

Dermatology



Eczema (Atopic Dermatitis) (1)

- Eczema is associated with asthma and allergic rhinitis
- Erythema, crusts, fissures, pruritis, excoriations, lichenification
- Chronic pruritic skin condition
- Infants: Blisters, crusts, exfoliation (face, scalp, extremities), 1st few months. Resolves by age 2
- Adults: Dryness and thickening in antecubital and popliteal fossae, neck
- Positive family history, worse in winter (dry weather)

Eczema (Atopic Dermatitis) (2)

- Treatment: corticosteroids, antipruritics
- Complications
 - 2° bacterial infection (treat with antibiotics)
 - Eczema herpeticum: Widespread HSV infection in patients with underlying atopic dermatitis

Eczema (Atopic Dermatitis)



Eczema (Atopic Dermatitis)



Eczema (Atopic Dermatitis)



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Eczema (Atopic Dermatitis)



Allergic Contact Dermatitis

- Delayed type hypersensitivity
- Poison ivy, poison oak, poison sumac (linear extension)
- Contact with metal jewelry (nickel)
- Hair dyes, detergents
- Erythema, pruritus, vesicles, bullae
- Blister fluid contains no antigen
- Corticosteroids for severe cases

Contact Dermatitis

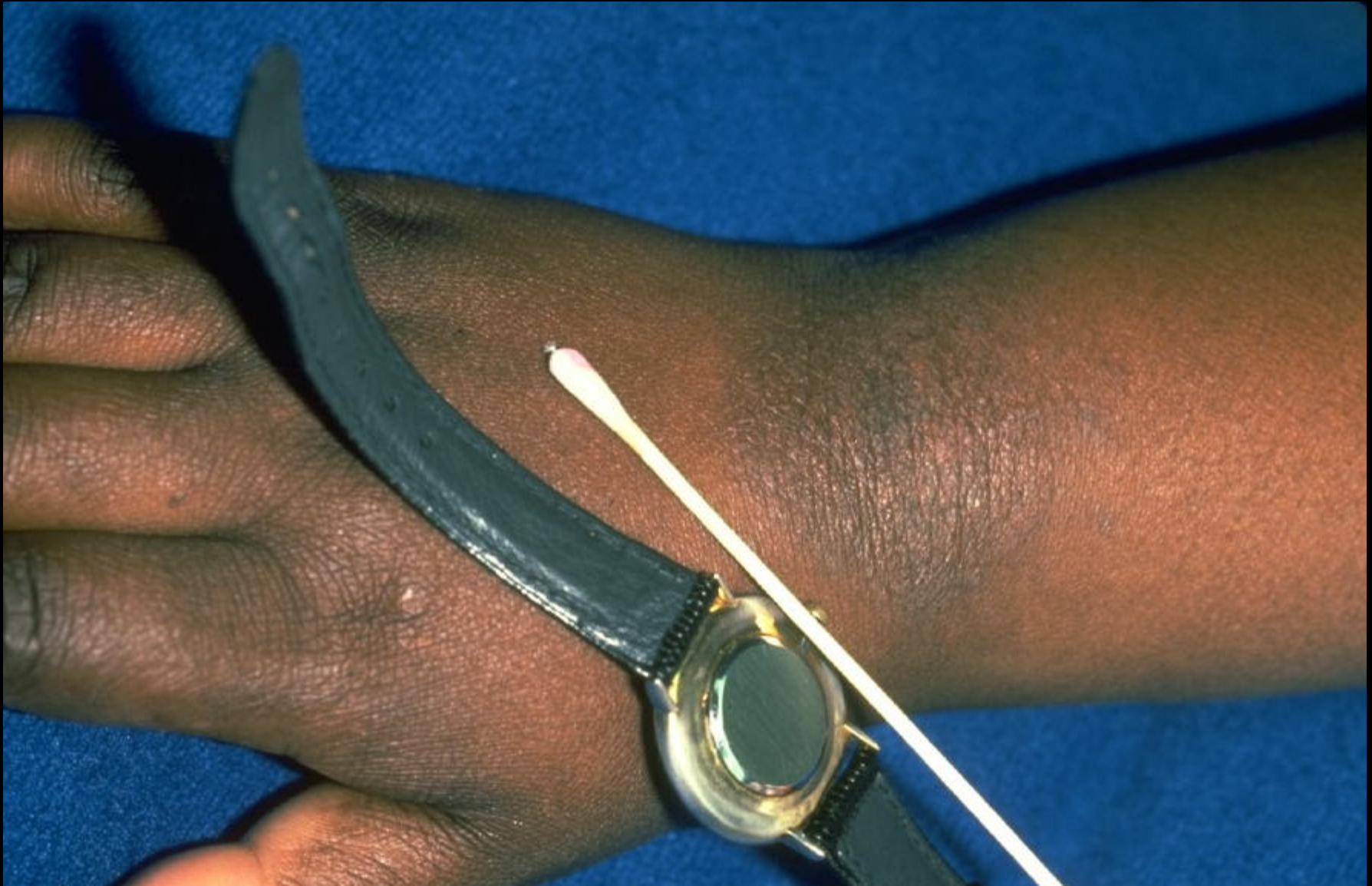


Contact Dermatitis



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Contact Dermatitis



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Contact Dermatitis



Poison Ivy



Exfoliative Dermatitis (1)

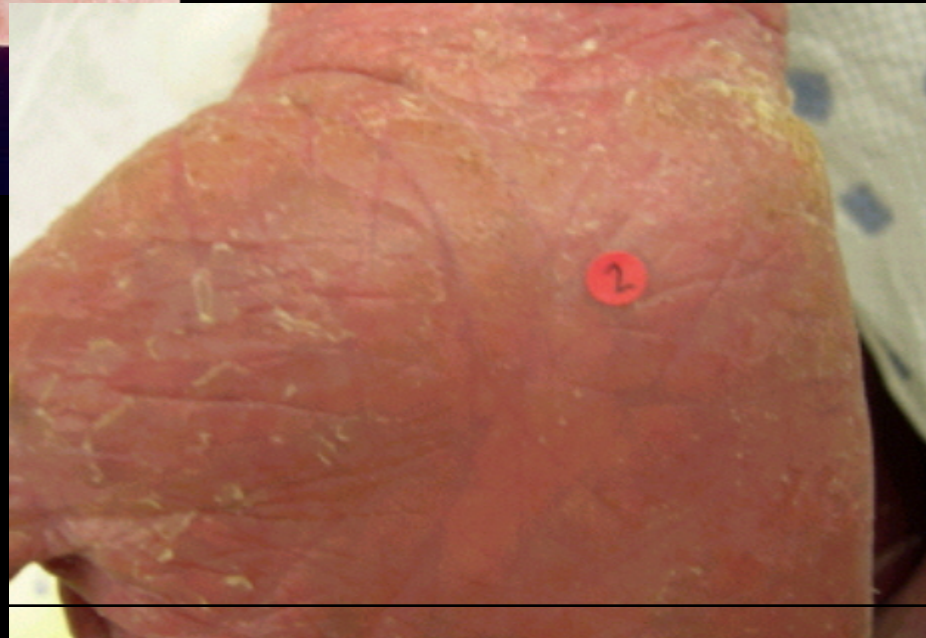
- Generalized dermatitis, diffuse, scaly, warm, erythematous, non-tender, pruritic
- Leads to exfoliation
- Most are secondary to underlying disease
- Involves most or all of skin
- Flares of pre-existing skin disease (psoriasis, atopic dermatitis etc.)

Differential: SSSS, EM, TEN ,TSS

Exfoliative Dermatitis (2)

- Response to drugs, chemicals, systemic disease or malignancy (lymphoma, leukemia)
- May be acute, subacute or chronic
- Typically males over 40
- Complications are 2° to disruption of epidermis
 - Hypothermia, volume loss, electrolyte abnormalities, 2° skin infection
- Important to diagnose underlying cause
- Admit, IV, steroids for severe cases

Exfoliative Dermatitis



Psoriasis

- Chronic papulosquamous eruption
 - Due to more rapid cell cycle
- Erythematous plaques with white (silver) scales
- Extensor surfaces of elbows, knees, scalp, palms, soles
- Pitting of the nails
- May be accompanied by psoriatic arthritis
- Treatment: steroids, tar, UV light, methotrexate

Psoriasis



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Psoriasis



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Psoriasis



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Seborrheic Dermatitis (Dandruff)

- White, yellow, waxy scales with erythema
- Localized to hairy skin areas
- Scalp, eyebrow, ear, axilla, groin (wherever there are sebaceous glands)
- *Malassezia furfur* (a fungus) is associated
- Not contagious
- Frequent recurrences, worse in cold weather
- May be severe or generalized in HIV positive patients
- Treatment: Rotating antidandruff shampoos, ketoconazole shampoo or cream; steroids are discouraged

Seborrheic Dermatitis



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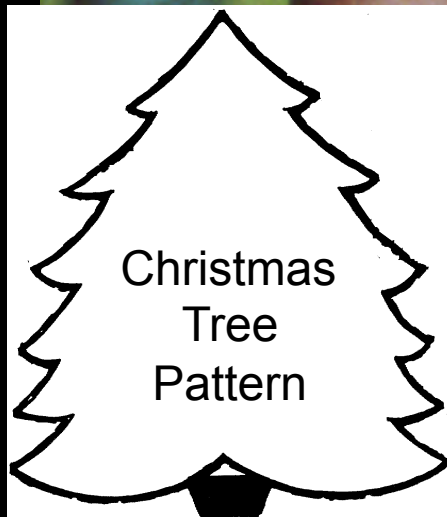
Seborrheic Dermatitis



