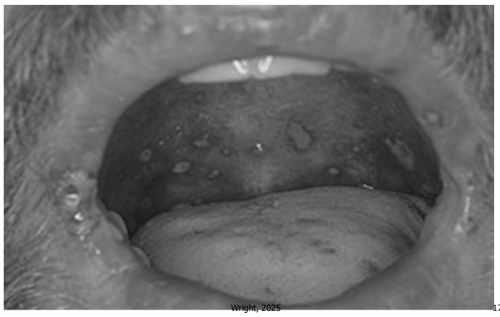
Hand Foot and Mouth Disease



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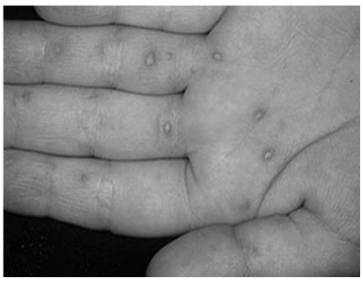
Hand Foot and Mouth Disease



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Hand, Foot, and Mouth Disease (Coxsackie Virus)

- Plan
  - Diagnostic: None
  - Therapeutic
    - acetaminophen
    - Warm baths
    - Benzalkonium chloride/benzocaine/zinc chloride (Orajel)
    - Diphenhydramine/aluminum hydroxide/magnesium hydroxide (Benadryl/Maalox)

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Hand, Foot, and Mouth Disease (Coxsackie Virus)

- Plan
  - Educational
    - Very contagious (2d before -2 days after eruption begins)
    - Entire illness usually lasts from 2 days – 1 week
    - Reassurance
    - No scarring

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Pityriasis Rosea

- Etiology
  - Common, benign skin eruption
  - Etiology unknown but believed to be viral
  - Small epidemics occur at frat houses and military bases
  - Females more frequently affected
  - 75% occur in individuals between 10 and 35; higheset incidence: adolescents
  - 2% have a recurrence
  - Most common during winter months

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Pityriasis Rosea

- Symptoms
  - Rash initially begins as a herald patch
  - Often mistaken for ringworm
  - 29% have a recent history of a viral infection
  - Asymptomatic, salmon colored, slightly itchy rash
- Signs
  - Prodrome of malaise, sore throat, and fever may precede
  - Herald patch: 2-10cm oval-round lesion appears first
  - Most common location is the trunk or proximal extremities

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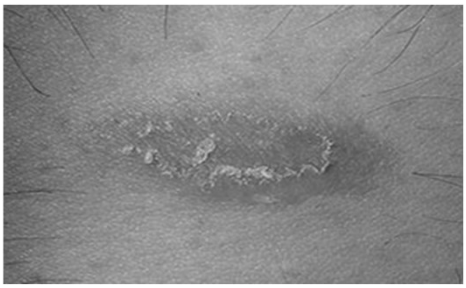
Pityriasis Rosea



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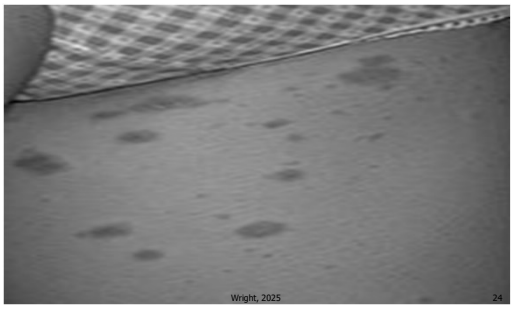
Pityriasis Rosea



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Pityriasis Rosea

- Signs
  - Eruptive phase
    - Small lesions appear over a period of 1-2 weeks
      - Fine, wrinkled scale
      - Symmetric
      - Along skin lines
      - Looks like a drooping pine tree
      - Few lesions-hundreds
      - Lesions are longest in horizontal dimension

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Pityriasis Rosea

- Signs (continued)
  - 7-14 days after the herald patch
  - Lesions are on the trunk and proximal extremities
  - Can also be on the face

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Pityriasis Rosea

- Diagnosis
  - History and physical examination
- Plan
  - Diagnostic
    - Can do a punch biopsy if etiology uncertain
      - Pathology is often nondiagnostic
      - Report: spongiosis and perivascular round cell infiltrate
    - Consider an RPR to rule-out syphilis

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Pityriasis Rosea

- Plan
  - Therapeutic
    - Antihistamine
    - Topical steroids
    - Short course of steroids although, may not respond
    - Sun exposure
    - Moisturize
  - Educational
    - Benign condition that will resolve on own
      - May take 3 months to completely resolve
    - No known effects on the pregnant woman
    - Reassurance

