Common Pediatric Dermatology Diagnoses

Kimberly A. Horii MD
Associate Professor of Pediatrics
Division of Dermatology
Children's Mercy
Kansas City, Missouri

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Common Pediatric Dermatology Diagnoses

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Common Pediatric Dermatology Diagnoses

- Vascular Birthmarks
  - Port wine stains
  - Infantile hemangiomas
- Dermatitis
  - Seborrheic dermatitis
  - Diaper dermatitis
  - Atopic dermatitis
- Impetigo

Common Pediatric Dermatology Diagnoses

- Annular lesions
  - Tinea corporis
  - Granuloma annulare
- Hair loss
  - Alopecia areata
  - Tinea capitis
  - Telogen effluvium
  - Trichotillomania

Classification of Vascular Lesions

- Vascular tumors: demonstrate cellular hyperplasia
- Proliferate over time
- Often not present at birth
  - *Infantile hemangioma*

- Vascular malformations: composed of dilated/dysplastic vessels
- Usually present at birth
  - *Capillary (port-wine stain)*
  - Lymphatic
  - Venous
  - Mixed malformations

Capillary Malformation (Port Wine Stain)

- Vascular malformation composed of dilated capillaries
- Always present at birth
- Pink to red flat patch
- Enlarges proportionately with overall growth
- Persists throughout life-may gradually darken
- May have underlying soft tissue hypertrophy
- If involves the periorbital region need to assess for glaucoma
  - Location of lesion may be important

Sturge-Weber Syndrome

- Classic triad
  - Facial capillary malformation (port-wine stain) in trigeminal nerve (V1) distribution
    - Higher risk if bilateral V1 involvement
  - Ipsilateral eye findings: glaucoma
  - Leptomeningeal and brain anomalies: leptomeningeal vascular malformation, calcifications
- May develop seizures and developmental delay
- Ophthalmologic exam and possible brain MRI

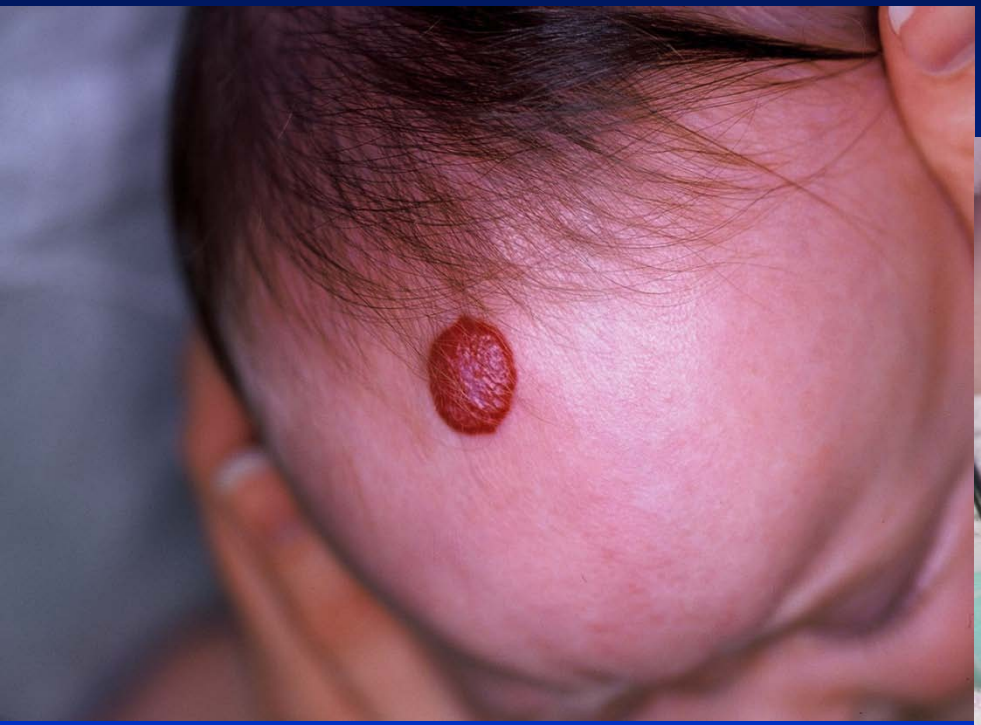
Infantile Hemangiomas

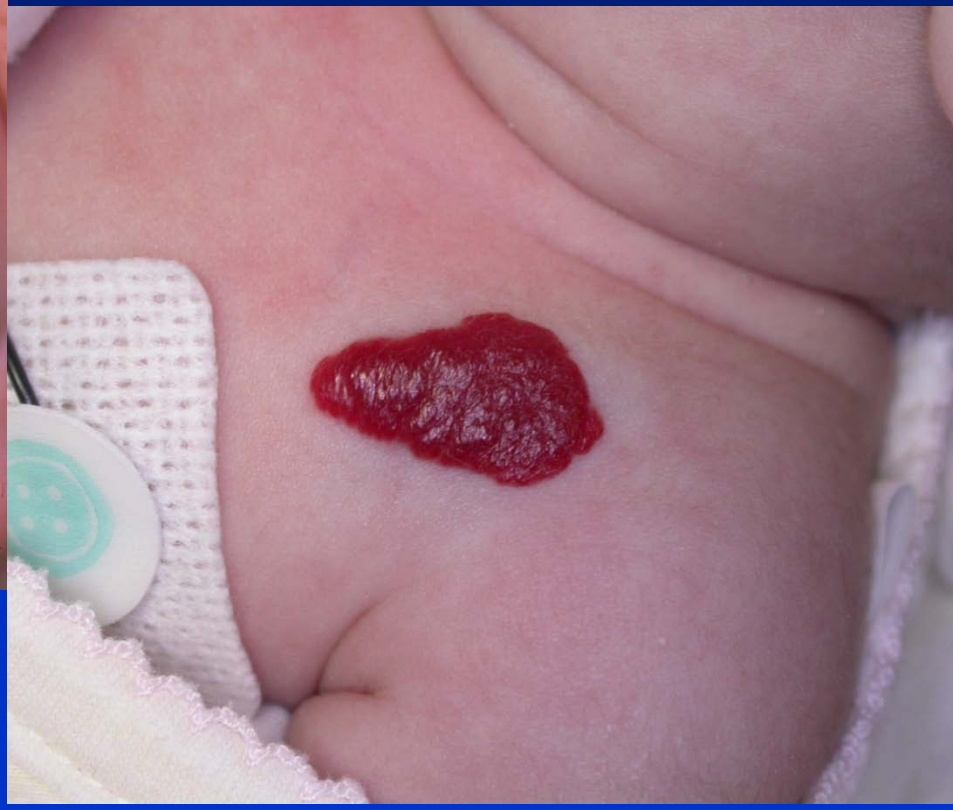
- Common vascular birthmark
- Affects approximately 4-5% of all infants
  - More common in females
  - Not usually present at birth
- Tumor composed of proliferating endothelial cells
- Rapid growth phase occurs during the first 2-6 months of life
  - Some high risk lesions may require treatment during the proliferative phase
- Gradual regression over many years

Infantile Hemangioma

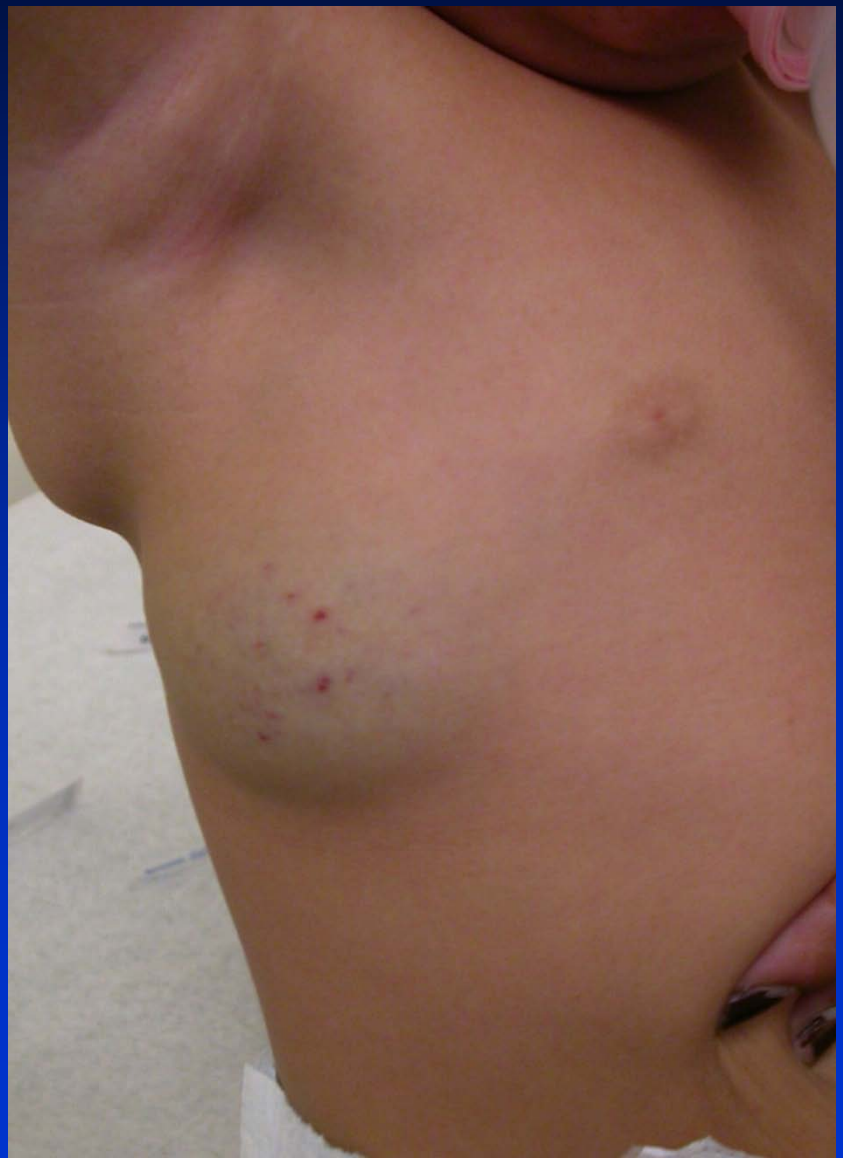
- Classified as superficial, deep, or mixed
- Color can vary depending upon growth stage
  - Proliferating: bright erythema
  - Involuting: dull red, violaceous, or grey