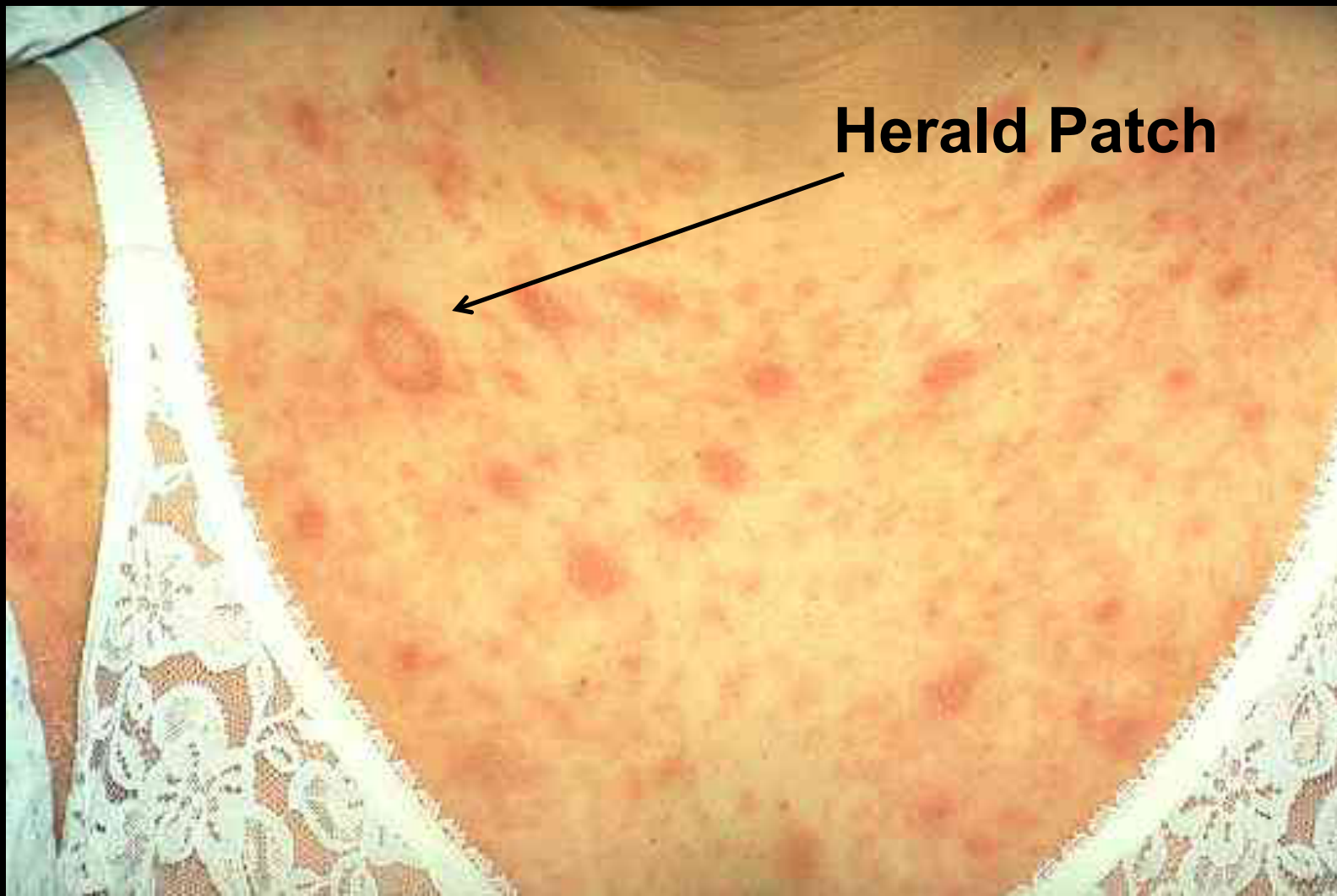
Pityriasis Rosea

- Children, young adults, spring and fall
- Etiology unknown
- No epidemics, not contagious
- Rash evolves over weeks
 - Herald patch: Single salmon-colored lesion with raised border on trunk, 1–5 cm
 - 1-2 weeks after herald patch: Widespread eruption, pink maculopapular oval patches that follow the ribs (“Christmas tree” pattern)
- Rule out syphilis (if clinically indicated), drug reaction
- Treatment: Symptomatic, antihistamines
- Resolution in 2-10 weeks

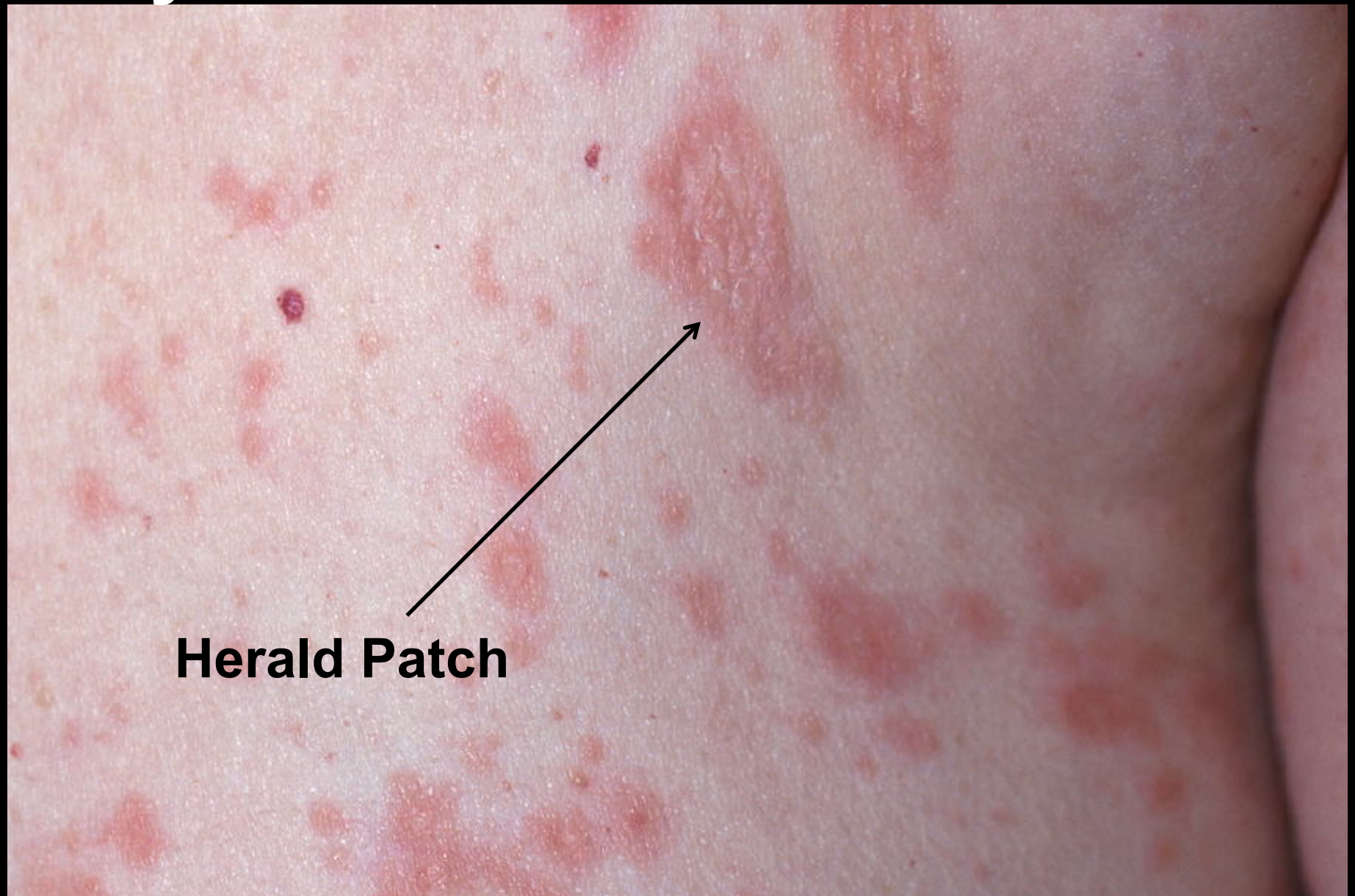
Pityriasis Rosea



Pityriasis Rosea



Pityriasis Rosea



Herald Patch

Petechiae / Purpura

- Deposits of blood under skin
- Non-blanching
- Petechiae <3 mm, purpura >3 mm
- Non-palpable: Platelet disorder, thrombocytopenia
- Palpable purpura = Vasculitis
- Treatment: Antibiotics, steroids, plasmapheresis (depends on etiology)

Petechiae / Purpura



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Petechiae / Purpura



Urticaria

- Diffuse pruritus, wheals, hives (superficial dermis)
- Etiology is unknown most of time
- IgE → mast cells → histamine release
- Usually self-limited
- Treatment: Antihistamines, steroids, antipruritics, H₂ blockers, epinephrine

Urticaria



Urticaria



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Angioedema (1)

- Bradykinin-mediated
 - ↑ Vasodilation
 - ↑ Vascular permeability
- Edema of the deeper dermis
- Common cause: ACE inhibitors
 - ACE inhibitors decrease metabolism of bradykinins
 - Can occur early or late
 - 2/3 occur in hours
 - 1/3 in months to years

Angioedema (2)

- Familial - associated with C₁ esterase inhibitor deficiency
 - C₁ esterase inhibitor inhibits complement cascade
 - Deficiency leads to increased bradykinin
- Edema of face, extremities, bowel wall
- Responds to fresh frozen plasma and C₁ esterase inhibitor concentrate
- Autosomal dominant (positive family history)

Angioedema



Erysipelas

- Infants, toddlers, elderly
- Usually Group A Strep, occasionally Staph
- Superficial cellulitis, lymphangitis
- Localized (face, legs, ear)
- Butterfly facial rash (warm and tender)
- Raised, well demarcated border
- Treatment: PCN, dicloxacillin, erythromycin

Erysipelas



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Erythema Nodosum (EN)

- Painful, non-ulcerative, violaceous nodules (localized vasculitis) on anterior tibia, arms, trunk
 - Looks like erythema, feels like nodes
- EN is often a marker for systemic disease
 - Drug reaction (oral contraceptives, sulfa, PCN)
 - Systemic infection (TB, fungal)
 - Sarcoid
 - Inflammatory bowel disease (ulcerative colitis)
 - Malignancy (leukemia, lymphoma)
- Most common in women 30-50
- Resolves in 3-6 weeks
- Treatment is directed at underlying disease

Erythema Nodosum



Erythema Nodosum



Drug Eruption

- Consider in any acute, symmetrical eruption
- Common: PCN, cephalosporins, sulfa
- Usually disappears within 1-2 weeks
- Immediate hypersensitivity: IgE (urticaria)
- Delayed hypersensitivity: IgM (serum sickness)
- Urticaria, morbilliform rash (discrete red-brown papules coalesce to erythema), erythema multiforme
- Treatment: Discontinue drug, antihistamines, steroids
- Complications: Stevens-Johnson syndrome (mucosal and cutaneous), Severe bullous (form can be fatal)

Erythema Multiforme

- Minor (erythema multiforme) → EM major (Stevens-Johnson) → EM maximum (TEN)
- Hypersensitivity reaction
 - Infection (Mycoplasma, Herpes), malignancy, drugs
 - Sulfa, oral hypoglycemics, anticonvulsants, PCN (memory aid: **SOAP**)
- Palms, soles, extensor surfaces
- **“Bull’s eye” or “target” lesions**
- Treatment: Remove offending agents; symptomatic for minor forms; major forms may need resuscitation, ICU admission

Erythema Multiforme



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Erythema Multiforme



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Stevens-Johnson Syndrome

- Severe bullous form of EM, 10-30% of BSA, mucosal involvement, can be fatal
- Bullous cutaneous lesions, mucositis, stomatitis, conjunctivitis, crusted nares
- Children, adolescents, males
- Serious, potentially fatal form of E. multiforme
 - Hypersensitivity reaction
 - Severe reaction to medication: Sulfonamides, PCN, barbiturates, phenytoin, tetracycline, thiazides

Stevens - Johnson Syndrome



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Stevens - Johnson Syndrome



Toxic Epidermal Necrolysis (TEN) 1

- Erythema multiforme, Stevens-Johnson syndrome and TEN
 - Probably variants of the same disease process. The difference is in severity and body surface area affected
 - **TEN affects >30% of BSA**
- Exposure to drugs, chemical agents, infections
 - Sulfa, PCN, barbiturates, phenytoin, allopurinol, NSAIDs
 - Mycoplasma, HSV
- Toxic patient, large bullae, mucous membranes, widespread systemic manifestations

Toxic Epidermal Necrolysis (TEN) 2

- Separation of dermal-epidermal junction
- Nikolsky's sign: Skin peels off with light pressure
- Older age group has high mortality
- Increased mortality from dehydration and 2° infection
- Primary causes of death: Sepsis, pneumonia
- Treatment: Admit to ICU

Toxic Epidermal Necrolysis



Toxic Epidermal Necrolysis



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Toxic Epidermal Necrolysis



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Staphylococcal Scalded Skin Syndrome

- Usually children <2 years old
- Staph aureus exotoxin
- Fever, scarlatiniform rash followed by exfoliation
- Nikolsky's sign: Skin peels off with light pressure
- Antibiotics (vancomycin) indicated, but do not alter cutaneous disease
- More favorable prognosis than TEN
- Steroids are contraindicated