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Contact Dermatitis: Rhus Dermatitis

- Rhus Dermatitis
  - Poison ivy, poison oak and poison sumac produce more cases of contact dermatitis than all other contactants combined
  - Occurs when contact is made between the leaf or internal parts of the roots and stem and the individual
    - Can occur when individual touches plant or an animal does and then touches human
  - Eruption can occur within 8 hours of the contact but may take up to 1 week to occur

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Clinical Pearls

- Poison ivy is not spread by scratching
- No oleoresin is found in the vesicles and therefore, can not be spread by scratching
- Lesions will appear where initial contact with plant occurred
- Resin needed to be washed from skin within 15 minutes of exposure to decrease risk of condition

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Clinical Presentation

- Clinical presentation
  - Characteristic linear appearing vesicles are likely to appear first
  - Often surrounded by erythema
  - Intensely itchy
  - Lesions often erupt for a period of 1 week and will last for up to 2 weeks
  - More extensive and widespread presentation can occur with animal exposures or burning of the plants / smoke exposure

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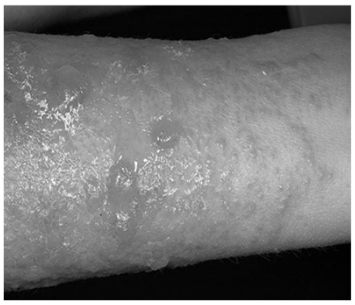
Contact Dermatitis



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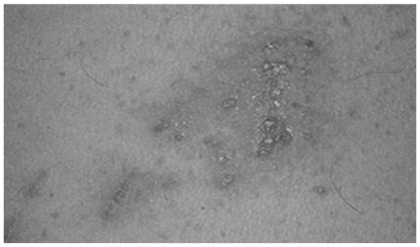
Contact Dermatitis



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Treatment

- Cool compresses 15 – 30 minutes three times daily
- Topical calamine or caladryl lotions
- OTC washes – binds urushiol oil and removes from body/blisters
  - 75% decrease in itching and rash within 24 hours per package
- Colloidal oatmeal baths once daily

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Treatment

- Oral antihistamines
  - May wish to use sedating antihistamines at bedtime
- Topical corticosteroids
  - Avoid usage on the face
- Oral prednisone vs. injectable triamcinolone or similar (20% or more of body affected or face/genitalia/hands)
  - 20 mg two times daily x 7 days
  - Triamcinolone (Kenalog) 40 mg injection (IM)

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Follow-up

- Monitor for secondary infections
- Impetigo
  - Staph vs. strep
  - MRSA
- Education:
  - Lesions will decrease over a 2 week period
  - May continue to erupt over 48 hours despite steroid administration
  - Not spreading lesions with rubbing or scratching

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Hot Tub Folliculitis

- Inflammation of the hair follicle
- Caused by infection which occurs within 8 hours – 5 days of using contaminated hot tub or whirlpool
- Unfortunately, showering after exposure provides no protection
- *Pseudomonas* is the most common cause of hot tub folliculitis
- May also be caused by Staphylococcus, but unusual
  - MSSA or MRSA

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Clinical Presentation

- One or more pustules may first appear
- Fever may or may not be present; usually low grade if it does occur
- Malaise and fatigue may accompany the outbreak
- Pustules may have wide rims of erythema

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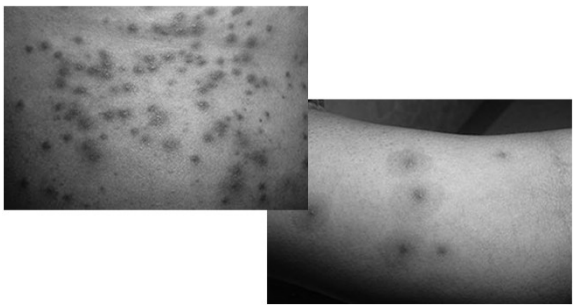
Hot Tub Folliculitis



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Treatment

- Culture of lesions is likely warranted
- White vinegar wet compresses – 20 minutes on three x daily may provide significant benefit
- Oral Antibiotics
  - Ciprofloxacin is preferred agent if hot tub folliculitis is suspected due to pseudomonas coverage
- Discuss contagiousness
  - No evidence that it is spread person - person