Superficial Hemangioma

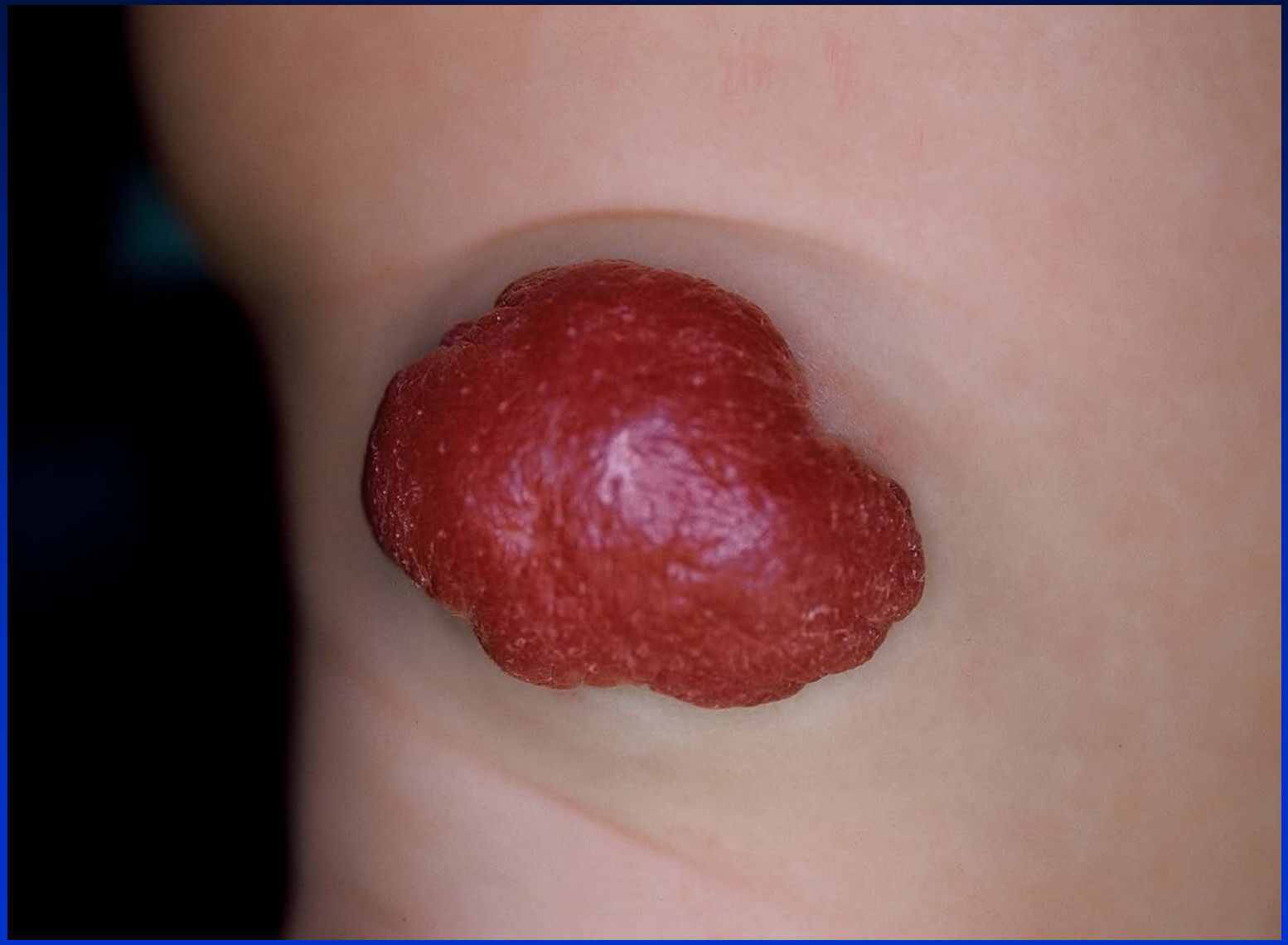




Deep Hemangioma

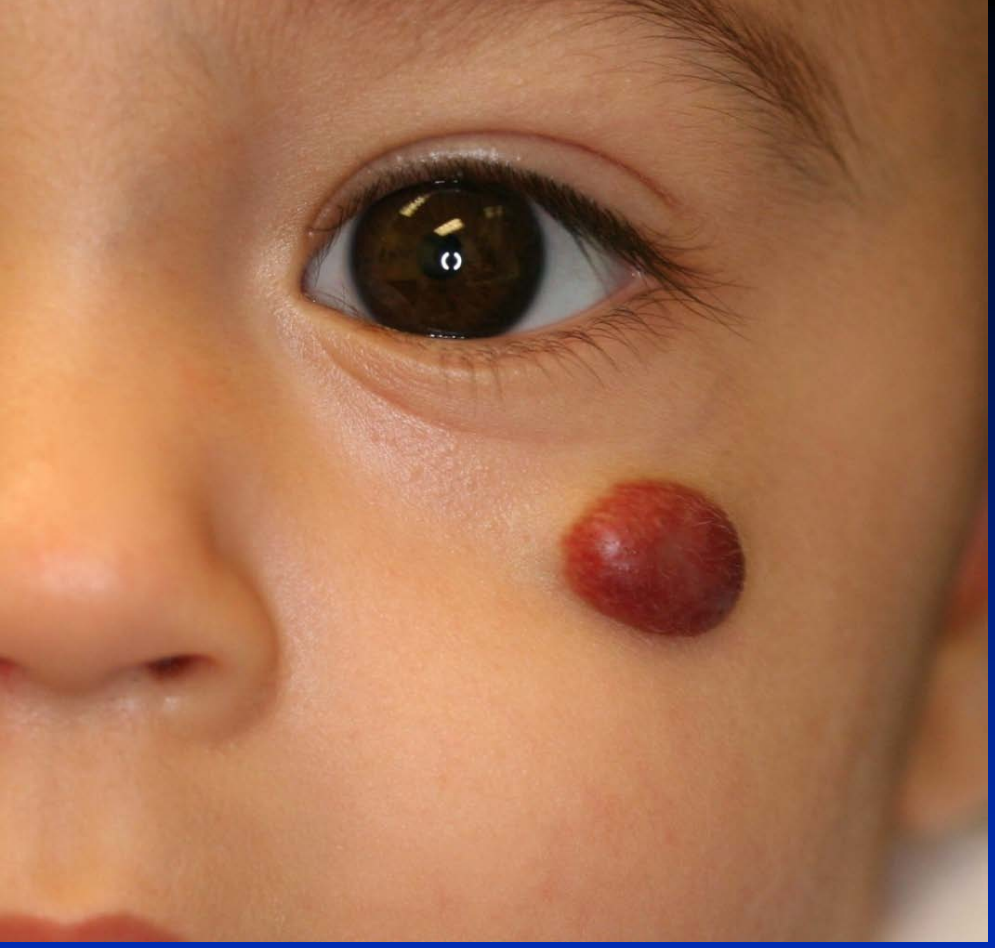


Mixed Hemangioma

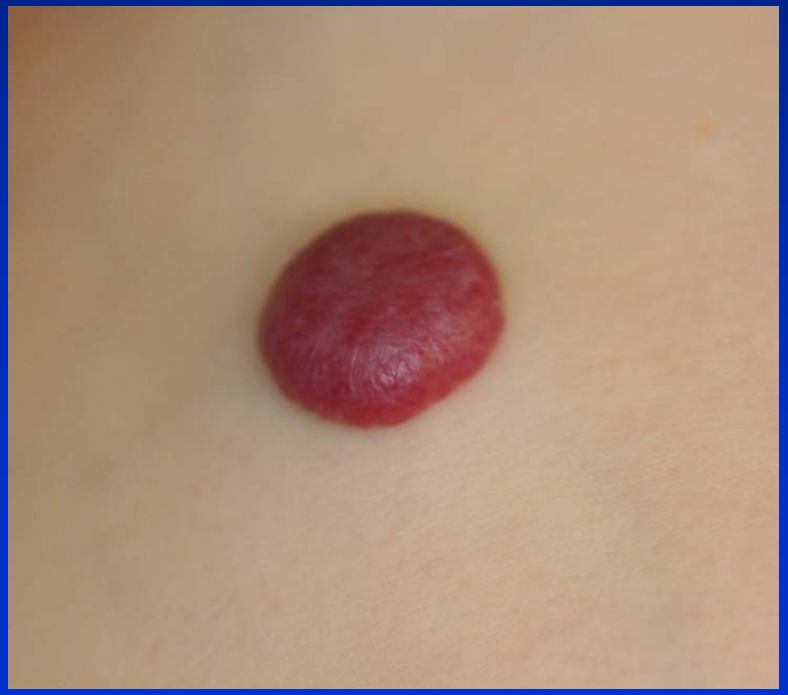


Segmental Hemangiomas

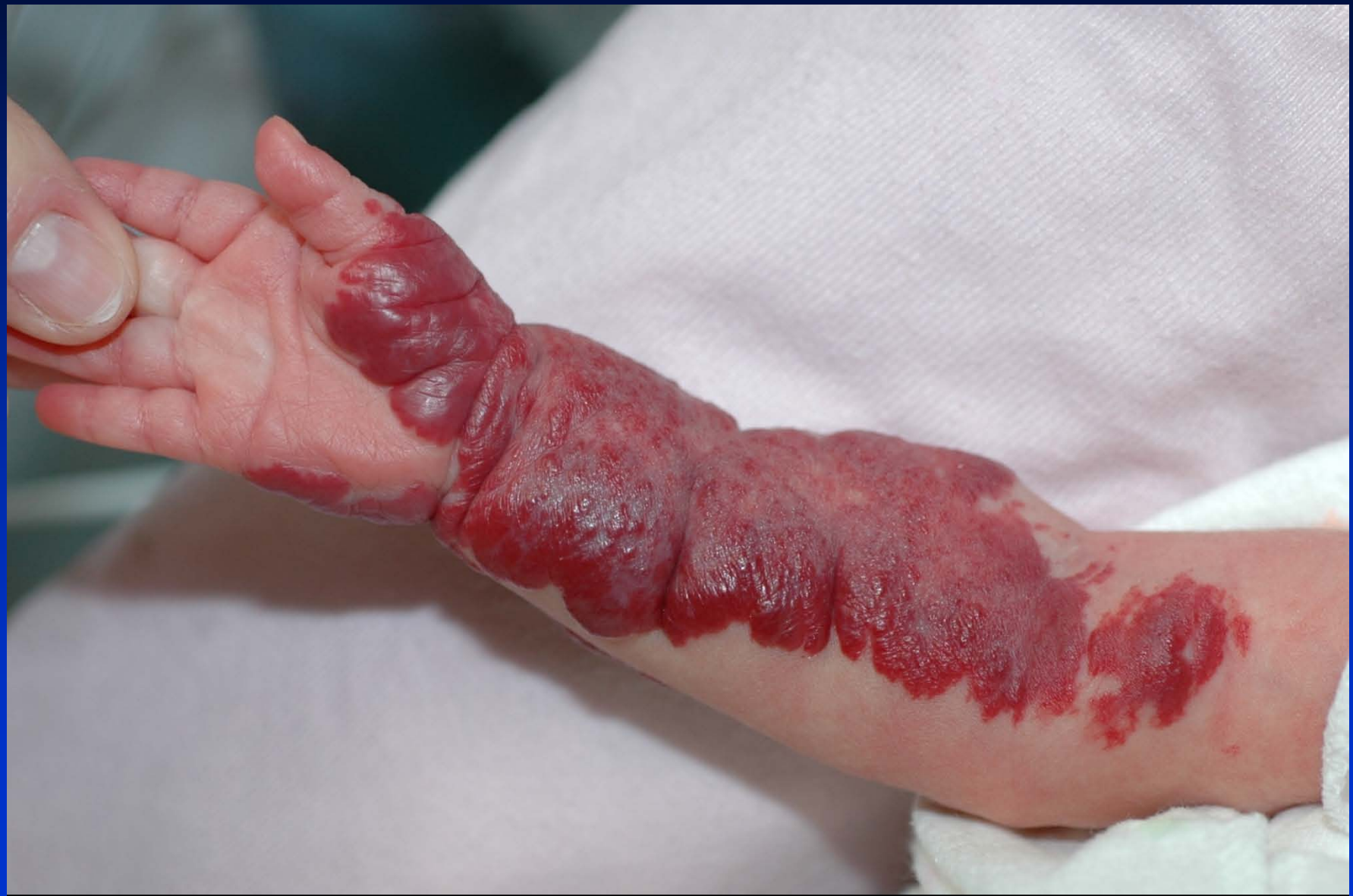
- Newer classification system divides into localized, segmental, or indeterminate
- Segmental lesions defined as covering an “anatomic territory”
  - Can be linear/geometric
  - Usually large and plaque-like
- Lesion morphology may help predict outcome
  - Segmental lesions had poorer outcome



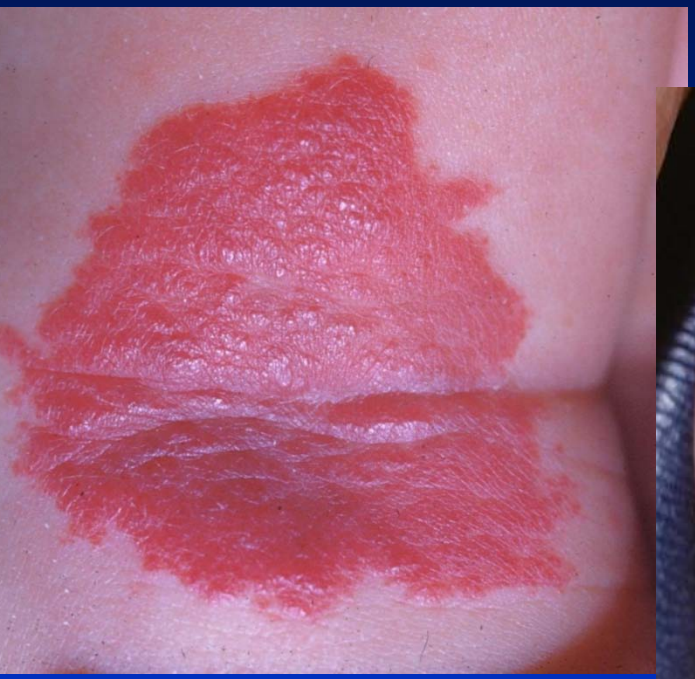
Localized Hemangiomas

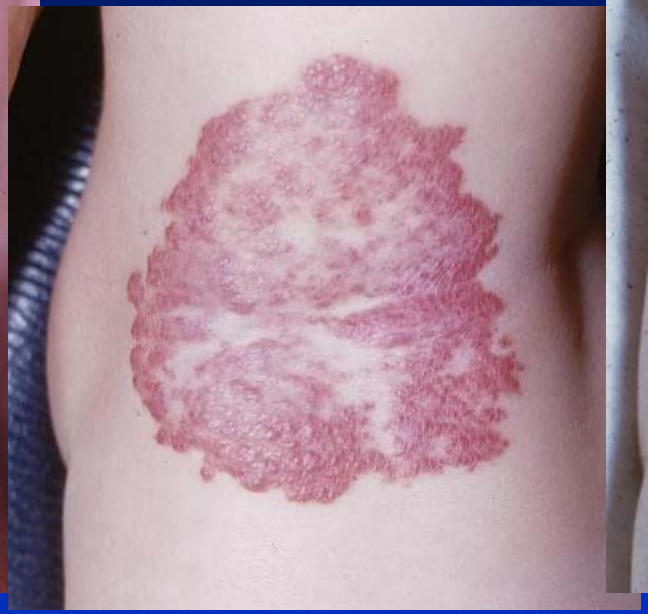


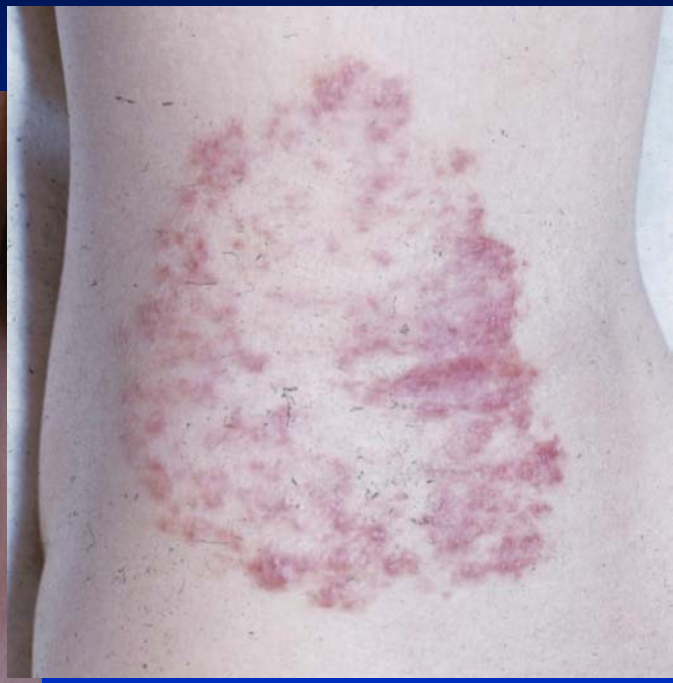
Segmental Hemangioma



Regressing Hemangioma







Which to Worry About? Location Counts!

- Segmental
  - Increased complications & ulceration
  - Large facial: PHACE syndrome
- “Beard” distribution
  - Airway involvement
- Periocular
  - Visual axis impairment
- Multiple >5
  - Possible extracutaneous invovlement
- Lumbosacral
  - Spinal dysraphism
- Perineal & Perioral
  - Risk of ulceration
    - Pain & infection
  - Feeding issues
- Disfiguring locations
  - Central face, nasal tip, perioral, & ear

PHACE Syndrome (OMIM 606519)

- Segmental facial hemangioma and ≥ 1 extracutaneous manifestation

- Posterior fossa brain malformations
- Hemangioma- segmental facial or cervicofacial
- Arterial anomalies-cervical or cerebral arteries
- Cardiac defects-coarctation of aorta
- Eye abnormalities
- (S)ternal defects or supraumbilical raphe

Indications for Treatment

- Majority of hemangiomas do not require treatment
- Need for treatment depends upon
  - Functional compromise of vital structures
  - Rate of growth
  - Secondary complications
    - Ulceration
  - Location
    - Risk of disfigurement

Active Non-Intervention

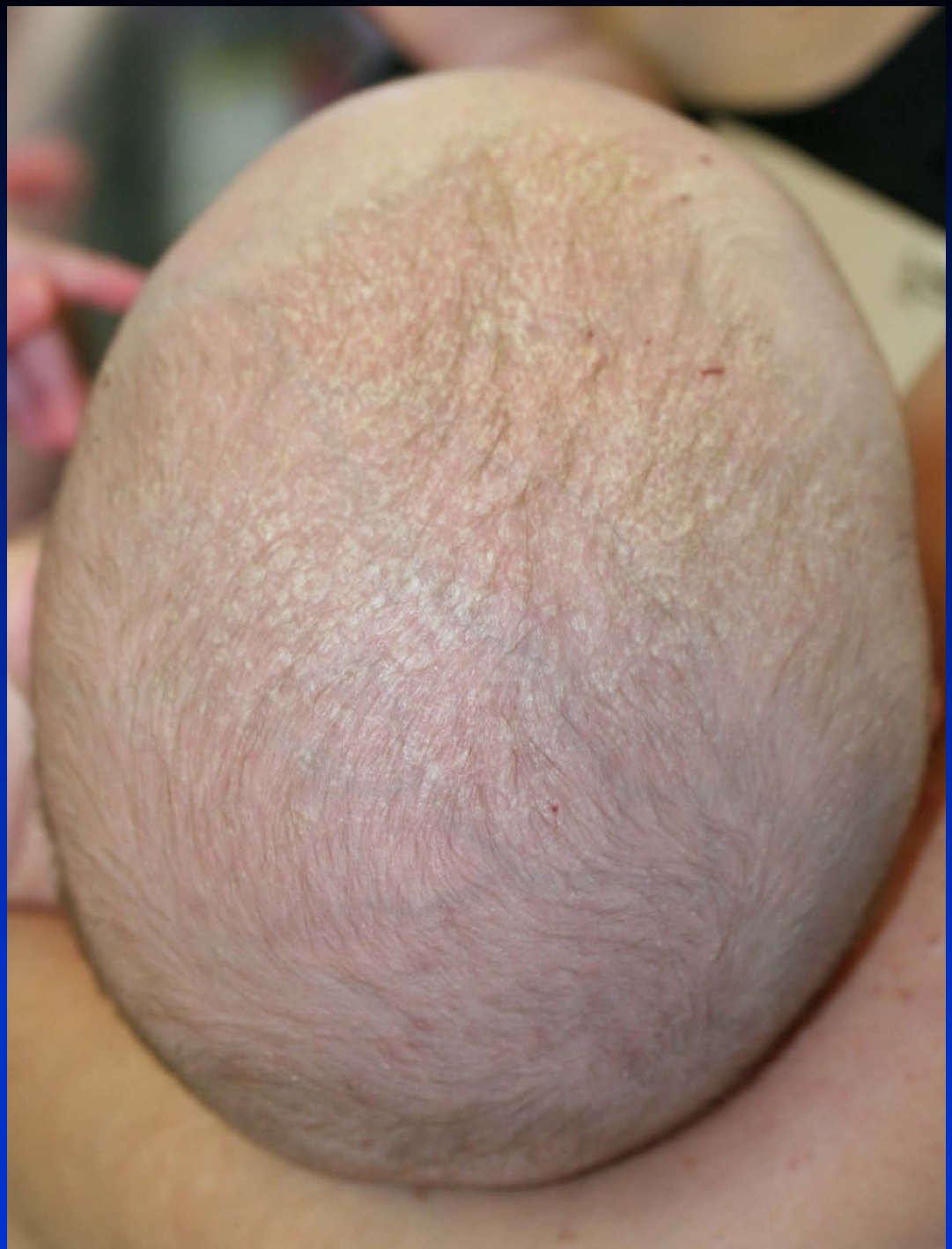
- A technique for small lesions with good prognosis for spontaneous resolution
- Actively discuss expectations with the parents
- Close observation
- Discuss possible complications
  - Ulceration
- Patients with “high risk” hemangiomas should be followed closely during the early rapid growth period