Staphylococcal Scalded Skin Syndrome



Staphylococcal Scalded Skin Syndrome



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Pemphigus Vulgaris

- **Painful** intradermal bullae, 40-60 years old, possible autoimmune etiology
- Associated with penicillamine, captopril, phenobarbital
- Bullae appear on normal skin, often start in mouth
- Blisters are **fragile, break easily**, leave red or crusted erosions
- Mucus membranes are frequently involved
- Small flaccid bullae → erosions, ulcerations
- **Nikolsky sign positive** (like TEN)
- **Can be lethal**: Mortality due to secondary infection, dehydration
- Treatment: Steroids, admission, biopsy

Pemphigus Vulgaris



Pemphigus Vulgaris



Bullous Pemphigoid

- Chronic benign bullous eruption. Autoimmune disease
- Risk factors: Age > 60, female, malignancy, furosemide (Lasix)
- Begins with urticarial lesions, then tense blisters up to 10 cm
- Large bullae (2-5 cm) arise from erythematous skin
- Mucus membranes infrequently involved
- Nikolsky sign negative
- IgE deposited on basement membrane
- Course is usually benign. Mortality much less than in pemphigus

Bullous Pemphigoid



Pemphigus Vulgaris



- Fragile, smaller blisters
- Painful
- Can be lethal
- Positive Nikolsky's

Bullous Pemphigoid



- Tense, larger blisters
- Chronic
- Benign
- Negative Nikolsky's

Basal Cell Carcinoma

- Most common skin malignancy
- Pearly, rolled border with central ulceration
- Not a metastasizing tumor
- Slow growing, usually head and neck
- Seen only where hair follicles exist
- Cure rate 100% if found early

Basal Cell Carcinoma



Basal Cell Carcinoma



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Malignant Melanoma

- Increasing incidence
- Ages 30-50
- Risk factors: Adulthood, dysplastic nevi, family history of melanoma, fair skin, UV exposure, congenital nevi
- Account for majority of deaths due to skin cancer
- Sun exposed areas (head, neck, trunk)
- The greater the depth, the worse the prognosis
- Metastases are common

Malignant Melanoma



Malignant Melanoma



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Squamous Cell Carcinoma

- Second most common cutaneous malignancy
- Common in elderly males, fair skin, sun exposure
- Face, lips, ears, tongue, hands
- Rapid growth, central ulcer, raised and indurated border
- Metastases occur early
- Treatment: Excisional surgery, radiation

Squamous Cell Carcinoma



Squamous Cell Carcinoma



Tinea (Dermatophytosis) (1)

- Tinea capitis (scalp) and tinea barbae (beard)
 - Bald, broken hair
 - Scaly patch
 - Edematous nodules and pustules (kerion)
- Tinea corporis (ringworm)
 - Non-hairy parts of the body, outward spreading, annular lesion, clear center
- Tinea pedis (athlete's foot)
- Tinea cruris (jock itch)
 - Groin and inner thigh (sharp demarcation)
 - Scrotum not involved

Tinea (Dermatophytosis) (2)

- Causes: Trichophyton, Microsporum, Epidermophyton
- Treatment: Antifungal (topical or oral)

Tinea Capitis



Corporus



Tinea Cruris



Tinea Versicolor

- Hypopigmented or hyperpigmented circular, scaly patches
- Poor hygiene, moisture
- Malassezia furfur
- Treatment: Selenium shampoo, ketoconazole shampoo or cream



Spirochetes



Leptospirosis

- Pathogenic spirochete
- Reservoirs: Rats, cattle, pigs, dogs
- Skin contact with urine of infected animal
- Contaminated water
- Hepatitis, nephritis, meningitis, coagulopathy
- Weil's disease (severe form): Jaundice, subconjunctival hemorrhage, hepatitis, DIC
- Risk of death from hepatorenal failure
- Diagnosis by serology
- Treatment: Pen G, tetracycline, doxycycline

Lyme Disease (1)

- Borrelia burgdorferi (spirochete)
- Transmitted by bites of Ixodes ticks
- Tick reservoirs: Rodents, rabbits, deer
- Most do not recall tick bite
- Fever, myalgias, arthralgias, headache
- **3 stages**
 - Localized (rash)
 - Disseminated (neurologic and cardiac)
 - Persistent (arthritis)

Lyme Disease (2)

- **Erythema migrans**: Annular, expanding erythematous lesion with central clearing (spares palms, soles)
- Neuro: CN VII palsy, meningitis, peripheral neuropathy
- Cardiac: Myocarditis, pericarditis, heart block
- Diagnosis: ELISA (screening); Western blot
- Treatment: Doxycycline, amoxicillin, cefuroxime; macrolides if others not tolerated
- Probable risk = Test
- Probable disease = Treat

Lyme Disease



Lyme Disease



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Lyme Disease



Meningococemia (1)

- *N. meningitidis* (encapsulated Gram negative diplococcus)
- Broad spectrum of disease
 - Bacteremia, sepsis, meningitis
- Fever, myalgias, headache, rash
- 1-2 mm petechiae → purpura
- Poor prognosis if petechiae, hypotension, $T > 40^{\circ}\text{C}$, decreased platelets, no meningismus or leukocytosis

Meningococchemia (2)

- Prophylaxis: Close contacts, nursing home, dormitory, family
 - Prophylaxis is not indicated for brief hospital encounter (ER patient, no close contact)
- Rifampin, Cipro for prophylaxis
- Diagnosis: CSF and blood serology, cultures
- Treatment: PCN, chloramphenicol, isolation

Waterhouse-Friderichsen syndrome:
shock, petechiae, adrenal infarction

Meningococccemia



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Meningococccemia



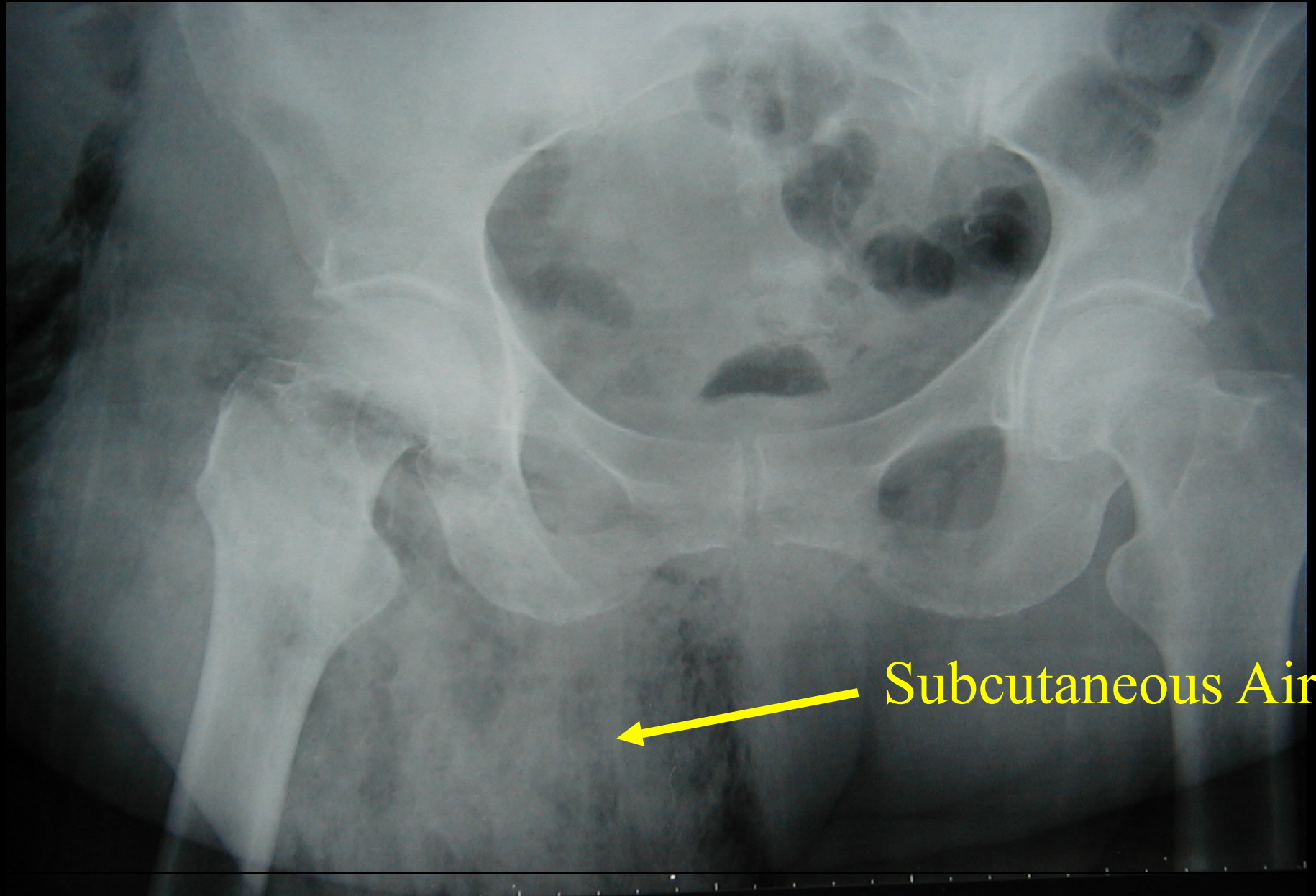
Necrotizing Soft Tissue Infections(1)

- Virulent, toxin-producing bacteria
- Often seen with IVDU
- Widespread fascial and muscle necrosis, sparing of skin
 - Crepitant anaerobic cellulitis (necrotic soft tissues, subcutaneous gas)
 - Myonecrosis (clostridial, non-clostridial)
 - Necrotizing fasciitis (rapid dissection and necrosis in superficial and deep fascial planes)

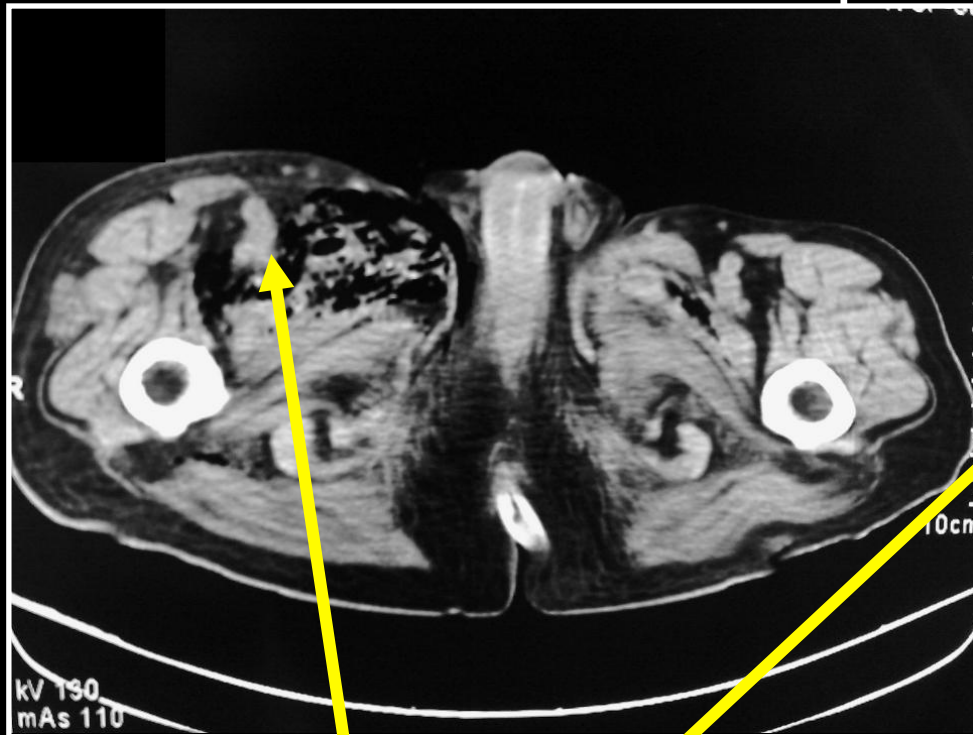
Necrotizing Soft Tissue Infections(2)