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Verruca Vulgaris

- Common warts
- Benign lesions of the epidermis caused by a virus
- Transmitted by touch and commonly appear at sites of trauma, on the hands, around the periungual regions from nail biting and on the plantar surfaces of the feet

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Verruca Vulgaris

- Appearance
  - Smooth, flesh colored papules which evolve into a dome-shaped growth with black dots on the surface
  - Black dots are thrombosed capillaries and can be visualized with a 15 blade
- Treatment
  - OTC products: Compound W; Duoplant

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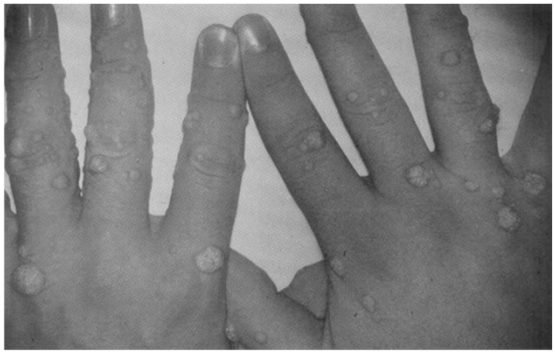
Verruca Vulgaris



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Verruca Vulgaris

- Treatment
  - Liquid nitrogen
  - Cryosurgery
  - Electrocautery
  - Duct Tape
  - Blunt dissection (plantar lesions)
  - Tagamet 600 mg bid x 2 - 4 weeks
  - Imiquimod

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Condyloma Acuminata

- AKA: genital warts
- Etiology: human papillomavirus
  - More than 30 strains of HPV infect the genital tract
  - Usually caused by HPV subtypes 6, 11, 40 – 45, and 51
- Transmitted through sexual contact
- Incubation period of 1 – 6 months

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Condyloma Acuminata

- Characteristics
  - Cauliflower appearing lesion
  - White or flesh toned
  - May be associated with abnormal pap smear

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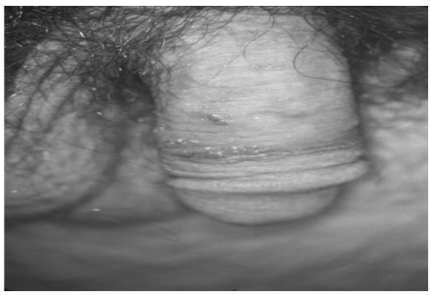
Condylomata Acuminata



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Condyloma Acuminata

- Treatment
  - Cryosurgery
  - Imiquimod 5% cream
  - TCA
  - Electrodessication
  - Laser
  - Podofilox

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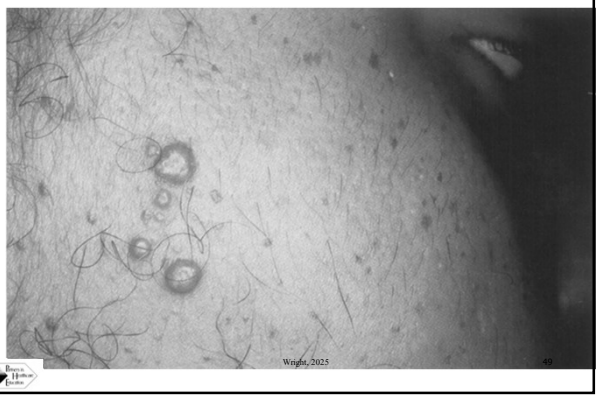
Molluscum Contagiosum



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Molluscum Contagiosum

- Plan
  - Diagnostic:
    - None or KOH prep looking for inclusion bodies
  - Therapeutic:
    - Conservative treatment is the best for children
      - Curettage
      - Cryosurgery
      - Tretinoin

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Molluscum Contagiosum

- Plan
  - Therapeutic:
    - Salicylic Acid (Occlusal)
    - Laser
    - TCA
    - Imiquimod

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Molluscum Contagiosum

- Plan
  - Educational
    - May resolve on own in 6 - 9 months
    - Contagious until lesions are gone
    - Benign
    - Recurrence very common

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Two Sets of Guidelines

- IDSA
  - http://www.idsociety.org/lyme
- ILADS
  - http://www.ilads.org/files/ILADS_Guidelines.pdf

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Erythema Chronicum Migrans

- Etiology
  - Caused by a spirochete called Borrelia Borgdorferi
  - Transmitted by the bite of certain ticks (deer, white-footed mouse)
  - 1st cases were in 1975 in Lyme, Connecticut
  - Affects many systems
  - Children more often affected than adults