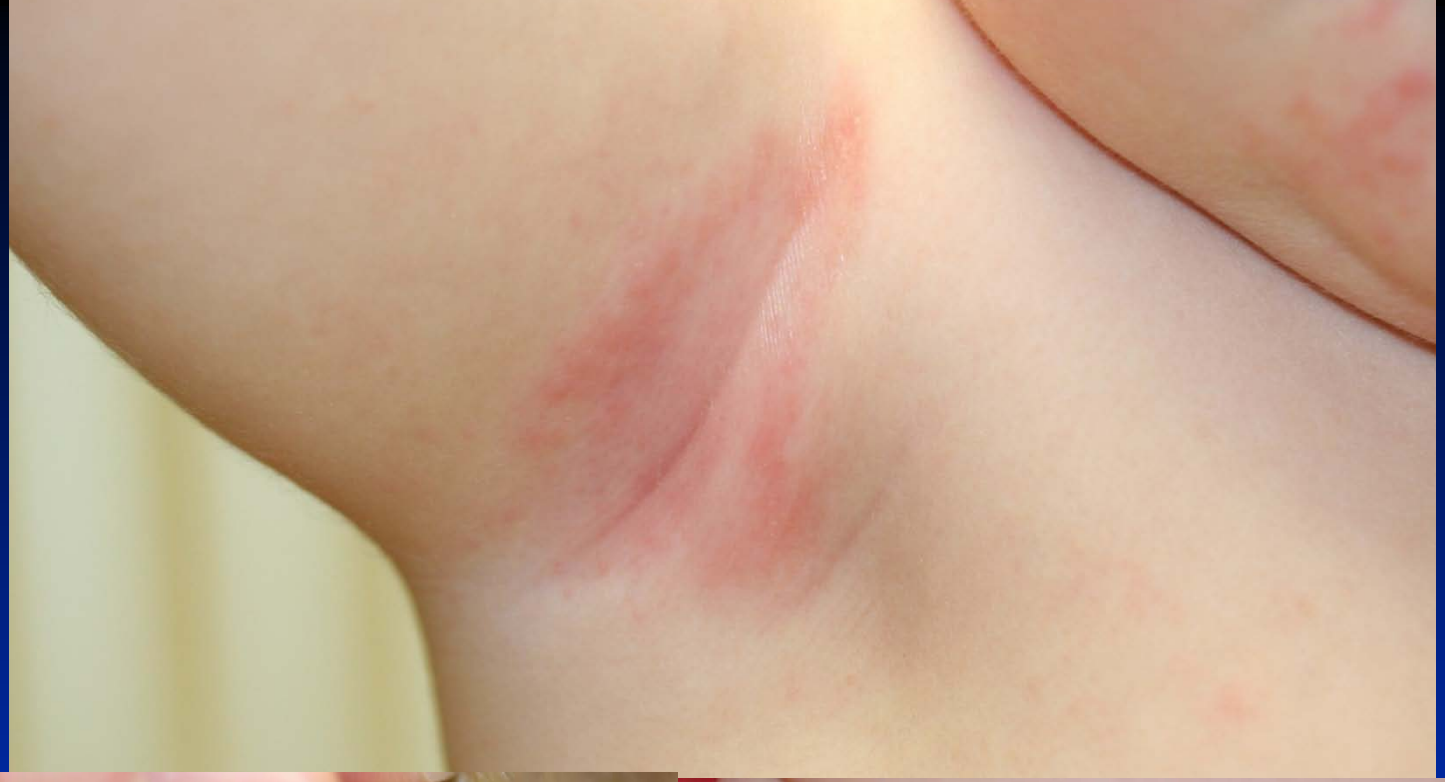
Treatment of Infantile Hemangiomas

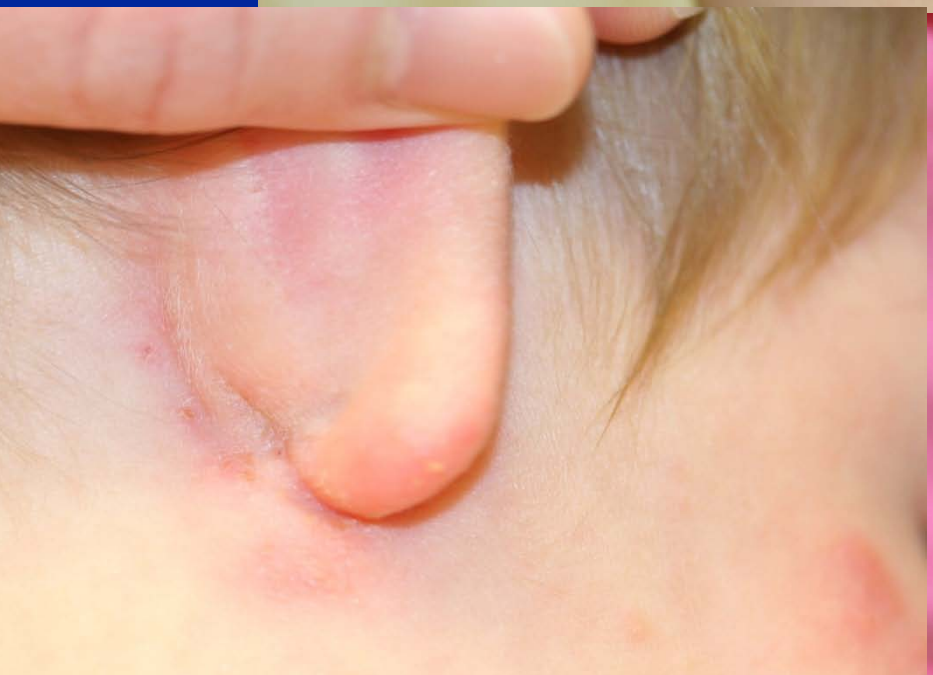
- Treatment may be required for life or function threatening complications or risk of disfigurement
- Treatment should ideally be instituted during the early proliferative stage
- No FDA approved treatment for hemangiomas
  - Oral propranolol
  - Topical timolol
  - Oral steroids
  - Intralesional steroids
  - Surgery

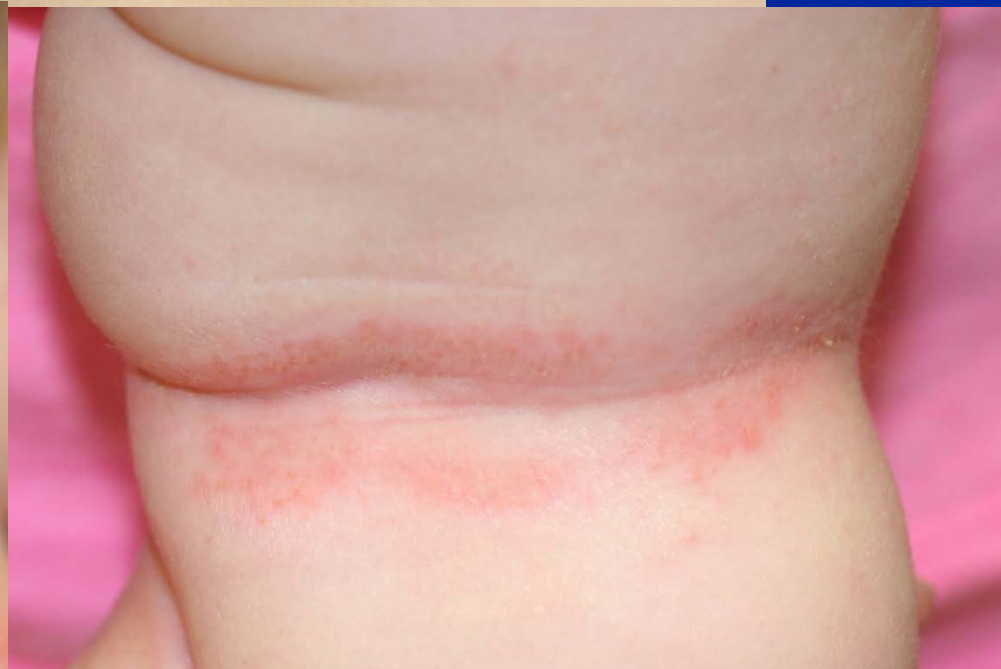
Seborrheic Dermatitis

- Commonly occurs in infants within the first three months of life
- Also known as “cradle cap”
- May be associated with proliferation of *Malassezia* species (yeast)
- Thick greasy scale on the scalp
- Greasy erythema and mild scaling behind the ears, on the central face, flexural folds, & diaper area
- Usually non-pruritic & self limited









Treatment

- Mineral oil for scalp
- Antifungal shampoos
  - Ketoconazole shampoo
  - Selenium sulfide shampoo
- Antifungal creams (effective against yeast)
  - Ketoconazole cream
- Low potency topical steroids
  - 1-2.5% Hydrocortisone ointment

Diaper Dermatitis

- Common dermatologic problem in infancy
- Variants of diaper dermatitis
  - Common
    - ***Irritant contact diaper dermatitis***
    - ***Infectious-candida, staph, strep***
    - Seborrheic dermatitis
  - Uncommon
    - Psoriasis
    - Zinc deficiency
    - Histiocytosis

Irritant Contact Dermatitis

- Affects up to 25% of infants wearing diapers
- Due to increased skin hydration, exposure to chemical irritants, & friction beneath the diaper
  - Chronic stooling can exacerbate
- Erythema involving the convex surfaces of the buttocks, perineum, lower abdomen, & thighs
  - Commonly spares the skin folds
- Severe cases may have superficial erosions

Treatment of Irritant Contact Dermatitis

- Frequent diaper changes
- Gentle cleansing
- Topical barriers ointments/cream applied thickly
  - Zinc oxide
  - White petrolatum

Treatment of Infectious Diaper Dermatitis

- Candidal diaper dermatitis
  - Antifungal cream (effective for yeast) or ointment
    - Azoles (clotrimazole, miconazole, ketoconazole)
- Impetigo
  - Topical or oral antibiotics
- Perianal Strep
  - Oral antibiotic
- All types benefit from topical barriers

Atopic Dermatitis

- Also known as eczema or “the itch that rashes”
- Affects at least 10-15% of children & adolescents
- Chronic inflammatory skin disease
- Characterized by
  - Xerosis
  - Pruritus
  - Recurrent skin lesions in a specific distribution
- Usually strong family history of “atopy”

Atopic Dermatitis

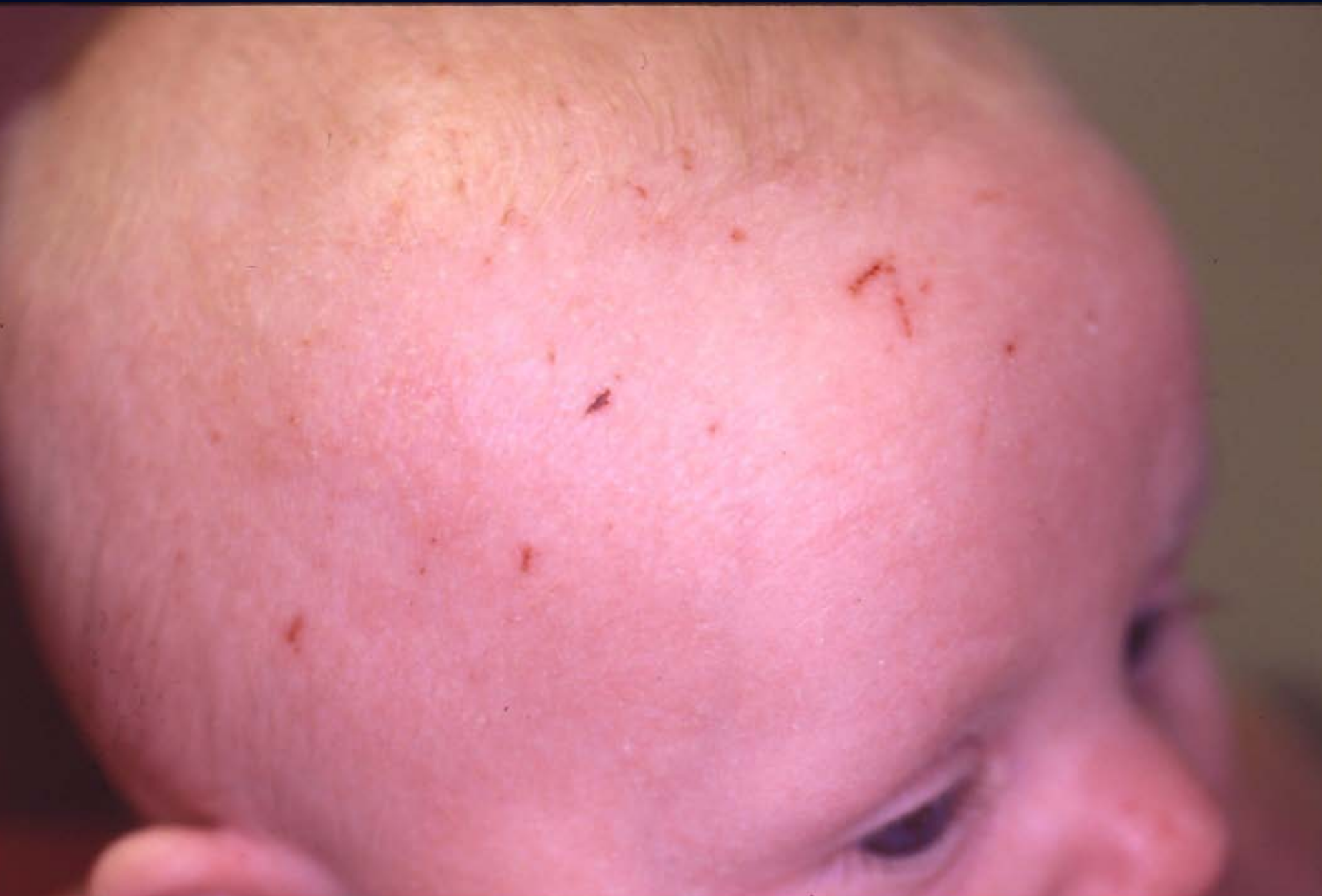
- Atopic dermatitis is often the first manifestation of atopy
  - Approximately 80% of children with atopic dermatitis will develop asthma or allergic rhinitis
- Onset usually within the first 5 years of life
  - 60% of cases begin by 1 year of age
  - 90% of cases begin by 5 years of age
- Prevalence decreases with age, though persistent or recurrent disease is common