- Necrotizing fasciitis
 - “Flesh-eating” bacteria
 - Strep, clostridia, polymicrobial
 - **“Pain out of proportion”** is hallmark
 - Surgical emergency
 - Pen G + imipenem, or amp + gent + clinda
 - Fournier's gangrene: Necrotizing fasciitis involving scrotum, vulvar or perianal skin

Necrotizing Soft Tissue Infections



Necrotizing Soft Tissue Infections



Subcutaneous Air

Methicillin Resistant Staph aureus (MRSA) (1)

- Hospital acquired MRSA
 - Hospitalized, dialysis, IVDU, nursing home
- Community acquired MRSA
 - Skin and soft tissue infections
 - High prevalence in many areas
 - Resistant to beta-lactam antibiotics
 - Milder infections: Trimethoprim/
sulfamethoxazole or clindamycin
 - Serious infections: Vancomycin or linezolid

Methicillin Resistant Staph aureus (MRSA) (2)



Toxic Shock Syndrome

- Staph aureus exotoxin
- Prolonged tampon use, packed surgical wounds, nasal packing
- Menstruating females, postpartum, also in males
- Fever, hypotension
- Rash: Diffuse, erythematous, nonpruritic, macular
- **Involvement of at least three systems**
 - Renal, hepatic, hematologic, GI, musculoskeletal, mucosal, CNS
- Treatment: Fluids, remove source, antibiotics
- Group A Strep variant (higher mortality)

Tick-Borne Infections

Rocky Mountain Spotted Fever (RMSF)(1)

- Rickettsia rickettsii (obligate intracellular bacterium)
- Bite from infected tick
- Most cases seen in April-September (tick season)
- Commonly seen in children <15
- Endemic in Southeastern US
- Fever, headache, myalgias
- Small pink macules → petechiae, purpura (from a vasculitis) / (wrists, ankles)

Rocky Mountain Spotted Fever (RMSF)(2)

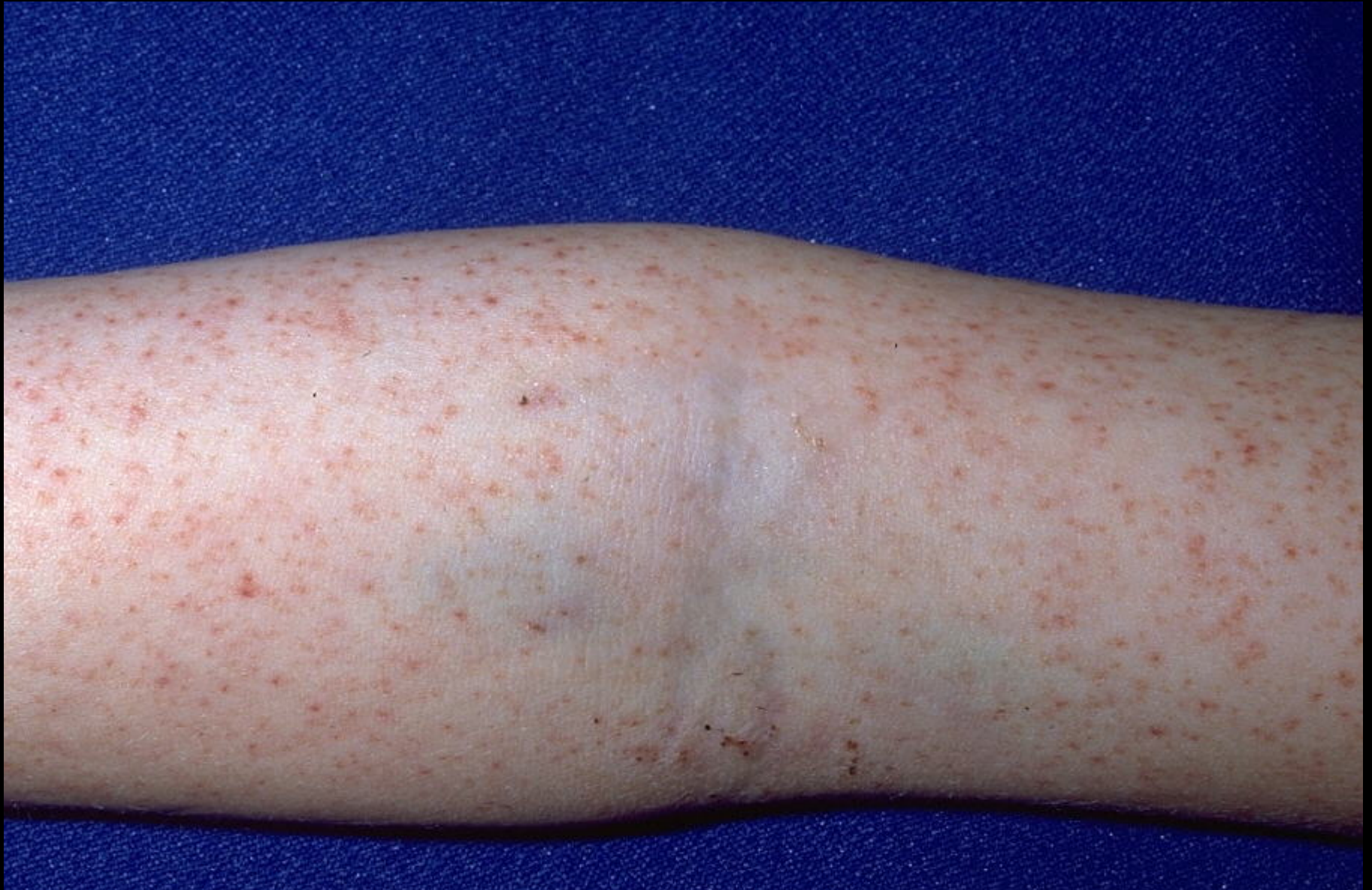
- Rash begins on extremities, wrists, ankles, palms and soles
- Spreads up trunk, saves face
- Lab: WBC count normal, left shift, mild anemia, moderate thrombocytopenia, hyponatremia
- Diagnosis: Clinical (don't wait for serology tests)
- Treatment: Doxycycline preferred, chloramphenicol
- Complications (due to vasculitis)
 - DIC
 - Loss of limbs
 - CNS
 - Lungs
 - Kidneys

Rocky Mountain Spotted Fever



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Rocky Mountain Spotted Fever



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Ehrlichiosis

- Clinical presentation similar to rocky mountain spotted fever
- Transmission through tick bite
- Two types
 - HME: human monocytic
 - HGE: human granulocytic
- Fever, headache, myalgias
- Maculopapular rash
- Leukopenia, thrombocytopenia, hyponatremia, anemia, ↑ LFTs
- Diagnosis: Clinical suspicion
- Treatment: Doxycycline, tetracycline, chloramphenicol
- Complications: DIC, renal failure, coma, death

Babesiosis

- Tick-borne hemolytic disease, blood transfusions
- Intra-erythrocyte protozoan parasite
- Endemic to northeastern USA
- Fever, chills, fatigue, malaise
- Hepatosplenomegaly, jaundice
- Peripheral blood smear -- parasites in RBCs
- Usually mild unless asplenic, elderly, or immunosuppressed
- Treatment: Quinine plus clindamycin;
Atovaquone plus azithromycin

Viral Infection

Cytomegalovirus (CMV)

- A member of the herpes virus group (dormant until reactivated)
- The most common of the TORCHES infections
- Congenital: Chorioretinitis, jaundice, hepatosplenomegaly, deafness, rash
- Acquired: Asymptomatic or mono-like illness
- Immunocompromised: CMV retinitis, nephritis, pneumonitis, colitis. Carries high mortality
- Diagnosis: Atypical lymphocytosis, ELISA
- Treatment: IV ganciclovir or foscarnet

TORCHES

Toxoplasmosis, Rubella, CMV, Herpes, Epstein-Barr, Syphilis
Organisms associated with congenital transmission

Congenital CMV



Cytomegalovirus (CMV)



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Herpes Simplex

- HSV-1: Stomatitis, fever, decreased fluid intake, oral lesions, corneal ulcers (steroids are contraindicated)
- Herpetic whitlow: Vesicles grouped on digits, non-surgical treatment, often misdiagnosed
- HSV-2: Painful vesicles of genitalia and anus
- Diagnosis: Viral culture, PCR
- Complications: Congenital transmission (TORCHES), encephalitis
- Treatment: Acyclovir and analogs, vidarabine

Herpes Simplex



Herpetic Whitlow



Herpes Simplex – Genital



Herpes Zoster (Shingles)

- Varicella-zoster virus reactivation
- **Painful vesicles in dermatome distribution**
- Cranial nerve involvement
 - HZ ophthalmicus: Ophthalmic branch of CN V, lesion seen on tip of nose (**Hutchinson's sign**), vision- threatening
 - Ramsay Hunt: CN VII, zoster presenting with facial nerve palsy, ear pain
- Complications: Pneumonia, meningitis, post-herpetic neuralgia, 2° infection, dissemination
- Treatment: Acyclovir and analogs, prednisone

Herpes Zoster



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Herpes Zoster



Herpes Zoster



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Acquired Immune Deficiency (1)

- HIV types 1, 2 (RNA retroviruses)
- Virus multiplication in CD4 lymphocytes
- CDC classification:
 - Group I: Acute mono-like infection → seroconversion
 - Group II: Asymptomatic infection
 - Group III: Lymphadenopathy >3 months
 - Group IV: AIDS (CD4 <200, opportunistic infections)

Acquired Immune Deficiency (2)

- Pneumocystis (PCP) is the most frequent infection
 - CXR: bilateral infiltrates, hypoxemia
 - Treatment: TMP/SMX, steroids
- Cryptococcal meningitis
 - Most common CNS fungal infection
 - Diagnosis: CSF (India ink, cryptococcal antigen)
 - Treatment: amphotericin B
- Toxoplasmosis
 - Most common cause of encephalitis
 - Diagnosis: CT (ring-enhancing lesions)
 - Treatment: pyrimethamine, sulfadiazine
- Oral candida is most common GI tract infection

Oral Candidiasis



Kaposi's Sarcoma

- Second most common AIDS manifestation
- Seen in men who have sex with men (MSM)
- Not a cause of significant morbidity or mortality
- Purple, painless, non-pruritic areas, flush with skin or raised strawberry-like plaques
- Persist, enlarge, coalesce, may bleed
- Extracutaneous involvement: GI tract, liver, spleen, lungs, CNS

Kaposi's Sarcoma



Kaposi's Sarcoma



Molluscum Contagiosum

- Viral infection of skin (poxvirus)
- 2-5 mm umbilicated, pink, dome-shaped papules
- Autoinoculation: Common locations are face, trunk, extremities (children), groin and genitalia (adults). Usually self-limited
- Transmission: Close personal contact, swimming pools. Sexual transmission is common in adults
- HIV/AIDS: Not uncommon, lesions can be extensive and atypical