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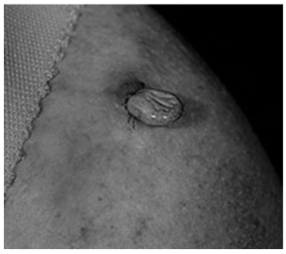
This is NOT a Lyme Bearing Tick



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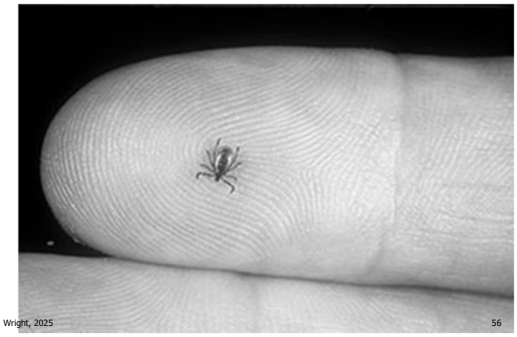
Lyme Bearing Tick



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Erythema Chronicum Migrans

- Symptoms
  - 3-21 days after bite
  - Rash (present in 72-80% of cases)-slightly itchy
  - Lasts 3-4 weeks
  - Mild flu like symptoms (50% of time)
  - Migratory joint pain
  - Neurological and cardiac symptoms
  - Arthritis, chronic neurological symptoms

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Erythema Chronicum Migrans

- Signs
  - Rash:
    - Begins as a papule at the site of the bite
    - Flat, blanches with pressure
    - Expands to form a ring of central clearing
    - No scaling
    - Slightly tender
  - Arthralgias:
    - Asymmetric joint erythema, warmth, edema
    - Knee is most common location

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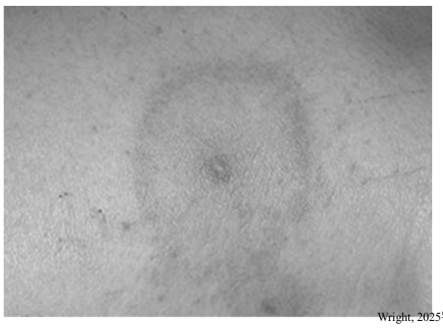
Erythema Migrans



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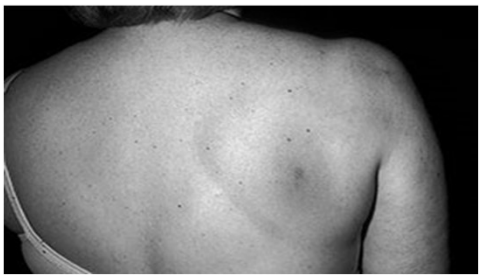
Erythema Migrans



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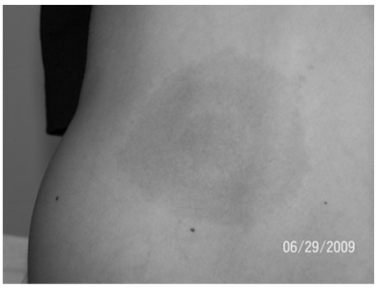
Summer 2009



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Erythema Chronicum Migrans

- Signs
  - Systemic symptoms
    - Facial palsy
    - Meningitis
    - Carditis

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Erythema Chronicum Migrans

- Plan
  - Diagnostic:
    - Sed rate: usually normal
    - Lyme Titer
      - IGM: Appears first: 3-6 weeks after infection begins
      - IGG: Positive in blood for 16 months
      - High rate of false negatives early in the disease
    - Lyme Western Blot

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Per ILADS

- "Diagnosis of Lyme disease by two-tier confirmation fails to detect up to 90% of cases and does not distinguish between acute, chronic, or resolved infection"
- "The Centers for Disease Control and Prevention (CDC) considers a western blot positive if at least 5 of 10 immunoglobulin G (IgG) bands or 2 of 3 immunoglobulin M (IgM) bands are positive. However, other definitions for western blot confirmation have been proposed to improve the test sensitivity. In fact, several studies showed that sensitivity and specificity for both the IgM and IgG western blot range from 92 to 96% when only two specific bands are positive"
  - Lyme specific bands: 31, 34, and 39

http://www.ilads.org/lyme_disease/treatment_guidelines_clearing_ilads.html Accessed 12-20-2013