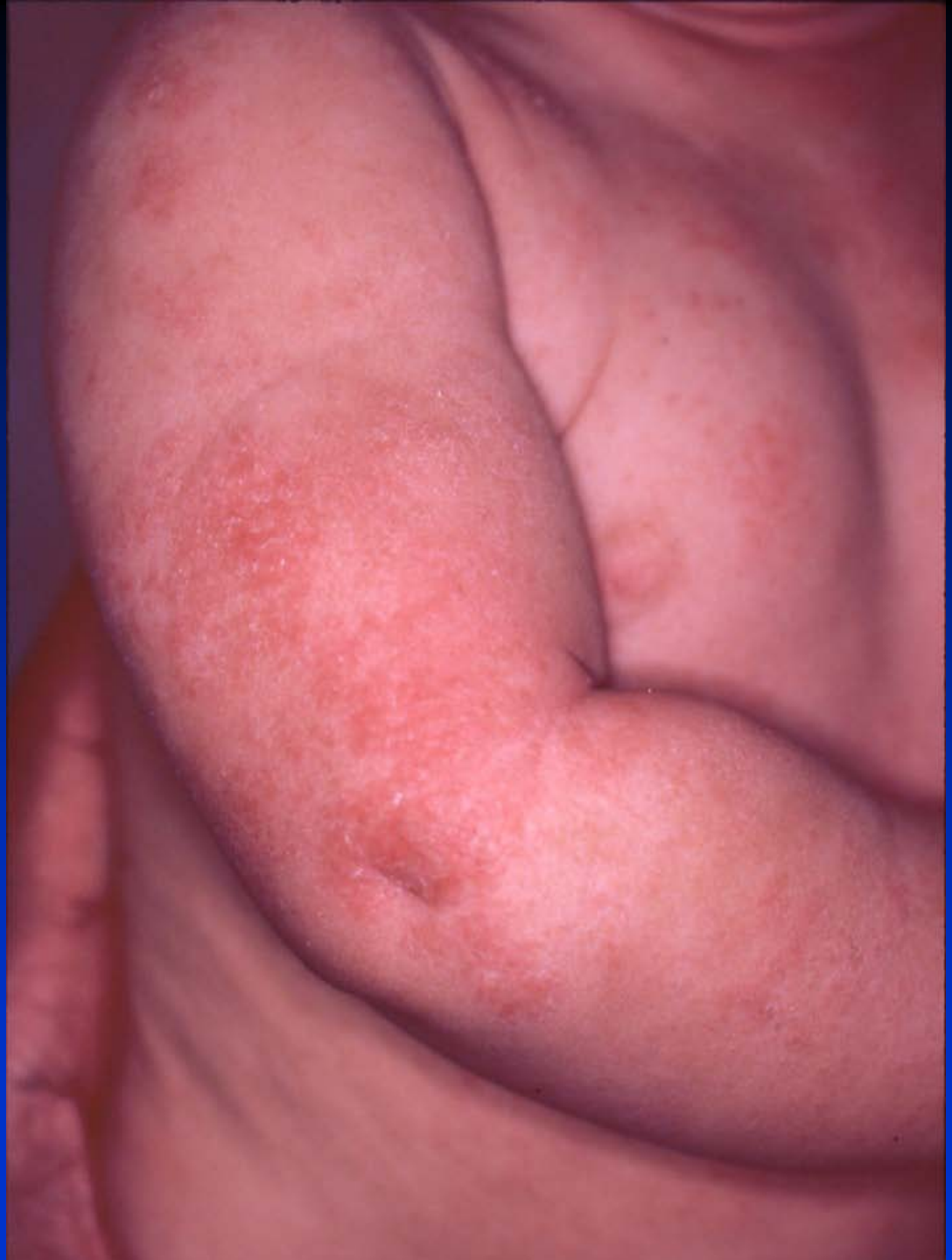
Phases of Atopic Dermatitis

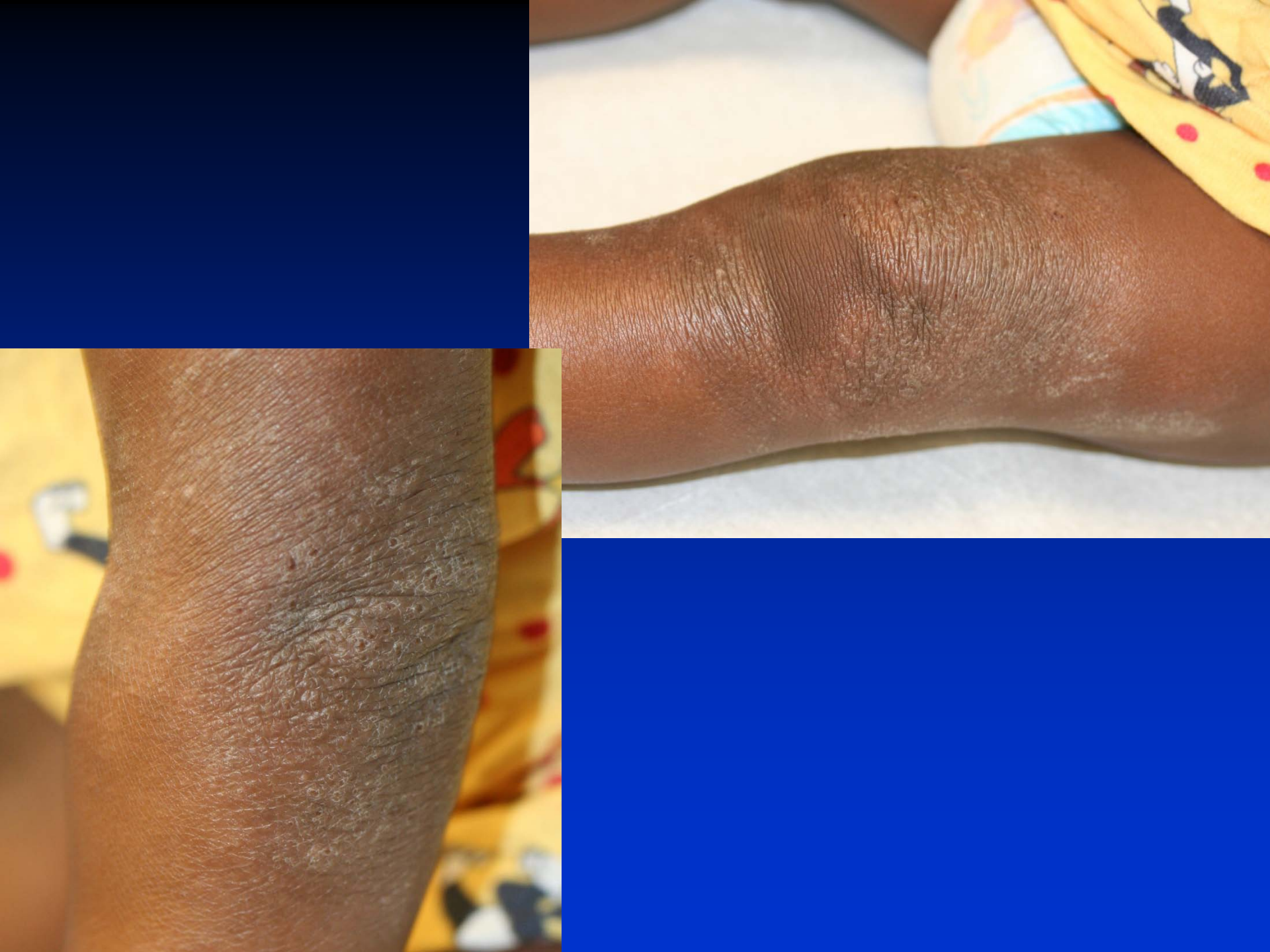
- Infantile phase (1 month-18 months)
- Childhood phase (18 months-puberty)
- Adolescent and adult phase

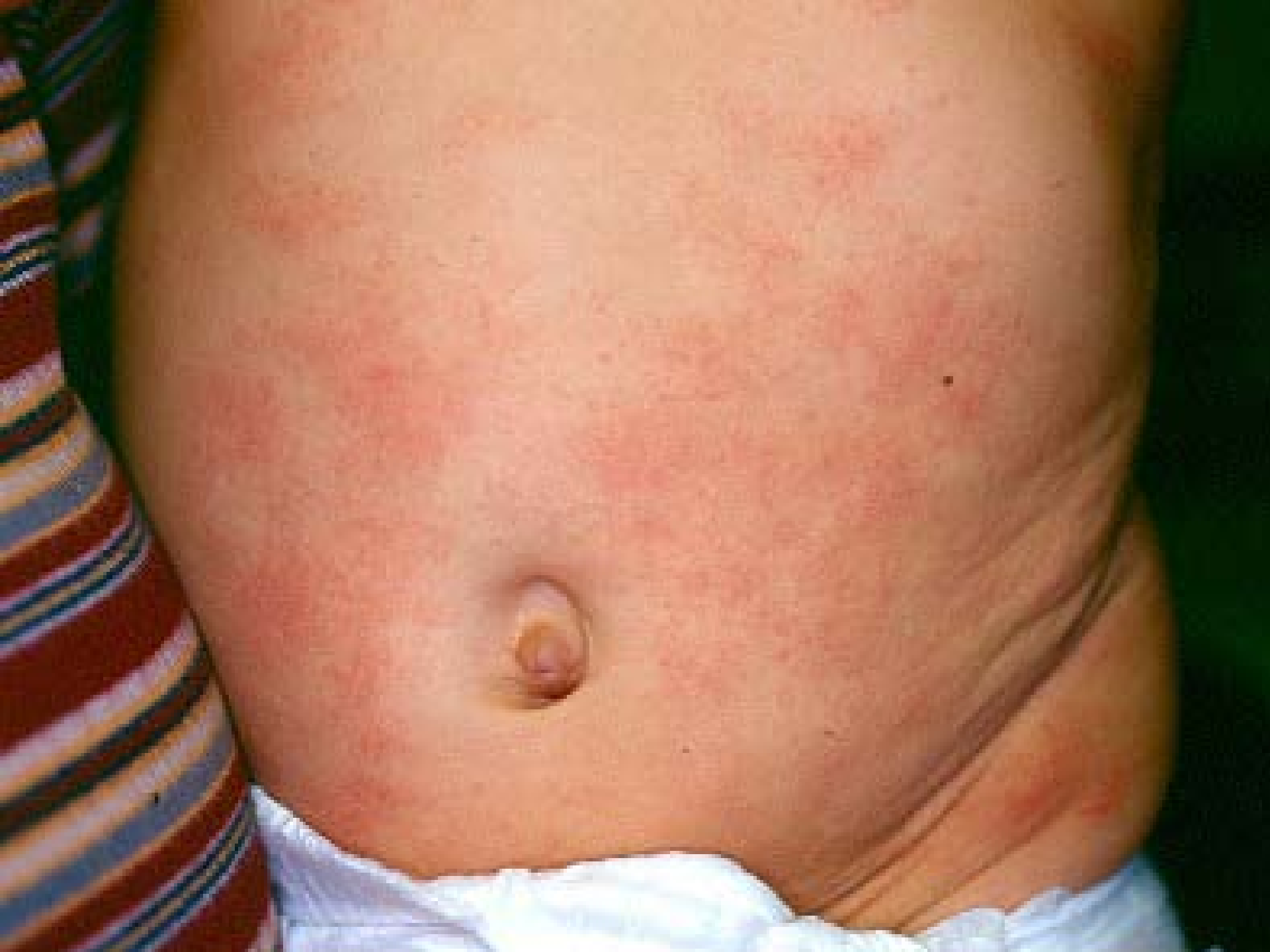
Infantile Phase Features

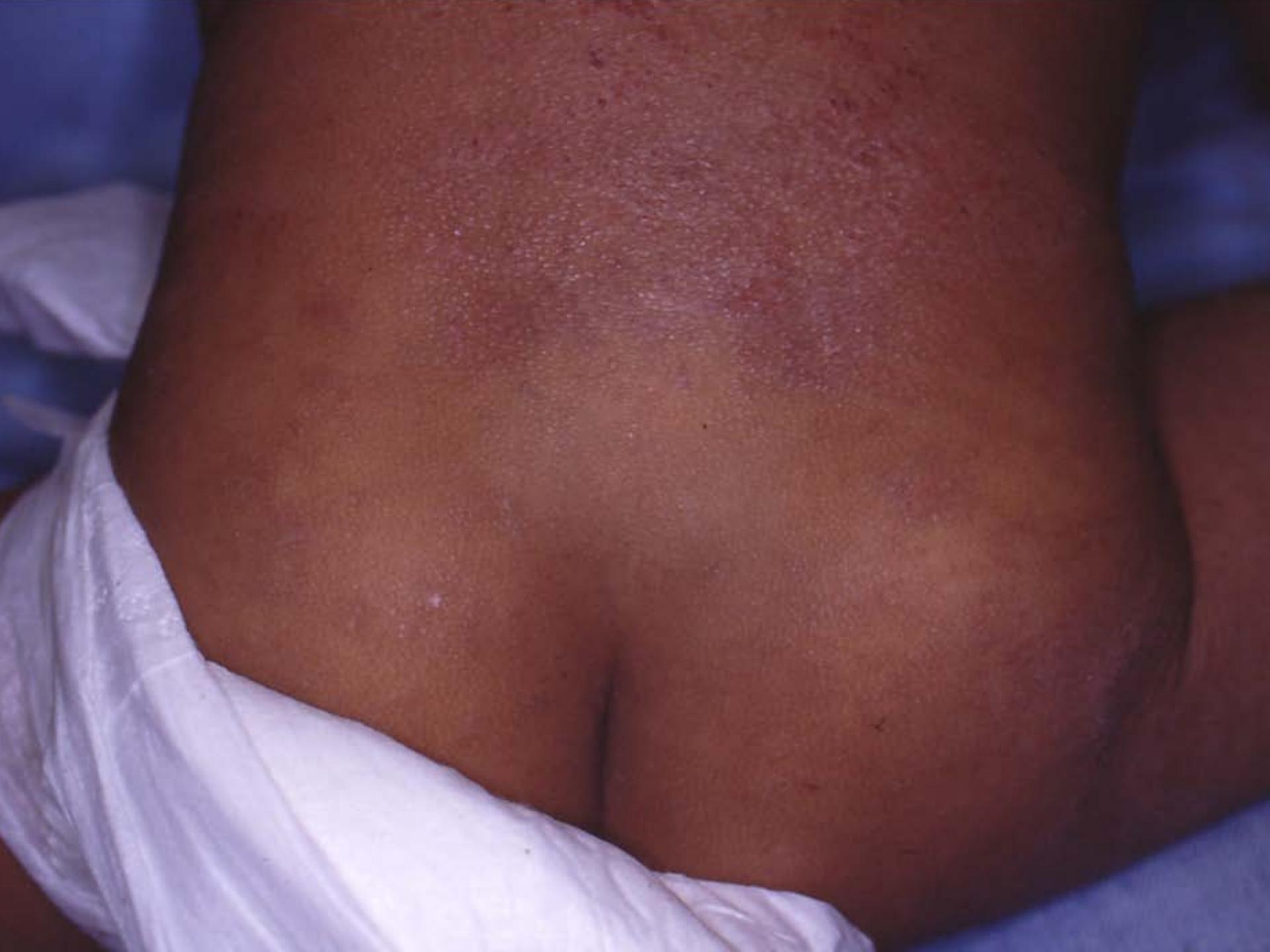
- Xerosis and evidence of pruritus
- Dermatitis begins on the cheeks or scalp
- Eventually involves the trunk and extensor extremities
- Diaper area usually spared
- “Rubbing” of face