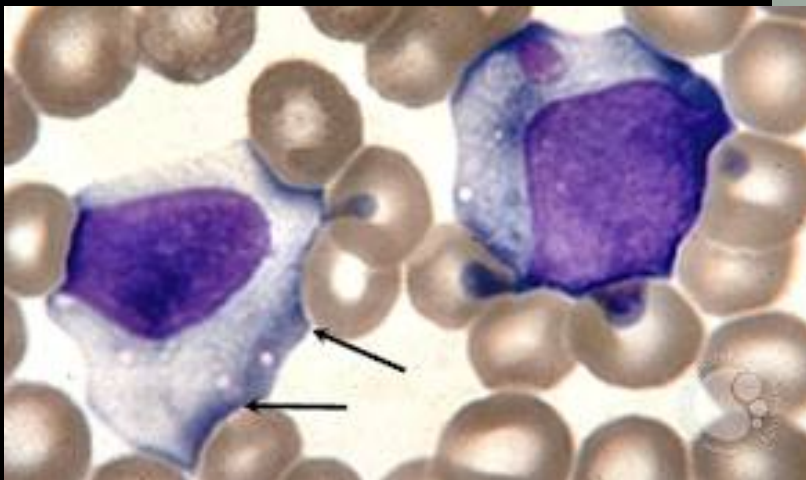
Molluscum Contagiosum



Infectious Mononucleosis

- Epstein-Barr virus (EBV)
- Common in adolescents. Usually asymptomatic in infants and children
- Fever, exudative pharyngitis, splenomegaly, lymphadenopathy, atypical lymphocytosis
- Complications: Splenic rupture, thrombocytopenia
- Diagnosis: Monospot, serology
- Amoxicillin almost always causes a maculopapular rash (may be diagnostic)
- Treatment: Rest, supportive, no contact sports

Mononucleosis



Common Pediatric Rashes

TORCHES

- A collection of congenital infections that can cause severe fetal abnormalities that are associated with a variety of dermatologic manifestations
 - **T** = Toxoplasmosis
 - **oR** = Rubella
 - **C** = Cytomegalovirus (most common)
 - **H** = Herpes simplex / HIV / Hepatitis
 - **E** = Epstein-Barr
 - **S** = Syphilis

Erythema Infectiosum (Fifth Disease)

- Human Parvovirus B19
- Fever, myalgias, diarrhea, URI symptoms, flu symptoms
- Rash: Abrupt onset, bright red cheeks (slapped cheeks), tiny papules on erythematous base, eyelids and chin spared
- “Lace-like” erythematous rash on limbs, trunk
- Complications: Arthritis, aplastic crisis (especially in sicklers)
- Can cause fetal anemia if acquired during pregnancy
- Treatment: NSAIDs

Erythema Infectiosum



Hand-Foot-Mouth Disease

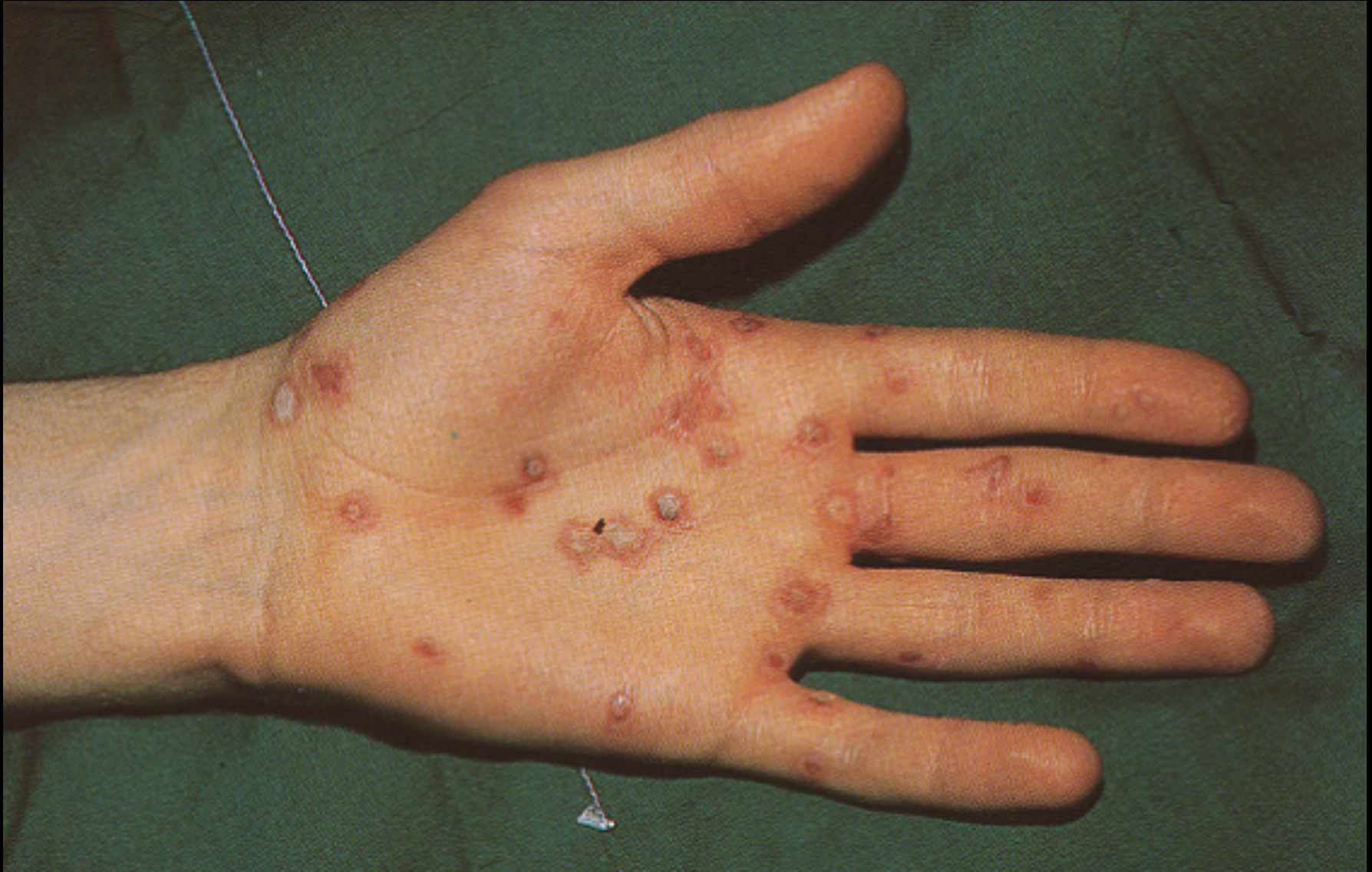
- **Coxsackie** virus (enterovirus)
- Occurs in outbreak
- Fecal-oral transmission
- Fever, sore throat, malaise, URI
- Oral lesions: Painful vesicles on anterior mouth (buccal mucosa, tongue, soft palate, gingiva)
- Skin lesions: Red papules (change to gray vesicles) on palms, soles, buttocks
- Vesicles on hands, feet, soles
- Avoid viscous lidocaine in young children because of risk of seizures

Hand Foot and Mouth Disease



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Hand Foot and Mouth Disease



Hand Foot and Mouth Disease



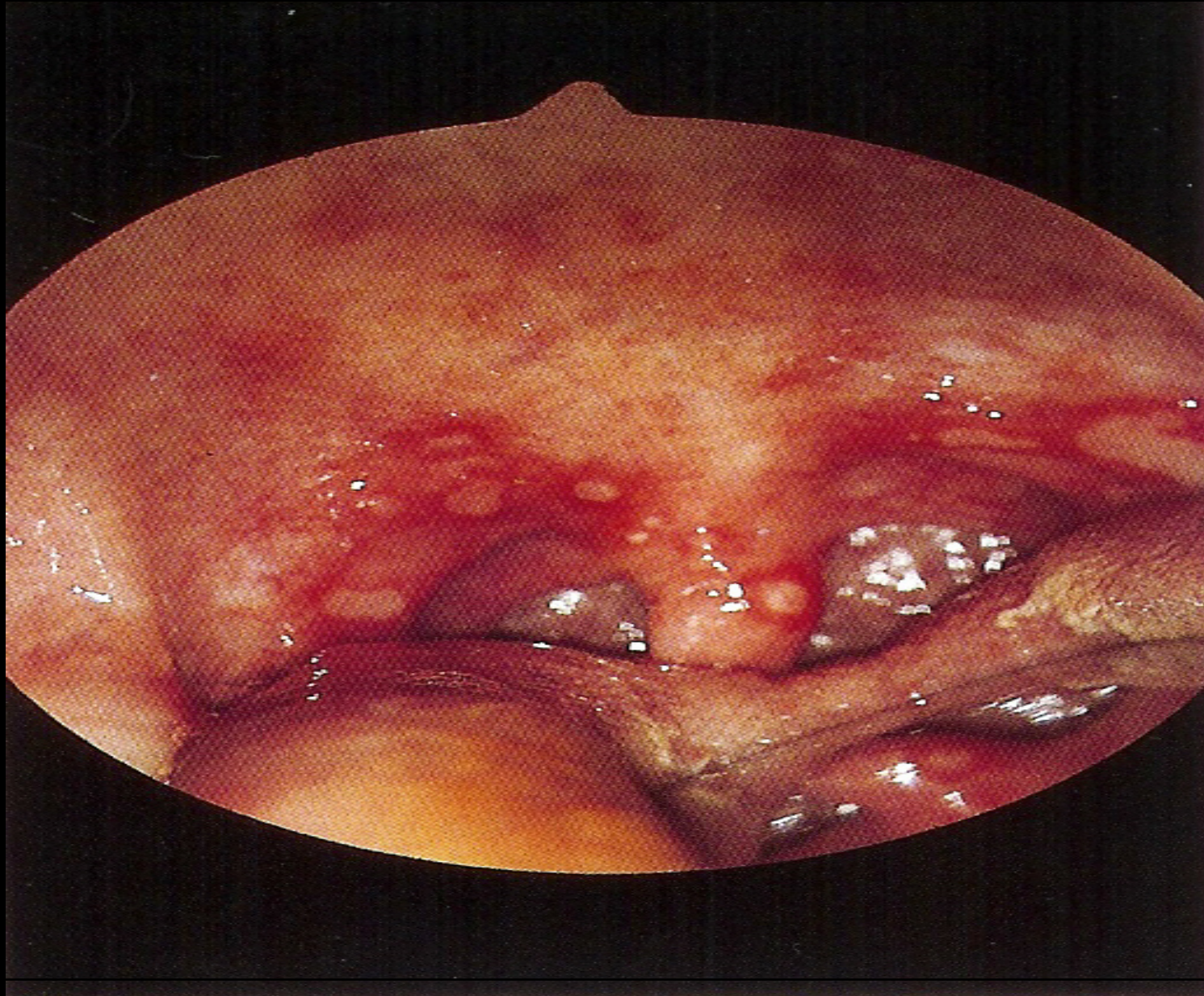
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Herpangina

- **Coxsackie** virus
- Fecal-oral transmission, preschool age, spreads to siblings
- Fever, dysphagia, drooling, vomiting, headache
- Ulcerative lesions (vesicles rupture, leaving painful ulcers on posterior pharynx, soft palate, uvula)
- Complications are rare
- Resolves in 1 week

Anterior mouth spared

Herpangina



Henoch-Schönlein Purpura

- Most common acute vasculitis affecting children
- Preceding Strep or GI infection (Salmonella, Shigella)
- Ages 2-10, abdominal pain, GI bleeding, hematuria
- Palpable purpura (legs, buttocks)
- **Thrombocytopenia is absent**
- Complications: Arthritis, glomerulonephritis, hematuria, GI bleeding, intussusception
- Renal consult
- Usually resolves spontaneously

Henoch-Schönlein Purpura



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Henoch-Schönlein Purpura



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Henoch-Schönlein Purpura



Kawasaki's Disease (1)