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Erythema Migrans: IDSA 2020

- 10 days of doxycycline is sufficient
- For children or those unable to tolerate doxycycline, 14 days of amoxicillin or cefuroxime is recommended

https://www.healio.com/news/infectious-disease/20201204/qa-lyme-disease-guidelines-updated-for-first-time-in-14-years accessed 01-19-2021

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Prophylactic Treatment

- Prophylactic antibiotic therapy should be given only to adults and children within 72 hours of removal of an identified high-risk tick bite
  - If a tick bite cannot be classified with a high level of certainty as a high-risk bite, a wait-and-watch approach is recommended.
  - A tick bite is considered to be high-risk only if it meets the following 3 criteria: the tick bite was from (a) an identified *Ixodes* spp. vector species, (b) it occurred in a highly endemic area, and (c) the tick was attached for ≥36 hours

https://onlinelibrary.wiley.com/doi/10.1002/art.41562

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ILADS

- Believe in Chronic Lyme Disease
- Treatment may be continued as long as needed to treat symptoms
- Alternative recommendations are made:
  - Doxyccyline 100-200 mg bid or TCN 500 mg 1 bid
  - Clarithromycin 500 mg 1 po bid along with hydroxychloroquine 200 mg 1 two times daily
  - Azithromycin 500 mg once daily

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Necrotizing Fasciitis

- Severe, deep, necrotizing infection
- Involves subcutaneous tissue down into the muscles
- Spreads rapidly
- Caused by Group A Beta Hemolytic Strep, Staph, Pseudomonas, E Coli
- Mortality: 8-70% depending upon organism and rapidity of treatment
- Disfigurement common

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Necrotizing Fasciitis

- Symptoms
  - Usually occurs after surgery, traumatic wounds, injection sites, cutaneous sores
  - Generalized body aches, fever, irritability
  - Key: Red area of skin that is severely painful (It is out of proportion to findings)
  - Leg is most common location
- Physical Examination Findings
  - 1st appears as local area of redness that looks like cellulitis

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Necrotizing Fasciitis

- Physical Examination Findings
  - Tender
  - Bullae with purulent center which ruptures quickly
  - Black eschar appears and the pain decreases
  - Systemic symptoms begin

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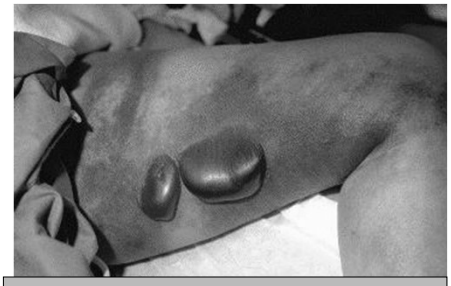
Necrotizing Fasciitis



Bullae: Below these lesions is necrotic tissue

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Necrotizing Fasciitis

- Plan
  - Diagnosis: Culture of wounds, blood cultures, biopsy of area, CBC with differential, urinalysis
  - Therapeutic: HOSPITAL ADMISSION
  - Educational: Good wound hygiene

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Stevens-Johnson Syndrome

- Distinct, acute hypersensitivity syndrome
- Many causes: Drugs, bacteria, viruses, foods, immunizations
- Also known as Bullous Erythema Multiforme
- Stevens-Johnson Syndrome is thought to represent the most severe of the erythema multiforme spectrum
- Two stages
  - Prodrome which lasts 1-14 days
  - 2nd stage: mucosal involvement where at least 2 mucousal surfaces are involved (oral, conjunctival, urethral)

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Stevens-Johnson Syndrome

- Mortality: 5-25%
- Long-term complications are common
- Face almost always involved and mouth always involved
- Entire course: 3-4 weeks
- Most common in children aged 2 - 10

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Stevens-Johnson Syndrome

- Symptoms
  - Constitutional symptoms such as fever, headache, sore throat, nausea, vomiting, chest pain, and cough
- Physical Examination Findings
  - Vesicles that are extensive and hemorrhagic
  - Bullae rupture leaving ulcerations which are covered with membranes
  - Leave large areas of necrosis and skin peels
  - Lesions on the conjunctiva

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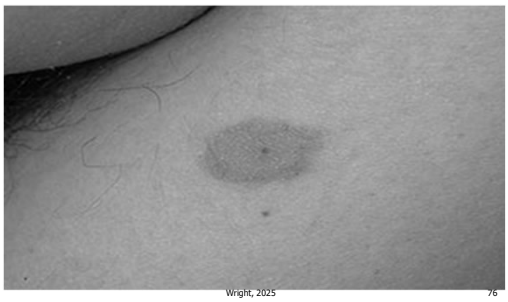
Erythema Multiforme