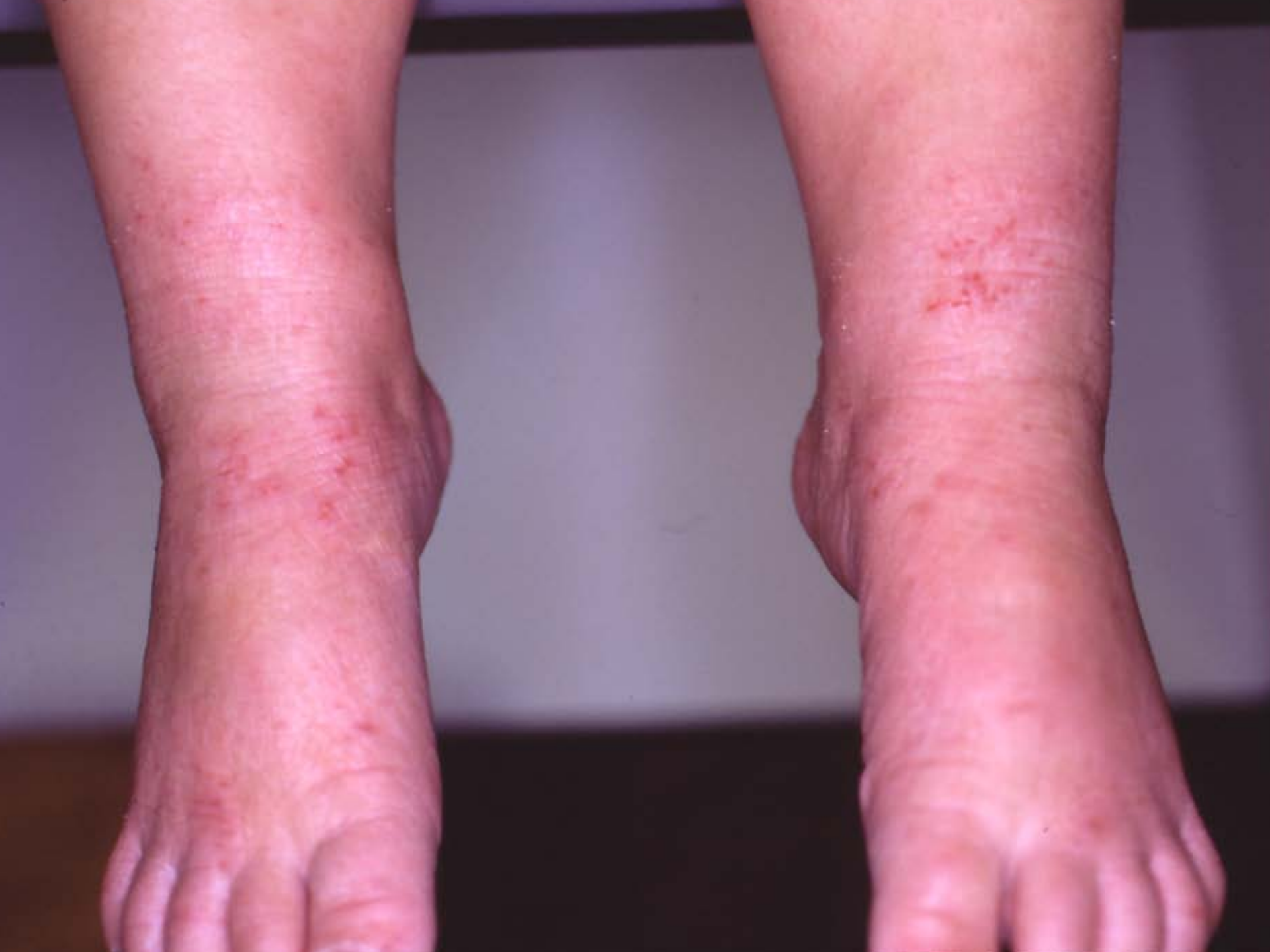


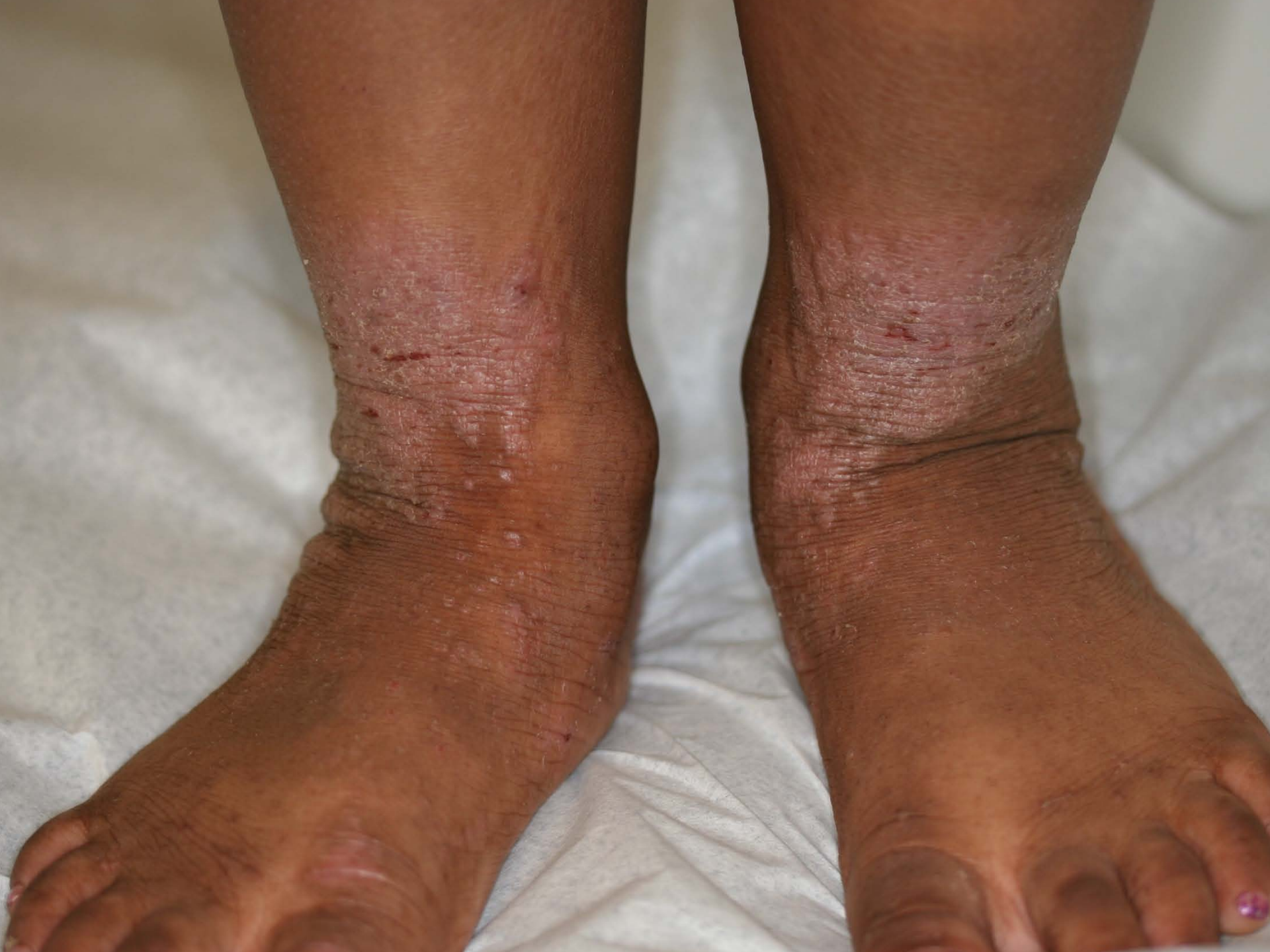


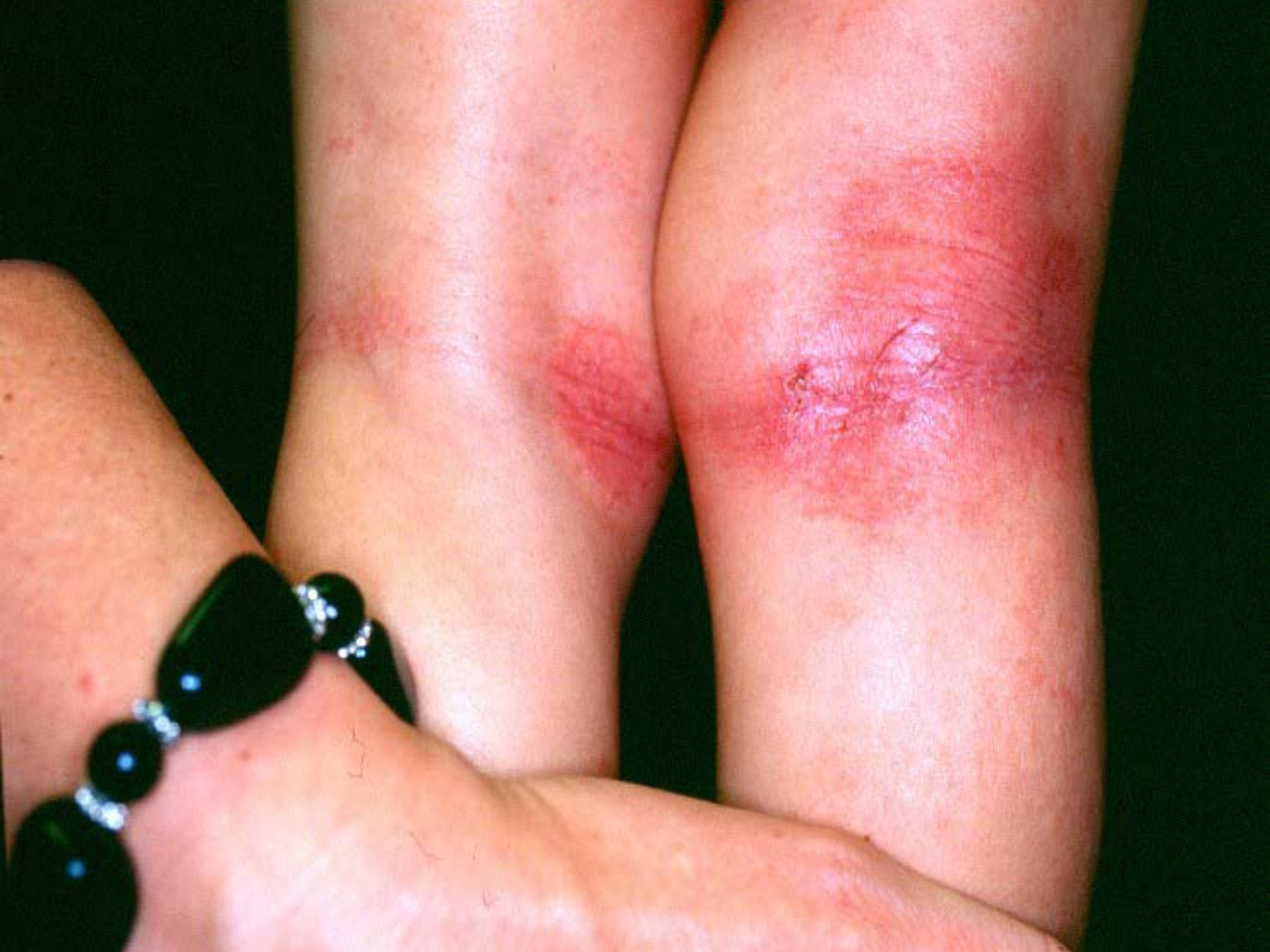


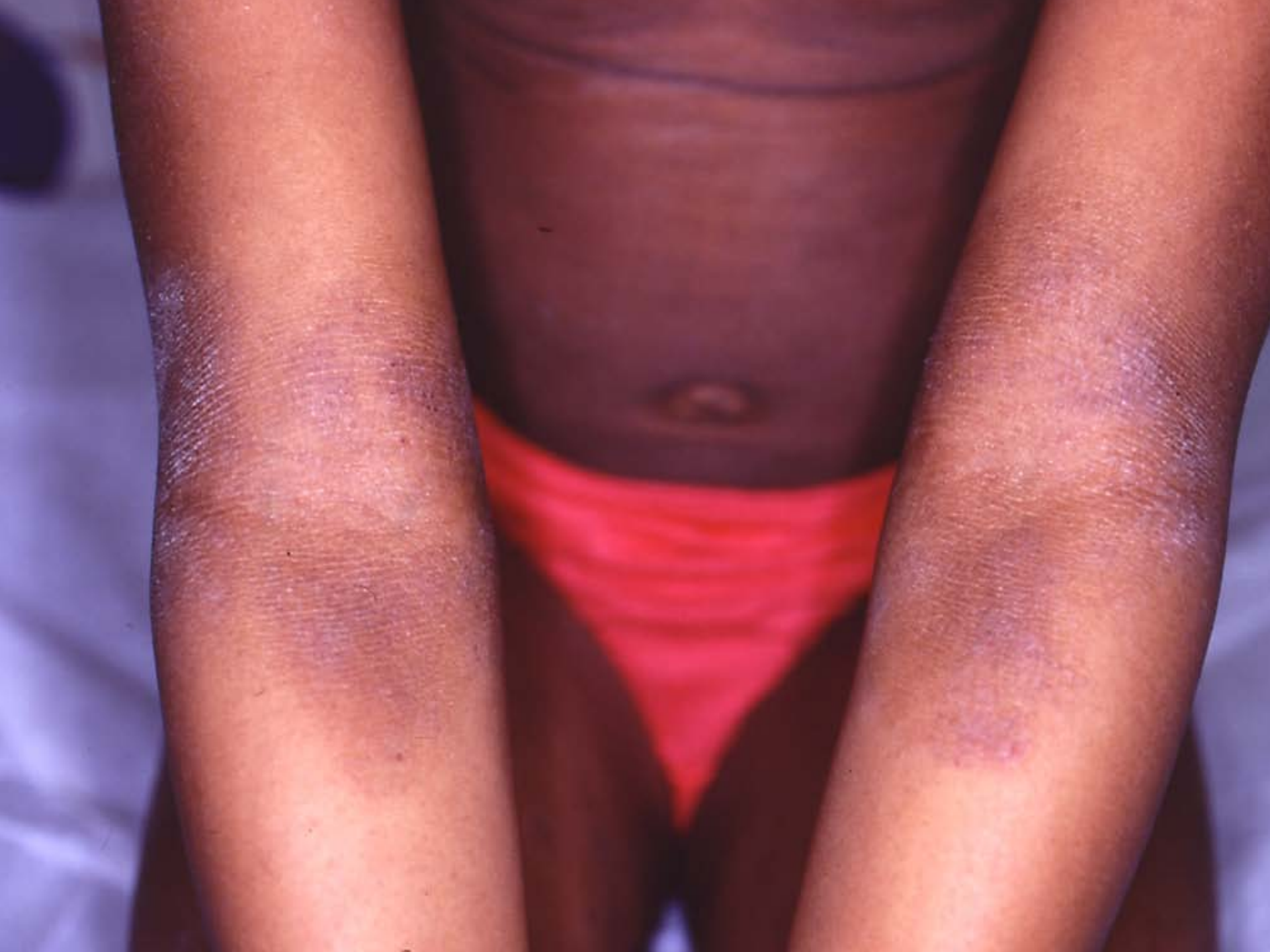
Childhood/Adolescent Phase Features

- Chronic dermatitis
- Lichenification and excoriation
- Flexural surfaces of neck, arms, wrists, ankles, and legs
- Complaints of pruritus









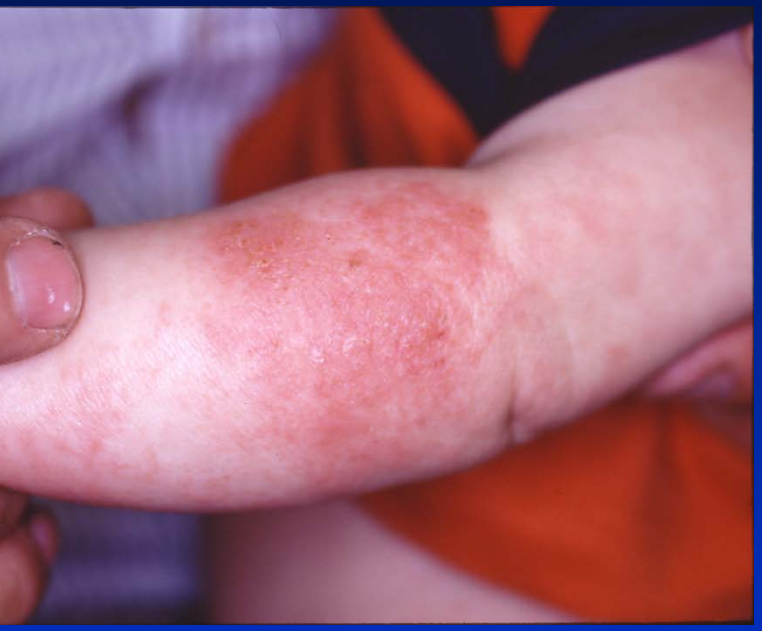
Atopic Dermatitis Treatment

- Appropriate skin care regimen
- Eliminate or avoid triggering agents
- Treat
  - Active inflammation (red, rough areas)
  - Secondary infection
  - Pruritus
- Extensive patient & family education

Skin Care

- Patients with atopic dermatitis have abnormal skin barrier function
- Ointments or creams emolliate better than lotions
- Moisturizers may help repair the skin barrier
  - Promote skin hydration
  - Decrease pruritus
  - Baths may help hydrate the skin if used in conjunction with moisturizers

Inflammation



- When the skin is actively inflamed, anti-inflammatory therapy is necessary
- Topical steroids are still considered first line anti-inflammatory therapy for the treatment of atopic dermatitis in children
- Choose the lowest potency/strength topical steroid which will be effective

Topical Steroids

- Topical steroids should be used no more than twice daily
- Applied in combination with an emollient
- As inflammation subsides, attempt to decrease the strength/potency of topical steroid and/or frequency of use
- When inflammation recurs, restart topical steroid

Associated Co-morbidity of Atopic Dermatitis

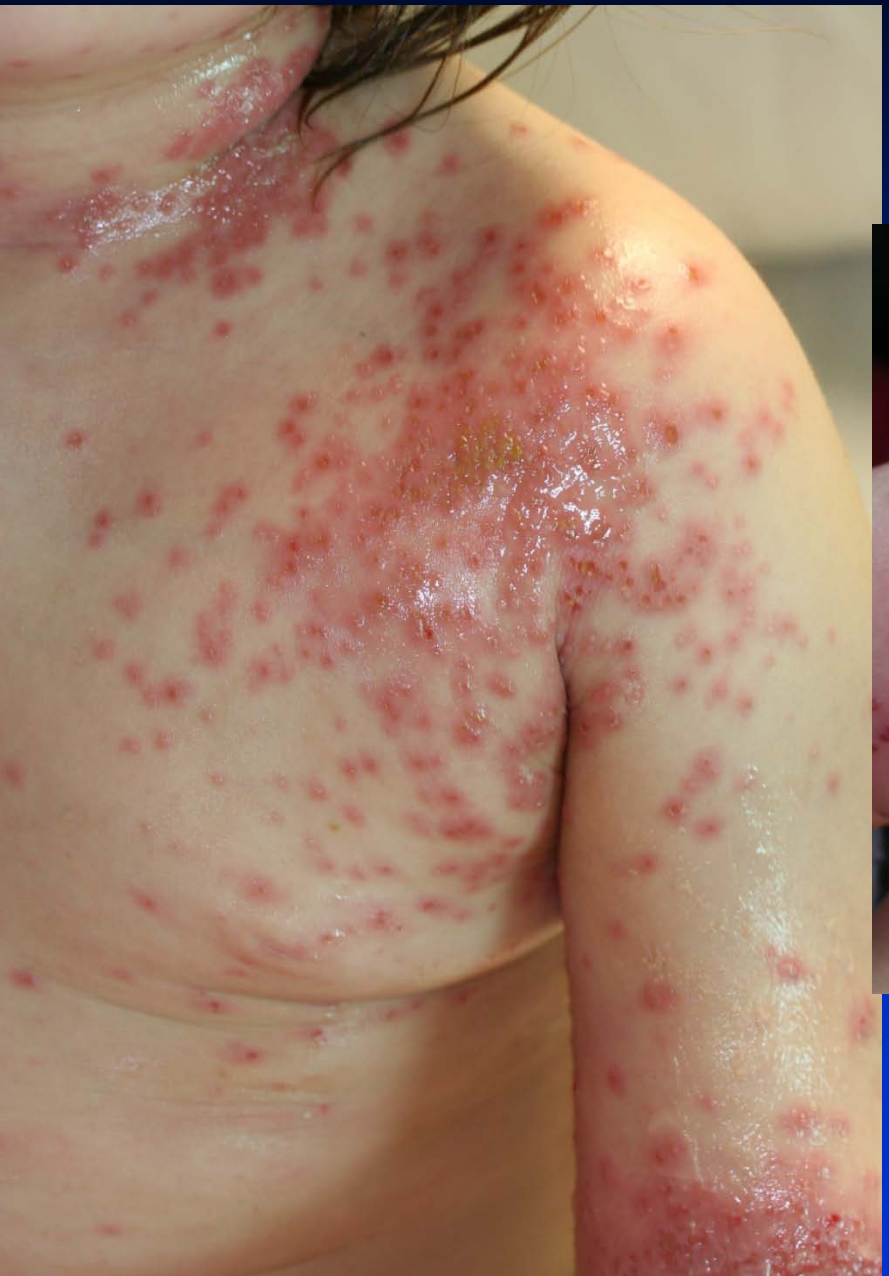
- Children with atopic dermatitis have notable differences in sleep
  - Greater difficulty falling asleep
  - Frequent night awakening
  - Daytime sleepiness, behavior problems
- Psychosocial effects
  - Quality of life

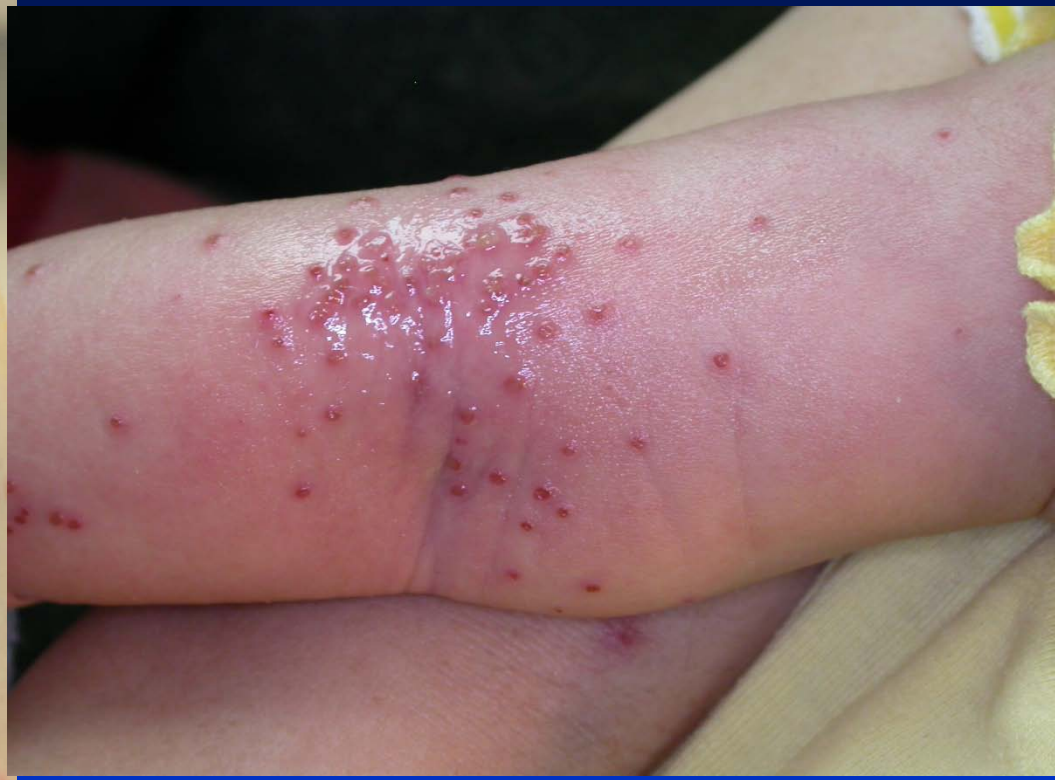
Infections and Atopic Dermatitis

- Patients with atopic dermatitis are more susceptible to cutaneous viral & bacterial infections
  - *Herpes simplex* (eczema herpeticum)
  - Molluscum contagiosum
  - Human papilloma virus (warts)
  - *Staph aureus* (impetiginization)