- Mucocutaneous lymph node syndrome
- About 2,000 cases/yr in the U.S.
- Acute, febrile, exanthematous disease of children (age 2-5, males, Asian)
- Self-limited vasculitis with predilection for coronary arteries
- Cause unknown
 - Possibly an immune response to bacterial infection, since it occurs in outbreaks

Kawasaki's Disease (2)

- Major criteria: Fever >5 days PLUS 4 of the following
 - Conjunctival injection (bilateral)
 - Strawberry tongue, fissures, lips cracked
 - Desquamation or swelling of fingers and toes
 - Erythematous rash (starts on palms and soles)
 - Enlarged (15mm or greater) cervical lymph nodes
- ↑ WBC, ↑ ESR, ↑ platelets
- Coronary artery aneurysms
- Treatment: Aspirin, IV immunoglobulin

Kawasaki's Disease



Kawasaki's Disease



Impetigo

- Staph. aureus, Strep. pyogenes
- Superficial epidermis, no fever, highly contagious
- Preschool, young adults, poor hygiene
- Red, moist vesicles
- Painless, honey-crusted lesions
- Rarely causes glomerulonephritis (antibiotics do not prevent this)
- Treatment: Dicloxacillin, cephalosporin, erythromycin, mupirocin ointment
- Bullous impetigo suggests Staph infection

Impetigo



Bullous Impetigo



Impetigo



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Impetigo



Impetigo



Rubella (German Measles)

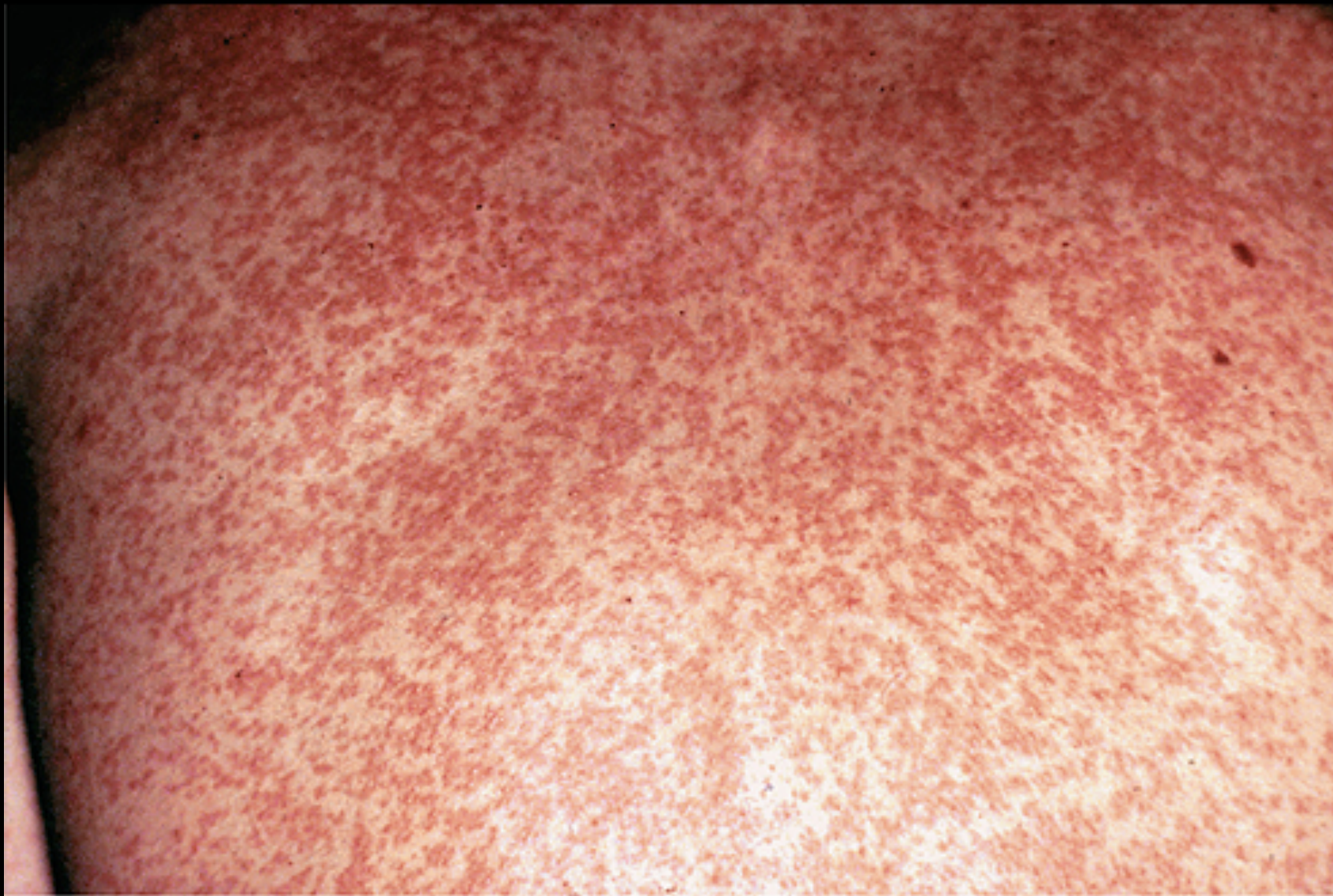
- Acute viral illness (fever, sore throat, headache)
- “Three day measles”
- Rash (pink macules spread from head to feet)

Prominent lymphadenopathy:

posterior auricular, cervical, occipital

- Complications
 - Arthritis (immune complex)
 - Encephalitis
 - 1st trimester pregnancy (congenital defects)

Rubella



Rubella



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Rubeola (Measles)

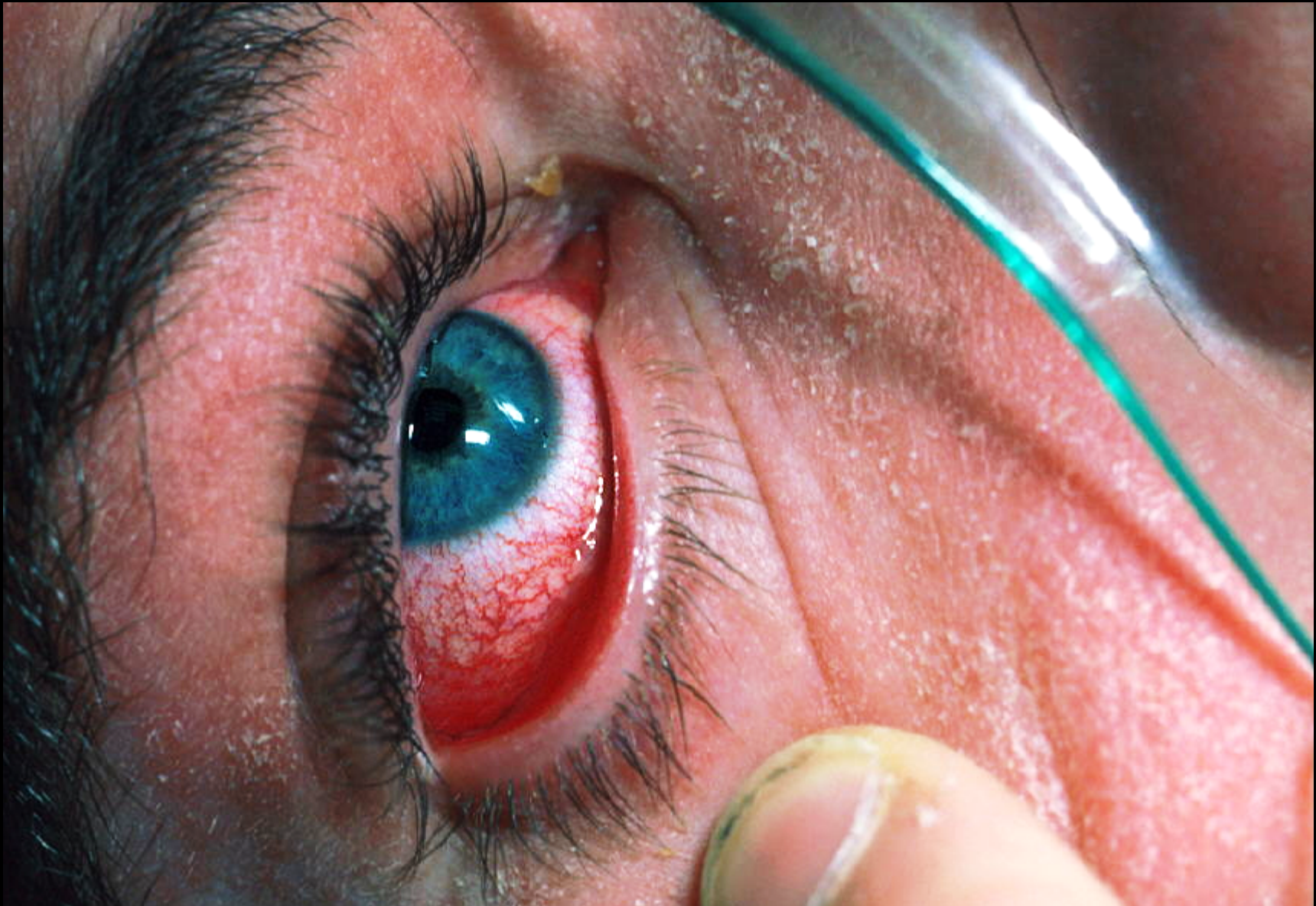
- Fever, cough, conjunctivitis, coryza (3 “C”s)
- Koplik spots: Buccal mucosa (before rash), non-tender, tiny white spots (“grains of salt”)
- Maculopapular, red-brown “morbilliform” rash spreads from head to feet
- Complications: Encephalitis, pneumonia, otitis media, conjunctivitis

Measles



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Measles



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Measles



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Koplik's Spots



Roseola Infantum

- Exanthem subitum
- Human herpes viruses (HHV) 6 and 7
- Common at ages 6-18 months
- High fever (3-4 days), then rash with defervescence
- Febrile seizures are common
- Pink macules and papules on trunk
 - May spread to neck, face, extremities

Roseola



Pediculosis (Lice)

- Head lice
 - Scalp and neck (erythema, scaling)
 - Nits (eggs) attached to the hair shaft
- Body lice
 - Linear excoriations, nits in seams of clothing
- Pubic lice (crabs)
 - Sexually transmitted
 - Intense pruritus, papular urticaria on thighs and abdomen
- Treatment: Extensive cleaning of clothing and bedding, pediculicide creams and shampoos (pyrethrin, permethrin)

Pediculosis (Lice)