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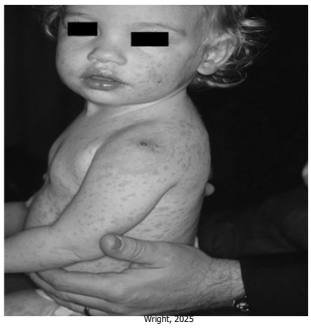
Erythema Multiforme



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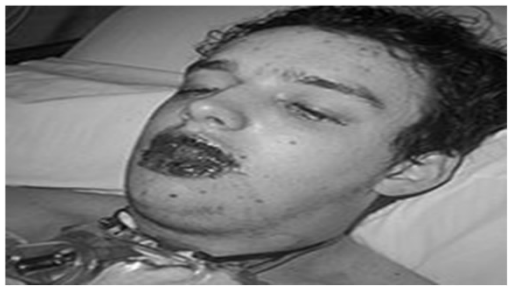
Stevens-Johnson Syndrome



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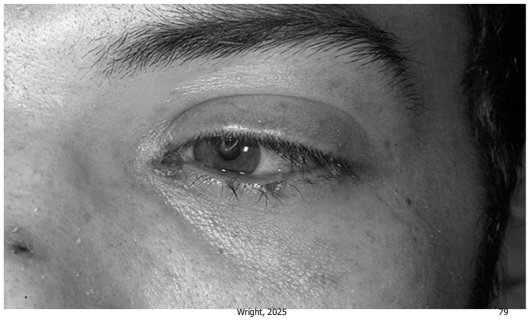
Stevens-Johnson Syndrome



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Stevens-Johnson Syndrome

- Plan
  - Must rule-out staphylococcal scalded skin syndrome
  - Therapeutic: HOSPITALIZATION with early opthamological evaluation
  - Steroids are controversial
  - Others in family may be genetically susceptible
  - Never take these medications again

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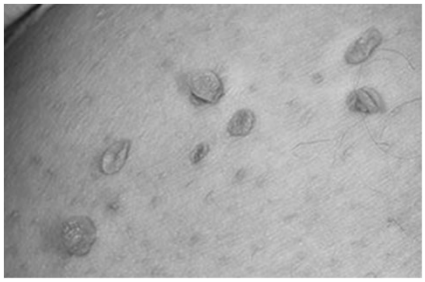
Diagnosis?
Linked with_____?



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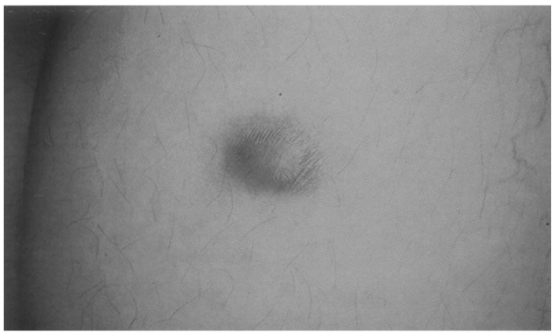
Dermatofibroma



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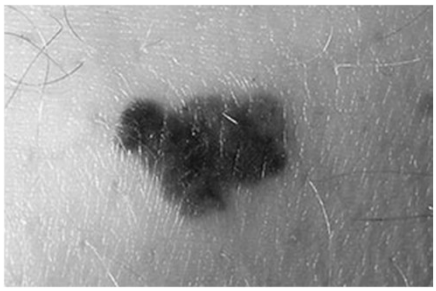
Malignant Melanoma



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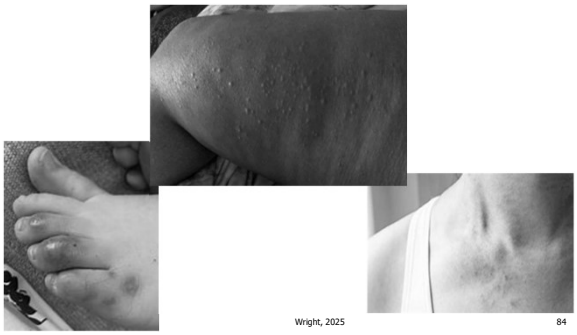
What Do These Have In Common?



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Thank You!

I Would Be Happy To Entertain Any Questions

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Wendy L. Wright,
DNP, ANP-BC, FAANP, FAAN, FNAP

email: WendyARNP@aol.com

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