Eczema Herpeticum

- Usually due to generalized type 1 Herpes simplex infection in patients with underlying atopic dermatitis
- Can masquerade as a severe sudden flare of atopic dermatitis or secondary bacterial infection
- Multiple superficial vesicles that evolve to form punched out erosions



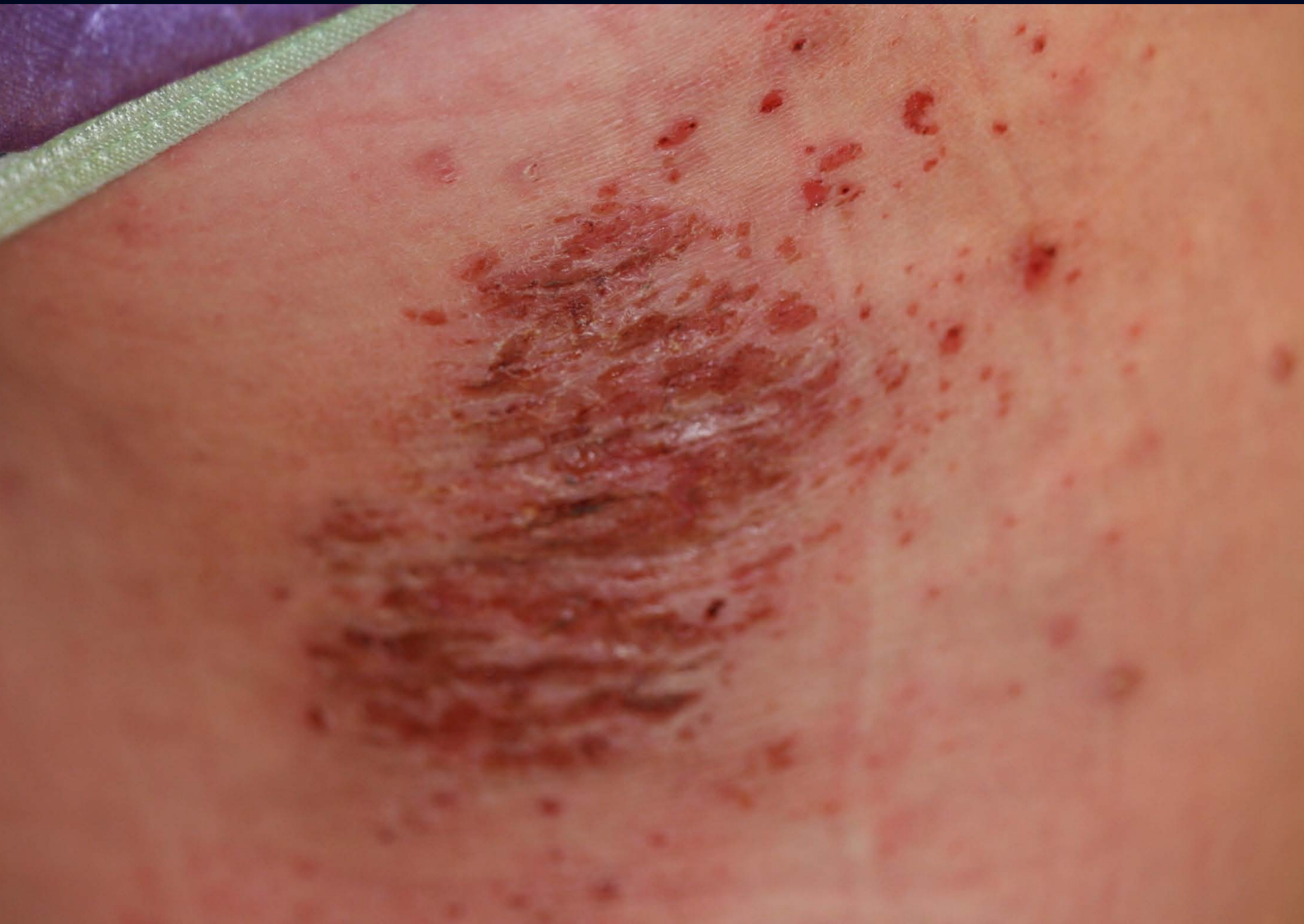


Treatment of Eczema Herpeticum

- Recommend obtaining viral culture, DFA, HSV PCR
- Stop topical steroids or topical calcineurin inhibitors
- Systemic acyclovir at high doses
- May require IV therapy and hospitalization
- Often requires systemic antibiotics due to secondary impetiginization
- Bland emollients
- Contact isolation.

Bacterial Infections

- 90% of patients with atopic dermatitis are colonized with *Staph aureus*
- *Staph aureus* has increased adherence to the skin of atopics
- Presence of *Staph aureus* can be associated with an exacerbation of atopic dermatitis
  - Oral antibiotics are often necessary to treat secondary infection

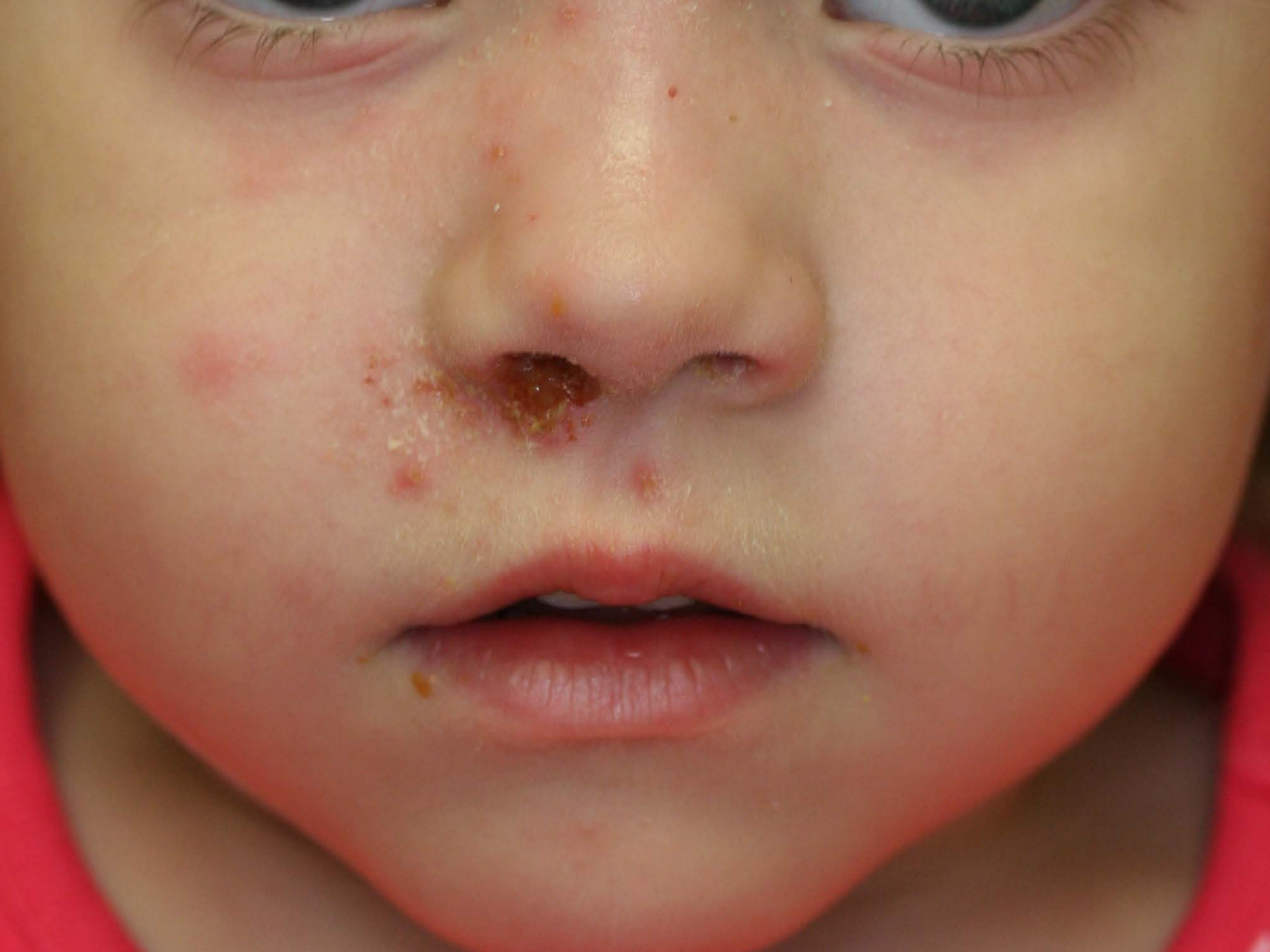


Impetigo

- Most common bacterial skin infection in children
- Predominant organisms: *Staph aureus* (most common) & *Strep pyogenes* (GAS)
- More common in hot humid climates
- May occur at sites of trauma
- Can spread by direct skin contact

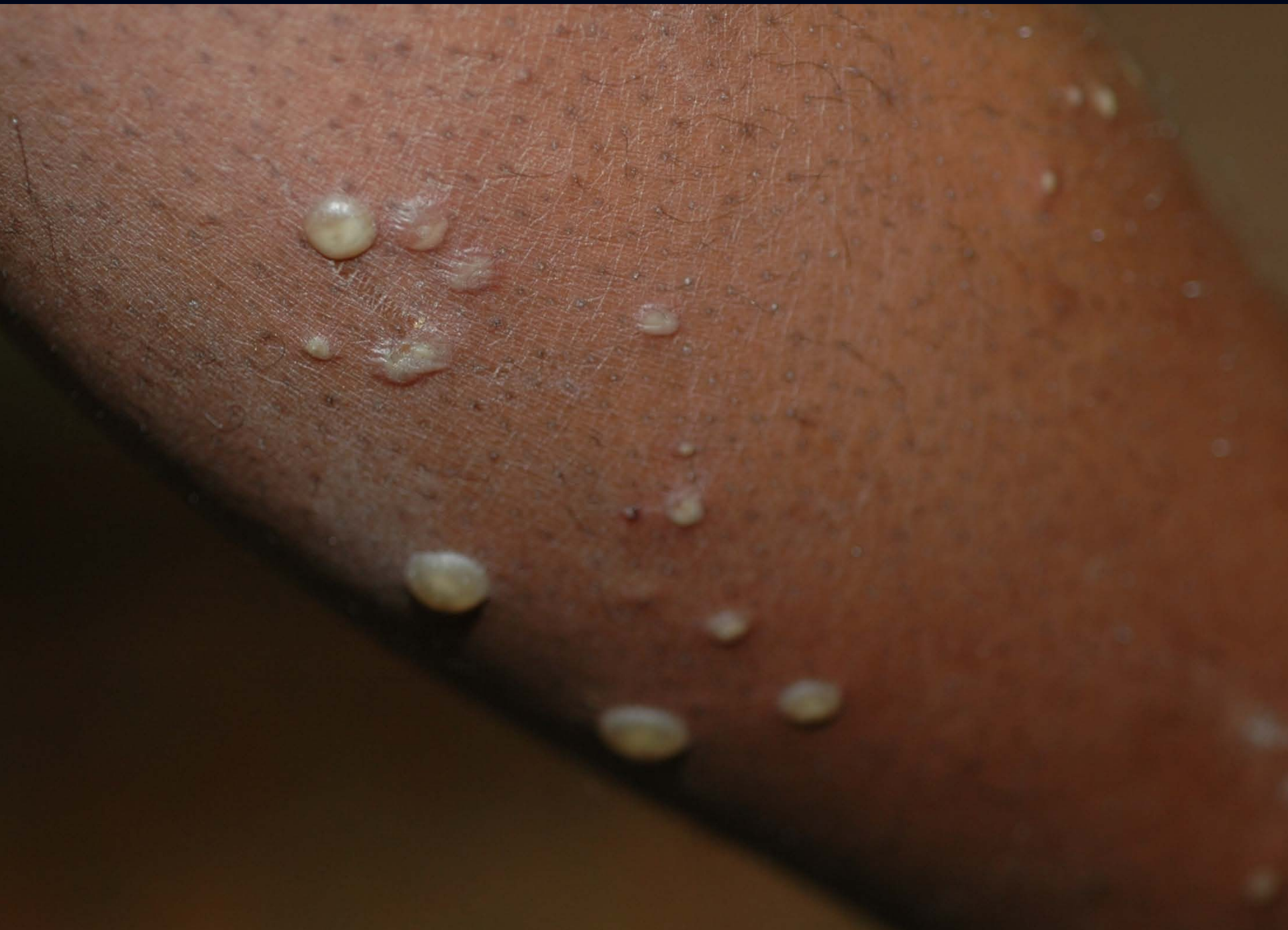
Non-bullous Impetigo

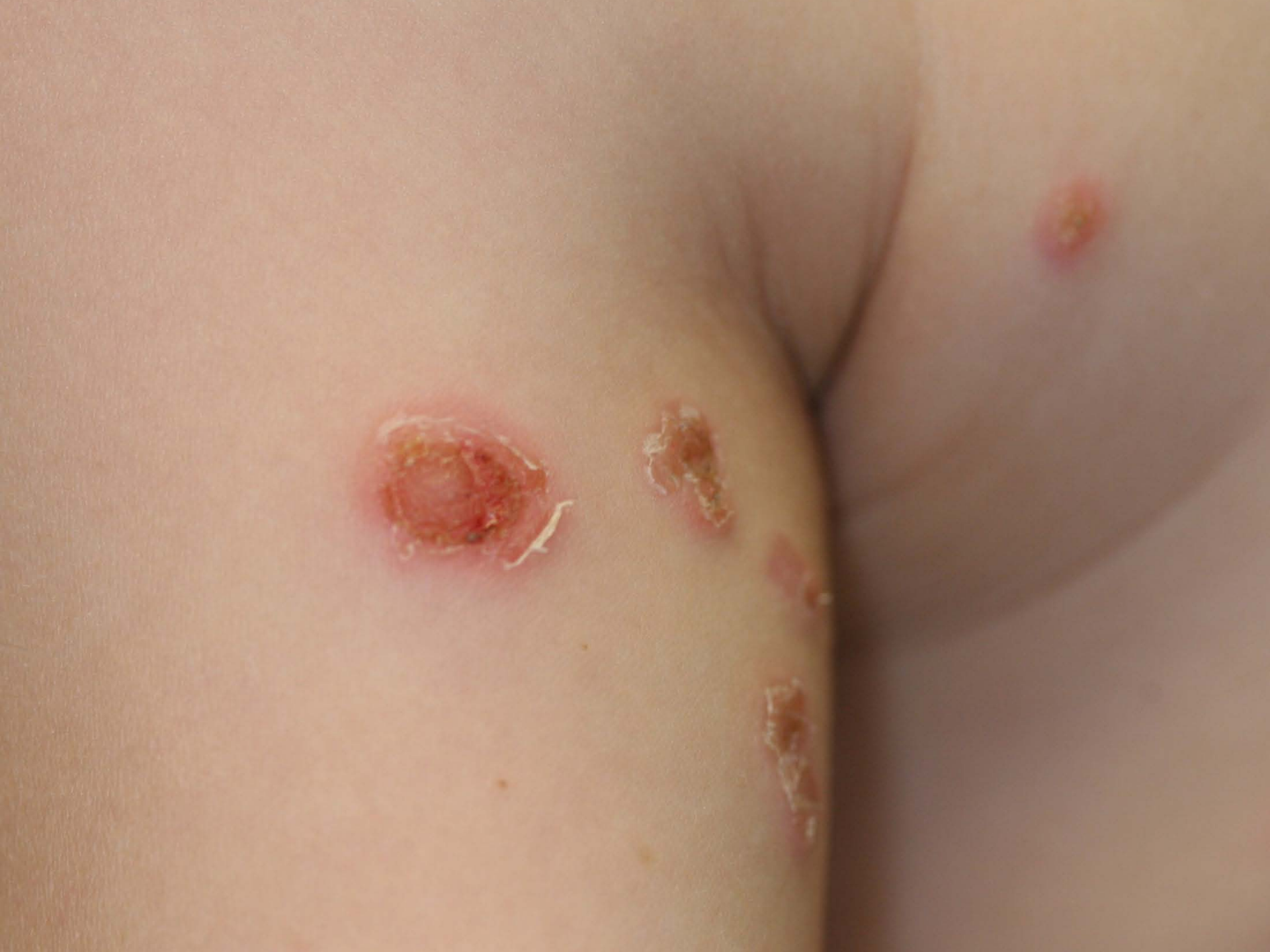
- Non-bullous impetigo-70% of cases
- Begins as erythematous macules and papules which develop into pustules
- Eventually pustules rupture leaving erosions covered by honey-colored crust
- Associated pruritus or pain
- Common sites: perinasal, perioral, & extremities