Scabies

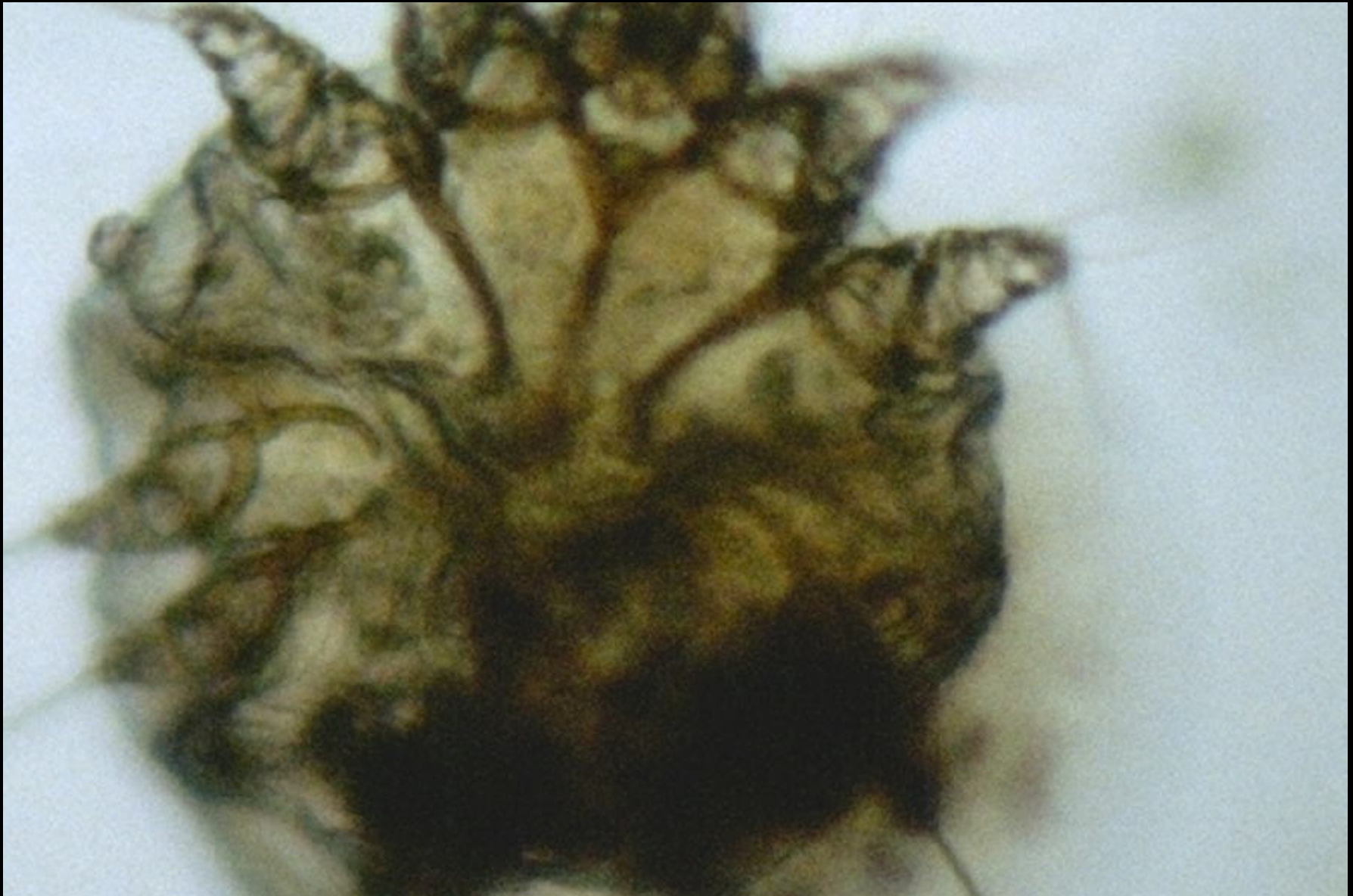
- Severe pruritus (due to hypersensitivity reaction to scabies mite)
- Web spaces, elbow, axilla, groin (favors thin skin)
- Red papules, vesicles, crusts, linear burrows
- Treatment: Permethrin cream, ivermectin; may consider using lindane lotion (>2 yrs)
- “Norwegian scabies” (severe disease) seen in immunocompromised

Scabies



Copyrig

Scabies



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Scabies



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Scabies



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Scarlet Fever

- Group A beta hemolytic Strep toxin
- Sore throat, fever, headache, vomiting
- Sandpaper rash starts on flexor creases and moves to trunk and extremities; circumoral sparing
- “Strawberry” tongue
- Groin, axilla, antecubital areas (Pastia's lines)
- Skin peeling (palms and soles)
- Diagnosis: Throat swab, increasing ASO titer
- Treatment: Pen G

Scarlet Fever



Scarlet Fever



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Scarlet Fever



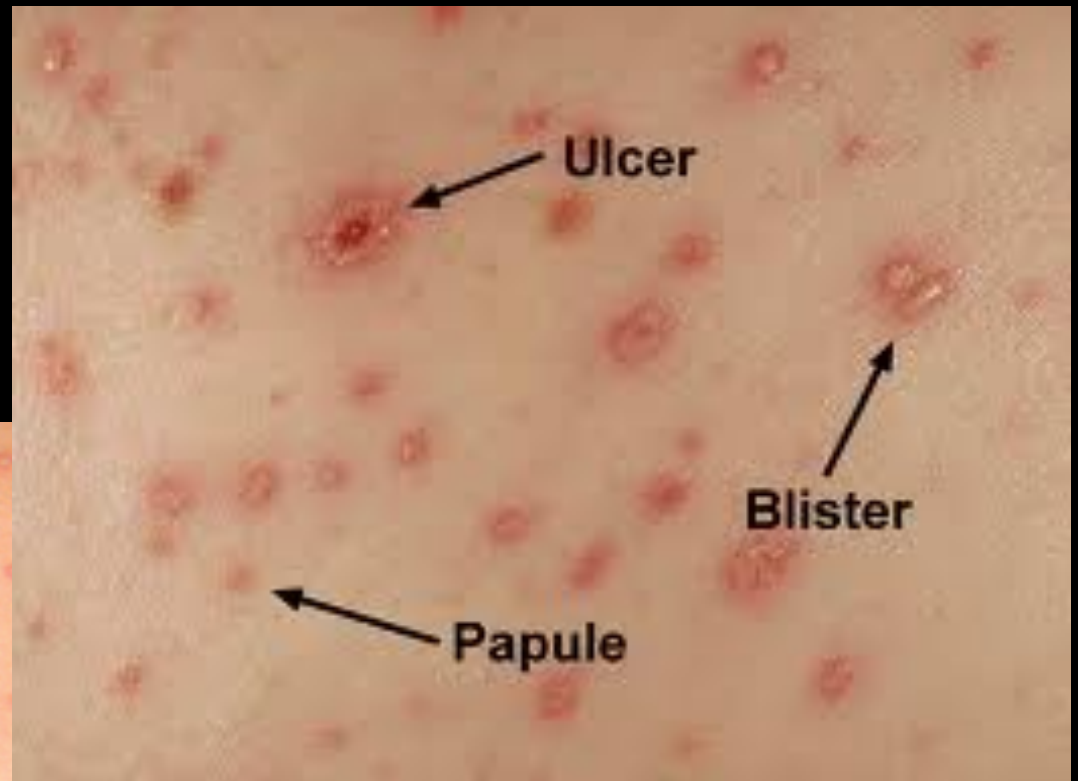
Varicella (Chicken Pox)

- Varicella zoster virus
- Fever, malaise, URI
- Macules, papules → vesicles (“dewdrop on a rose petal”) that come in crops → crusts
- Complications (mostly adults): Pneumonia, encephalitis, otitis media, 2° infection
- Treatment: Acyclovir or analogues
- Avoid salicylates (Reye’s syndrome)
- Prevention: Immune globulin if immunocompromised or pregnant, vaccine in kids and non-immune adults

Chicken Pox



Chicken Pox



Varicella



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Varicella



Varicella



Six Childhood Infectious Diseases Associated with Rashes

Infection	Characteristics
Measles (Rubeola)	Rash begins at head and goes down Cough, coryza, conjunctivitis (the 3 C's)
Chicken pox (Varicella)	Macules to papules to vesicles to crusted lesions Varying stages simultaneously
German measles (Rubella)	Rash begins at head and goes down Three day measles Prominent lymphadenopathy
Scarlet fever	Strep throat with sand paper truncal rash
Erythema infectiosum (Fifth Disease)	Slapped cheeks
Roseola Infantum (Sixth Disease)	Fever, then truncal rash when fever is gone

Occupational Exposures (1)

Hepatitis B

- HB Surface antigen = Infectious
- HB Surface antibody = Protective
- HB e antigen = Highly infectious
- Per the CDC, a needle stick or cut exposure if not successfully vaccinated = 6-30%
- Risk is at the high end of the range (25-30%) if source is HBeAg-positive

Occupational Exposures (2)

Hepatitis B vaccination

- Very safe vaccine
- Three-dose series (0, 1, 6 months)
- Test for seroconversion (desired antibody level >10 mIU/mL)
- Repeat series if non-responder
- No boosters if responder

Hepatitis B Immune Globulin (HBIG)

- Passive immunization (pooled antibodies)
- Effective within 1 week of exposure

Occupational Exposures (3)

- Management of possible hepatitis B exposure
 - Test source for HB surface antigen
 - Test exposed patient for HB surface antibody
- Exposure to HBsAg-positive source
 - If the healthcare worker is unvaccinated, give HBIG and start the vaccine series
 - If the healthcare worker has protective levels of antibody (>10 mIU/mL), no treatment is needed
 - Special circumstances (known non-responders, partially vaccinated) -- look it up!

Occupational Exposures (4)

Hepatitis C

- Percutaneous transmission is common
- Sexual transmission is rare
- Per the CDC, after a cut or needle stick exposure the seroconversion risk about 2%
- Test source for anti-HCV
- No effective post-exposure prophylaxis
- If positive do serial tests of the healthcare worker for anti-HCV and liver enzymes

Occupational Exposures (5)

HIV exposure

- Transmission after percutaneous exposure 0.3%
- Risk of transmission is increased when
 - Contaminating device is visibly contaminated with blood
 - A needle is placed directly into a blood vessel
 - Injury is deep
 - Contamination is with a hollow bore needle
 - Source is likely to have a heavy viral load (as occurs in terminal HIV)
- Post-exposure prophylaxis recommended for significant HIV exposures

Occupational Exposures (6)

HIV Post-Exposure Prophylaxis

- For HIV-positive exposures
- HIV test source and healthcare worker
- Start medications within 1-2 hours of exposure
- Multi-drug protocols are standard
- Reverse transcriptase inhibitors (e.g., zidovudine, lamivudine) and protease inhibitors are used
- Side effects often limit treatment
- PEP is continued for 4 weeks
- Consult ID for most cases

DERMATOLOGY QUESTIONS

Review the picture on the slide and then answer the question on the slide that follows.



DE 1

Which of the following is TRUE about the above slide?

- A. It is usually follows a benign course
- B. Mucus membranes are rarely involved
- C. Nikolsky sign is negative
- D. The lesions are painless
- E. The vesicles a fragile and break easily



DE 2
185

Which of the following is TRUE about the above slide?