Bullous Impetigo

- Bullous impetigo-30% of cases
- Flaccid blisters with cloudy fluid
  - Rupture easily leaving shallow erosions and well demarcated collarettes of scale
- *Staph aureus* present in blister fluid
  - Releases exfoliative toxin that leads to blister formation
- Obtain culture from blister fluid



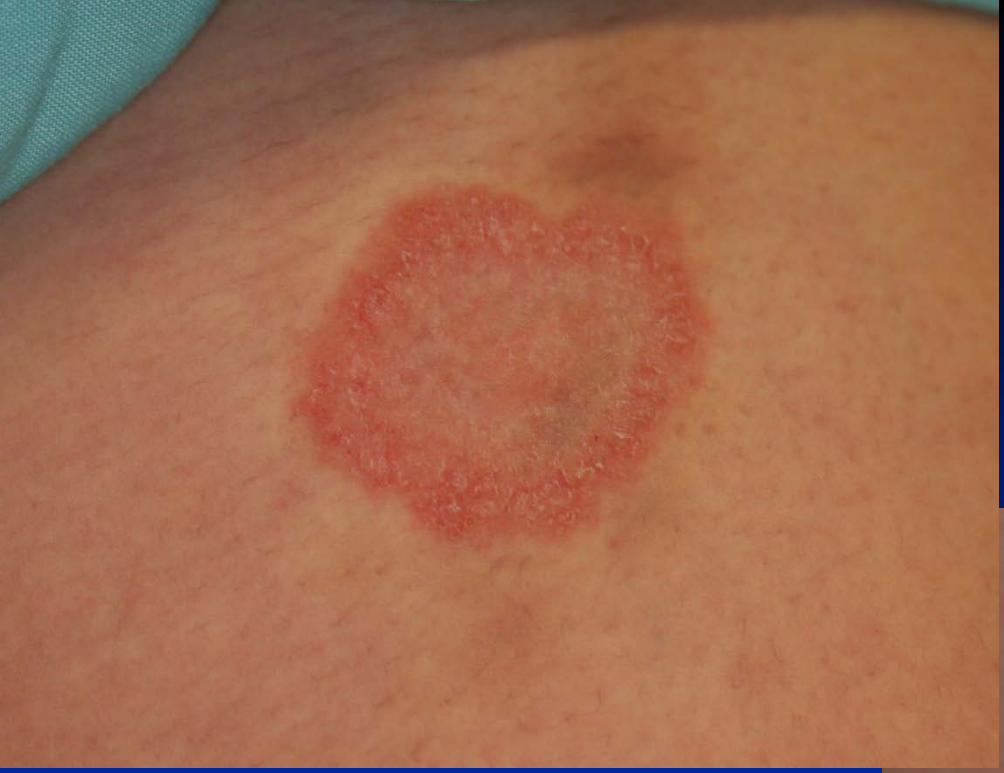


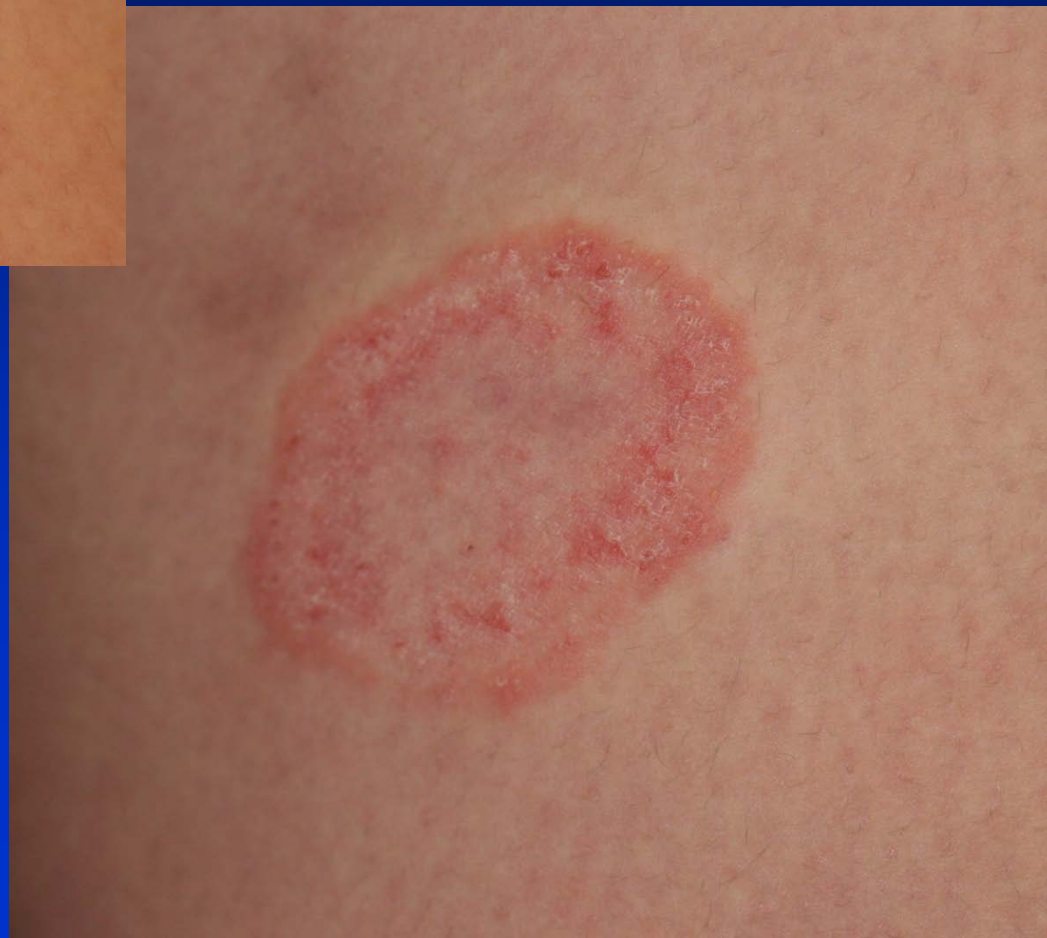
Work-up & Treatment of Impetigo

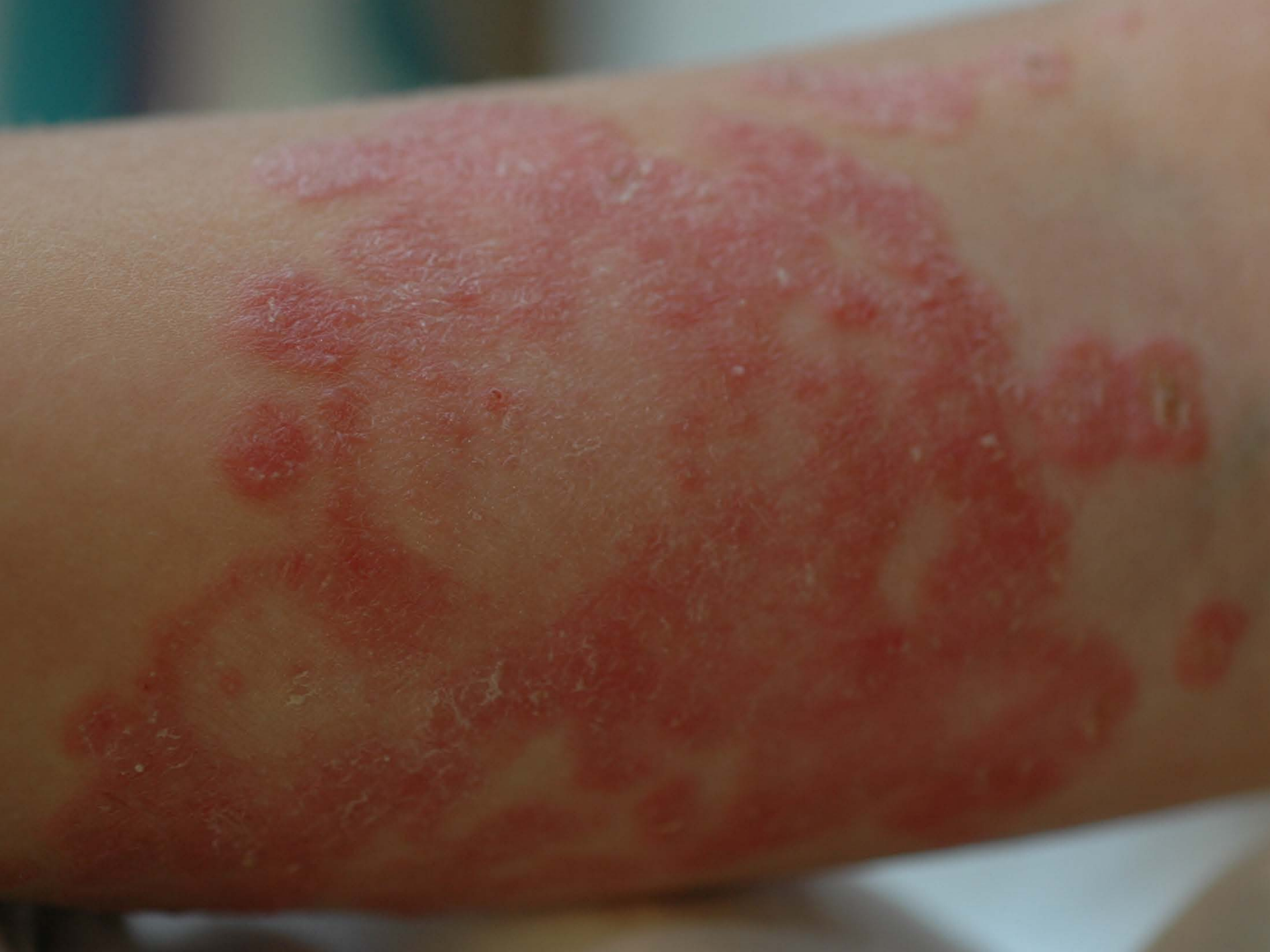
- For small isolated areas-topical antibiotic
- Systemic antibiotics are often necessary for larger areas of involvement or bullous impetigo
  - Cephalexin
  - Dicloxacillin
- Concern of resistant organisms (MRSA)
  - Bacterial wound cultures identify antibiotic susceptibilities
    - Clindamycin or Trimethoprim sulfamethoxasole may be options
- Local skin care

Tinea Corporis

- Well demarcated, annular, erythematous scaly plaques
- May have central clearing
- May have inflammatory papules or pustules in the advancing edge
- Usually pruritic



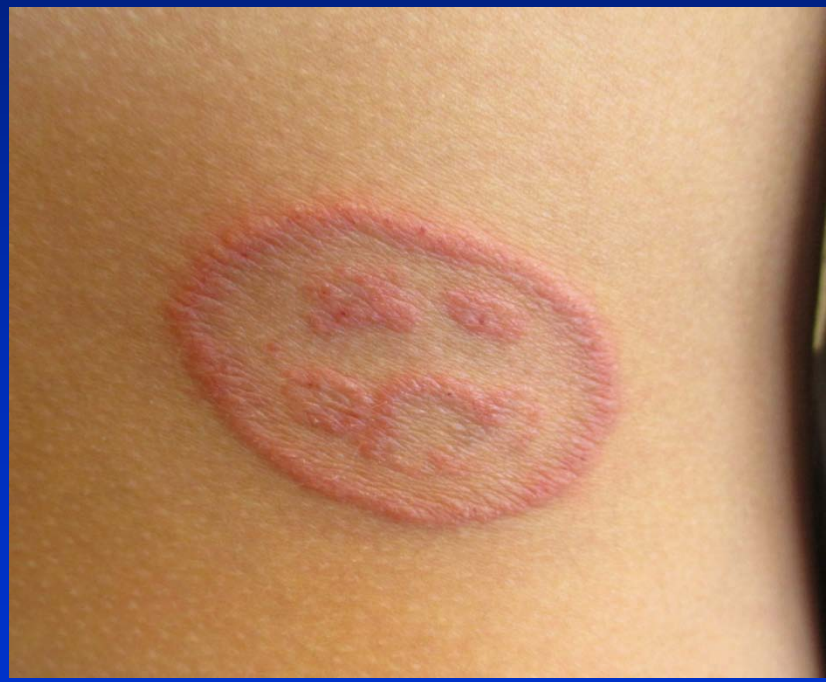




Tinea Corporis

- Topical treatment used twice daily to lesions and surrounding 1 cm area for 2-4 weeks

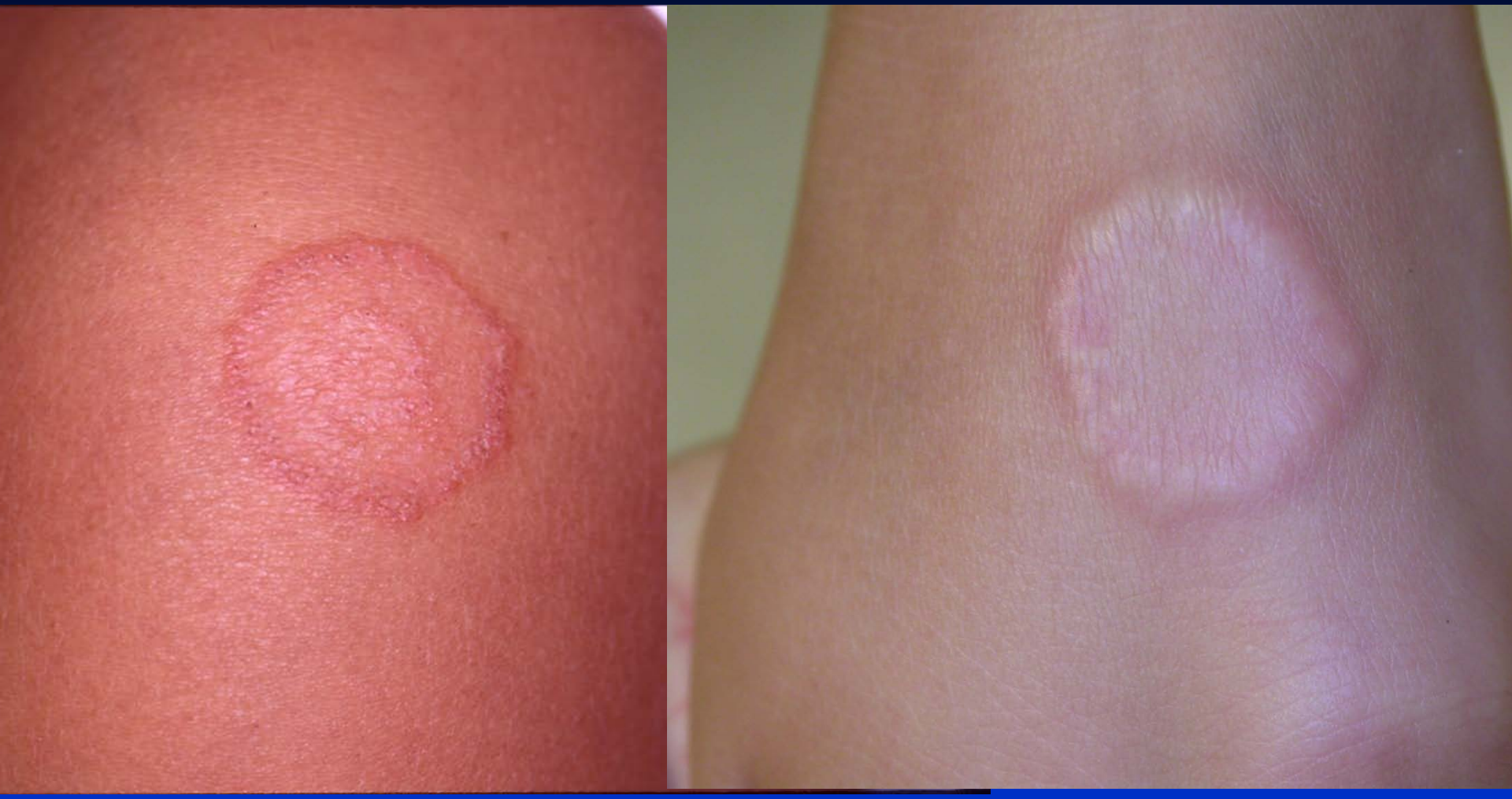
- Allylamines
  - Terbinafine 1% cream
- Imidazoles
  - Econazole 1% cream
  - Ketoconazole 2% cream
  - Clotrimazole cream
- Hydroxypyridone
  - Ciclopirox cream