- A. It is a type of acute hypersensitivity
- B. Linear pattern helps make the diagnosis
- C. Steroids are contraindicated
- D. The blister fluid contains antigen
- E. The rash does not itch



DE 3
187

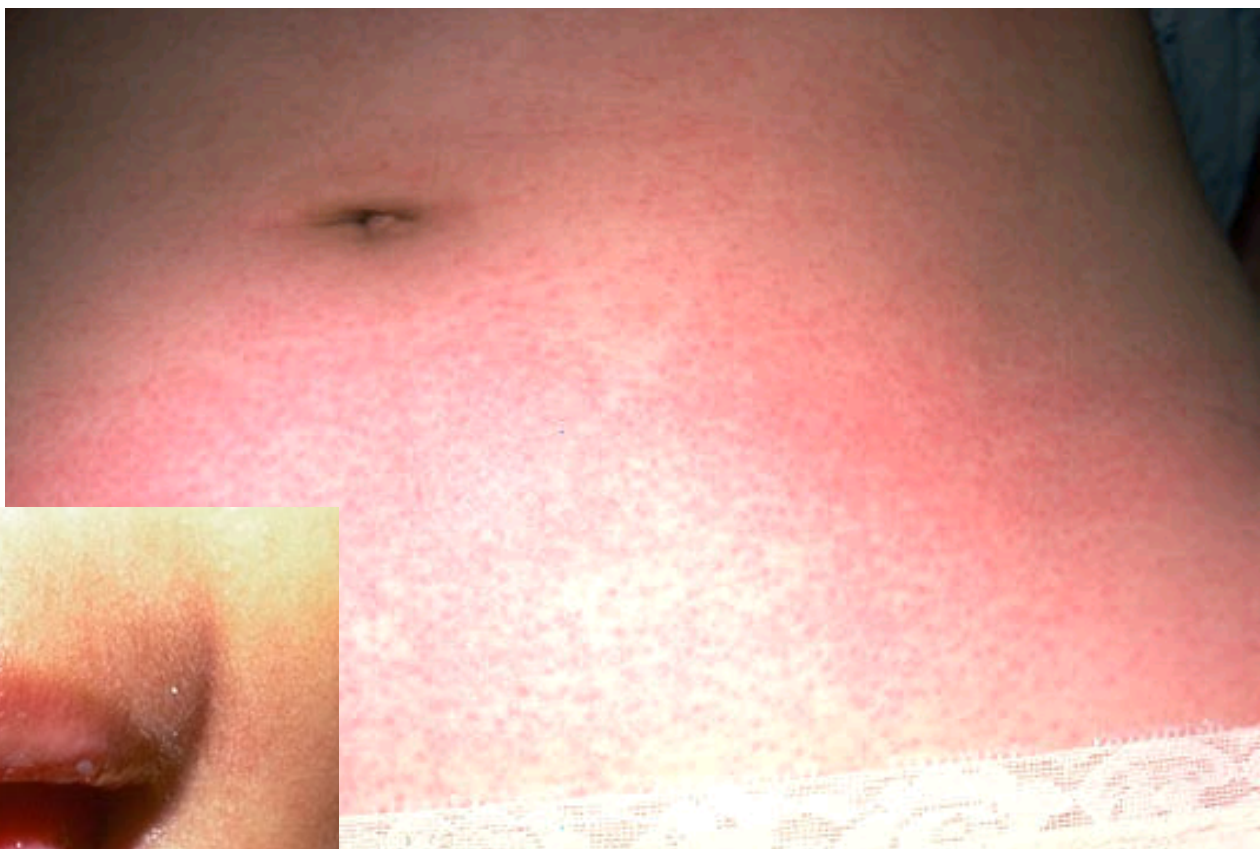
Med-Cha

Which of the following is TRUE about the above slide?

- A. Aplastic crisis may be a complication
- B. No other symptoms are associated with this rash
- C. NSAIDs should be avoided
- D. The rash starts after the patient defervesces
- E. The chin and eyelids are usually involved

DE 3

188



DE 4
189

Which of the following is TRUE about the above slide?

- A. It does not require antibiotic treatment
- B. It is caused by Staph
- C. Skin peeling is uncommon
- D. The circumoral area is spared
- E. The rash is seen on extensor surfaces



DE 5
191

Which of the following is TRUE about the above slide?

- A. Antibiotics are indicated
- B. It is caused by a virus
- C. It is contagious
- D. It is seen more often in children and young adults
- E. It will resolve within a week



DE 6
193

Which of the following is TRUE about the above slide?

- A. It is not tender
- B. It is not warm
- C. It is seen only in the elderly
- D. The rash tends to be generalized
- E. Treatment is with penicillin or doxycycline



DE 7
195

Which of the following is TRUE about the above slide?

- A. It is a marker for systemic disease
- B. It is more common in men
- C. It resolves quickly (in a couple of days)
- D. Lesions are most commonly found on the anterior forearms
- E. The lesions are painless



DE 8
197

Which of the following is TRUE about the above slide?

- A. Diagnosis is made by culturing the offending organism
- B. It is acquired by a mosquito bite
- C. It is treated with antiviral agents
- D. Patients may have cranial nerve palsies
- E. The rash involves the palms and soles



DE 9
199

Which of the following is TRUE about the above slide?

- A. It is the most serious form in a spectrum of disease
- B. Lesions are asymmetric
- C. Target lesions are rare
- D. The lesions all desquamate
- E. The patient may be taking phenytoin



DE 10
201

Which of the following is TRUE about the above slide?

- A. Affects less than 25% of the body surface area
- B. ICU admission is recommended
- C. Is unrelated to Stevens Johnson syndrome
- D. Nikolsky's sign is negative
- E. Rarely associated with exposure to drugs



DE 11
203

Which of the following is TRUE about the above slide?

- A. Aspirin should be avoided
- B. Cerebral artery vasculitis and aneurysms are a complication
- C. Desquamation is uncommon
- D. Fever duration of over 5 days is a diagnostic criterion
- E. Seen in patients up to age 18 years



DE 12
2015

Which of the following is TRUE about the above slide?

- A. Cough is rare
- B. It is one of the “TORCH” infections
- C. Koplik’s spots may be found in the mouth
- D. Posterior lymphadenopathy is characteristic
- E. The rash typically lasts three days



DE 13
207

Which of the following is TRUE about the above slide?

- A. Complications are common in children
- B. It may be accompanied by fever and malaise
- C. Salicylates are indicated
- D. There is no vaccine for this infection
- E. The lesions all develop simultaneously



DE 14
209

Which of the following is TRUE about the above slide?

- A. Blisters can be large and tense
- B. It has a high mortality rate
- C. Mucus membranes are frequently involved
- D. Nikolsky sign is positive
- E. This rash is usually an acute process

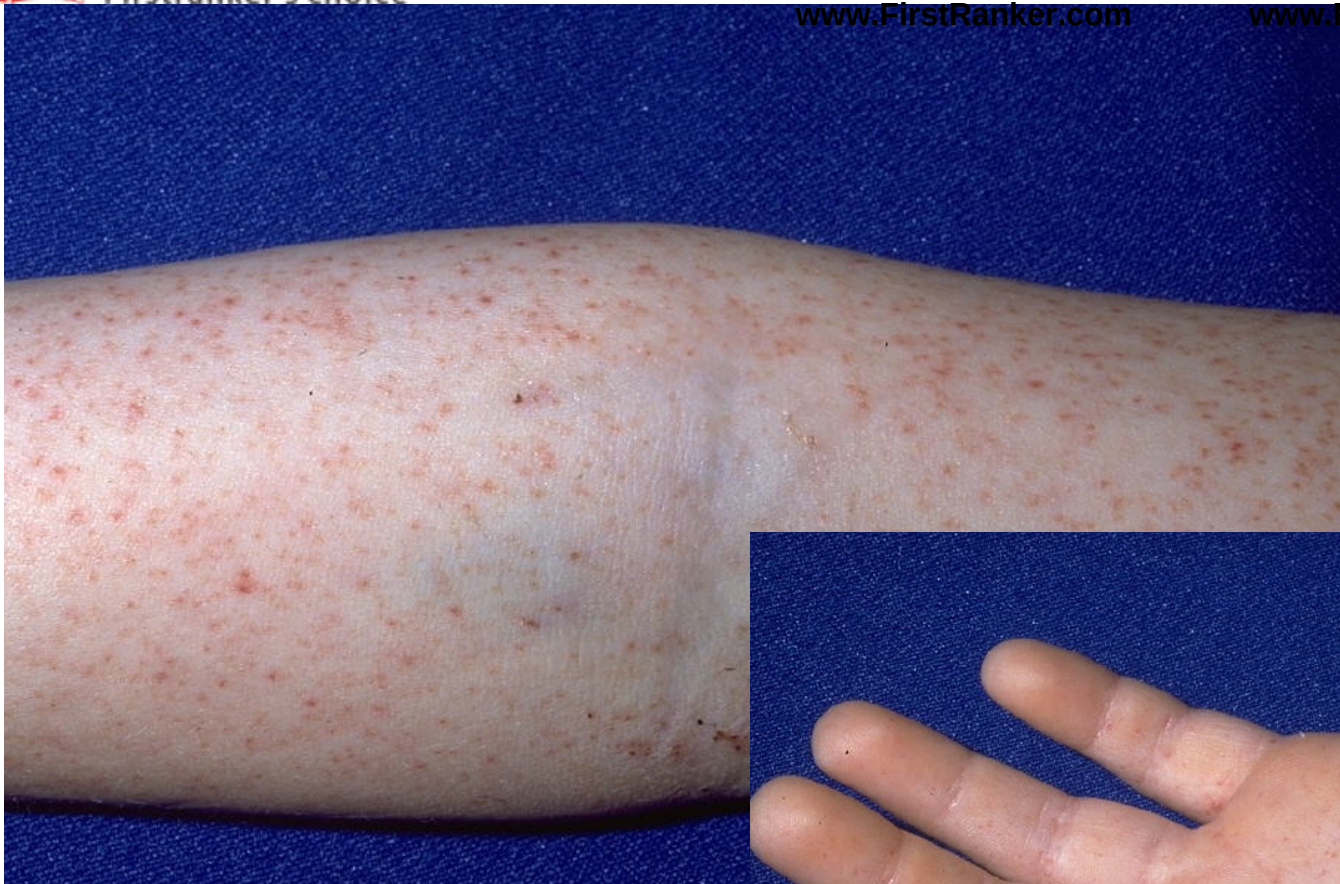


DE 15
21

Which of the following is TRUE about the above slide?

- A. It is caused by a bacteria
- B. It is spread by respiratory transmission
- C. Lesions are also seen on the torso
- D. Mouth lesions spare the anterior mouth
- E. Sore throat and URI symptoms may be seen

DE 15
212



DE 16
213

Which of the following is TRUE about the above slide?

- A. It is caused by a virus
- B. It is seen most commonly in the winter
- C. It is transmitted by a tick bite
- D. The rash begins on the trunk and spreads to the extremities
- E. The rash often involved the face



DE 17
215

Which of the following is TRUE about the above slide?

- A. Immunocompromised patients are not at increased risk of severe disease
- B. The axilla and groin tend to be spared
- C. The rash is due to a hypersensitivity reaction
- D. The rash is not itchy
- E. Treatment is to wash the skin off



DE 18
217

Which of the following is TRUE about the above slide?

- A. Does not resolve without intervention
- B. GI bleeding is a complication
- C. It is the most common acute vasculitis affecting adults
- D. The rash associated with a viral infection
- E. Thrombocytopenia is common



DE 19
219

Which of the following is TRUE about the above slide?

- A. Bullous lesions suggest a Staph infection
- B. Fever is common
- C. It is a deep skin infection
- D. It is not contagious
- E. It is painful



Which of the following is TRUE about the above slide?

- A. Antibiotics are indicated
- B. Diagnosis is made by wound culture
- C. The causative organism is not one of the TORCH infections
- D. The causative organism may also cause oral lesions
- E. The lesions should be incised and drained

Dermatology Answer Key

1. E

2. B

3. A

4. D

5. D

6. E

7. A

8. D

9. E

10. B

11. D

12. C

13. B

14. A

15. E

16. C

17. C

18. B

19. A

20. D

Diseases Pictured

Question 1: Pemphigus Vulgaris

Question 2: Contact Dermatitis

Question 3: Fifth Disease (Erythema Infectiosum)

Question 4: Scarlet Fever

Question 5: Pityriasis Rosea

Question 6: Erysipelas

Question 7: Erythema Nodosum

Question 8: Lyme Disease

Question 9: Erythema Multiforme

Question 10: Toxic Epidermal Necrolysis (TEN)

Diseases Pictured

Question 11: Kawasaki's Disease

Question 12: Measles

Question 13: Varicella

Question 14: Bullous Pemphigoid

Question 15: Hand, Foot and Mouth Disease

Question 16: Rocky Mountain Spotted Fever

Question 17: Scabies

Question 18: Henoch-Schonlein Purpura

Question 19: Impetigo

Question 20: Herpetic Whitlow