Tinea Corporis

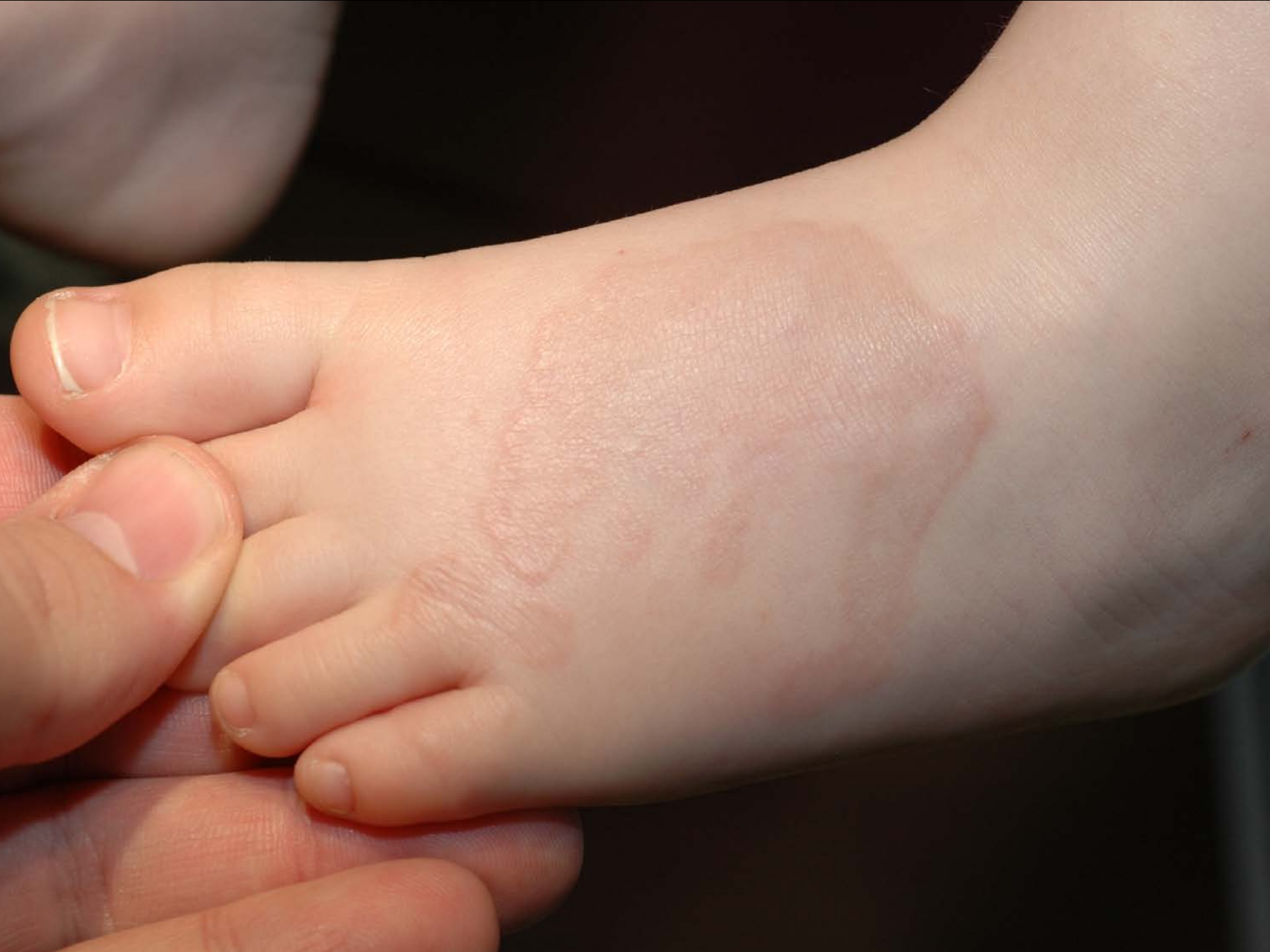
- Systemic therapy
  - Indicated for diffuse infection, not responsive to topical therapy
  - Immunocompromised patients
  - Always needed to treat tinea capitis

- Griseofulvin
- Itraconazole
- Terbinafine
- Fluconazole



Granuloma Annulare

- Skin colored subcutaneous papules or nodules often grouped in a ring configuration
  - No scale! (often misdiagnosed as ring worm)
  - Borders may be elevated
- Most commonly located on the feet, ankles, shins, and dorsal hands
- Usually asymptomatic
- Enlarge over time with central clearing
  - Size range from 0.5 cm to 3-5 cm



Granuloma Annulare

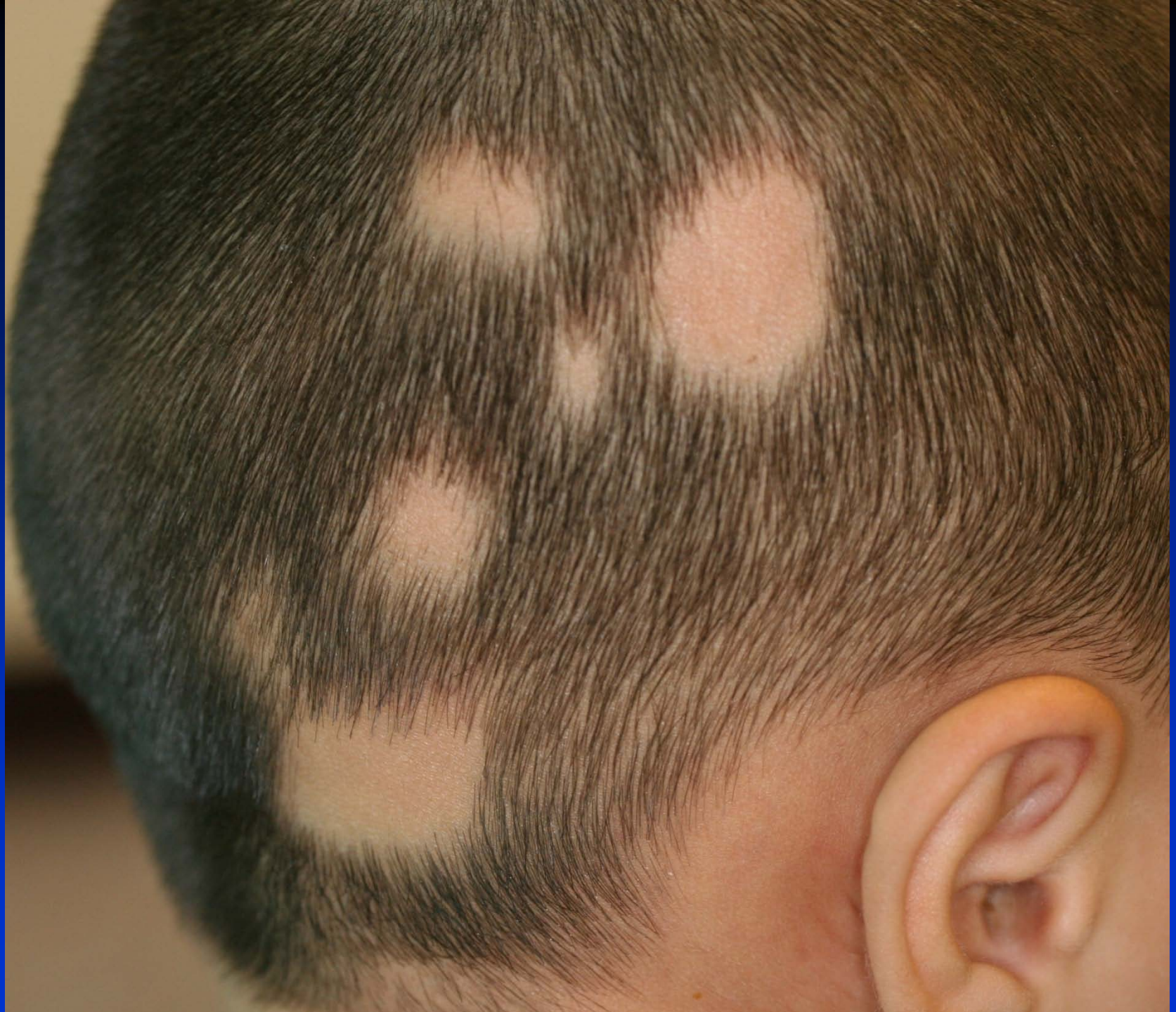
- Unknown etiology
- Histology is diagnostic
- Usually resolve spontaneously over many months to years
- Limited therapeutic options

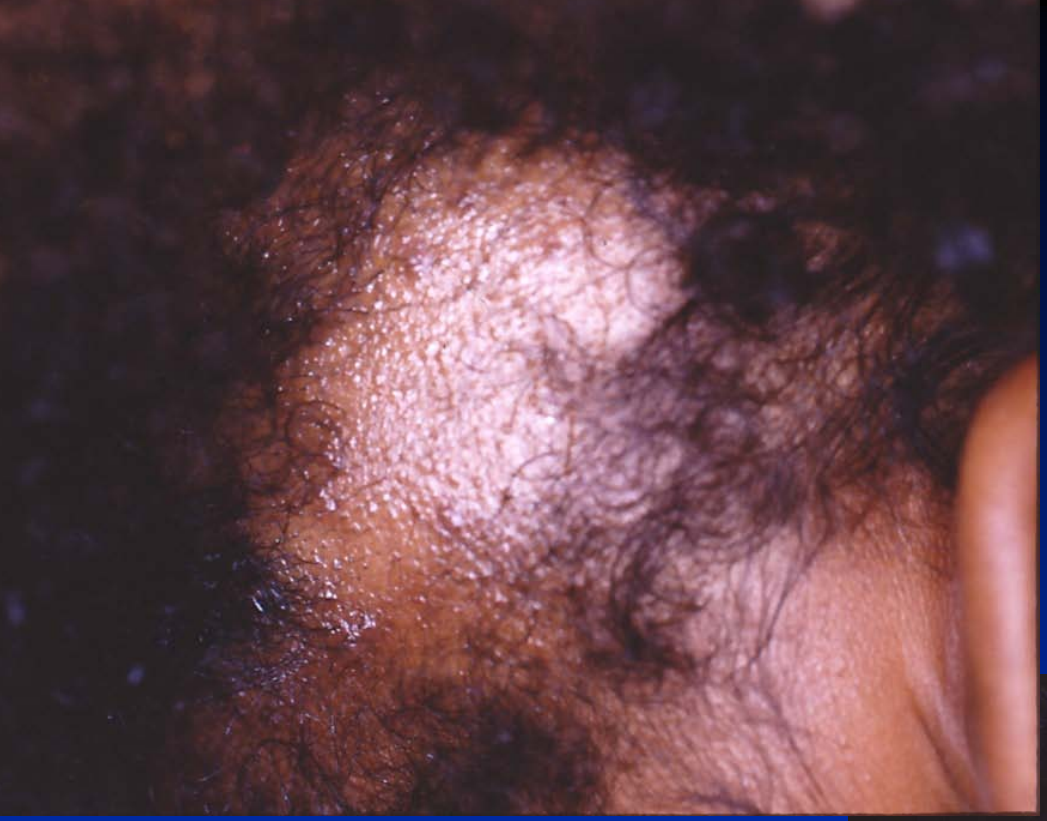
Alopecia Areata

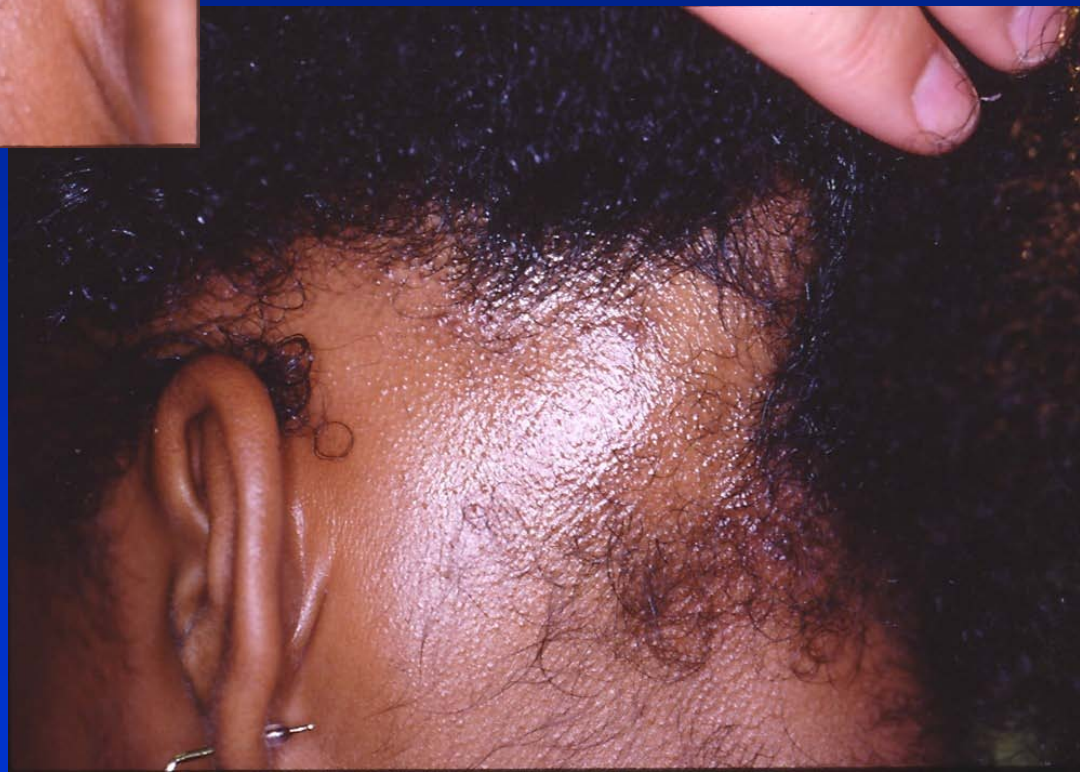
- Acquired non-scarring alopecia (bald spots)
- Cause is unknown, but autoimmune basis is hypothesized
- Males=females
- 20% of all cases occur in children
- Family history of alopecia areata is common
- Commonly seen in families with autoimmune diseases
  - Vitiligo, thyroid disease, rheumatoid arthritis, diabetes

Alopecia Areata

- Hair loss in circumscribed areas
  - May have several patchy oval or round areas
- Frontal, parietal areas commonly affected
- No underlying skin changes (no scale, erythema, or pustules)
- Usually asymptomatic







Alopecia Areata

- Prognosis:
  - Spontaneous remission is common with limited patchy hair loss if <1 year duration
  - 1/3 will have future episodes
  - ~10% will have chronic course
  - Worse prognosis if more diffuse involvement upon initial presentation
- Support Group and Information
  - National Alopecia Areata Foundation
    - www.naaf.org

Alopecia Areata Treatment

- Treatment options: (not FDA approved)
  - Active nonintervention
  - Supportive psychotherapy
  - Wigs/hair bands
    - Locks of Love www.locksoflove.org
  - Topical steroids
  - Intralesional steroids
  - Contact sensitization
    - Squaric acid, Anthralin

Alopecia Areata

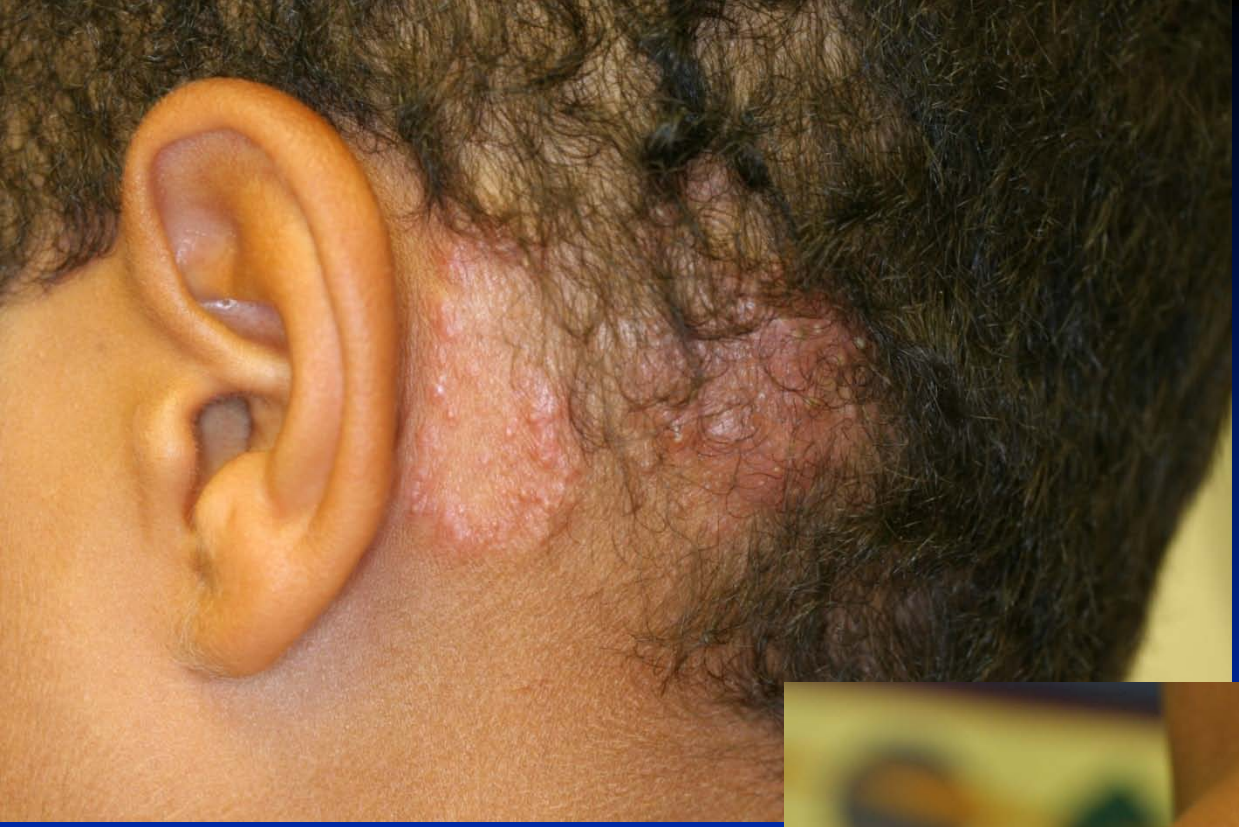
- Differential diagnosis includes
  - ***Tinea capitis***
  - ***Telogen effluvium***
  - ***Trichotillomania***
  - Traction alopecia

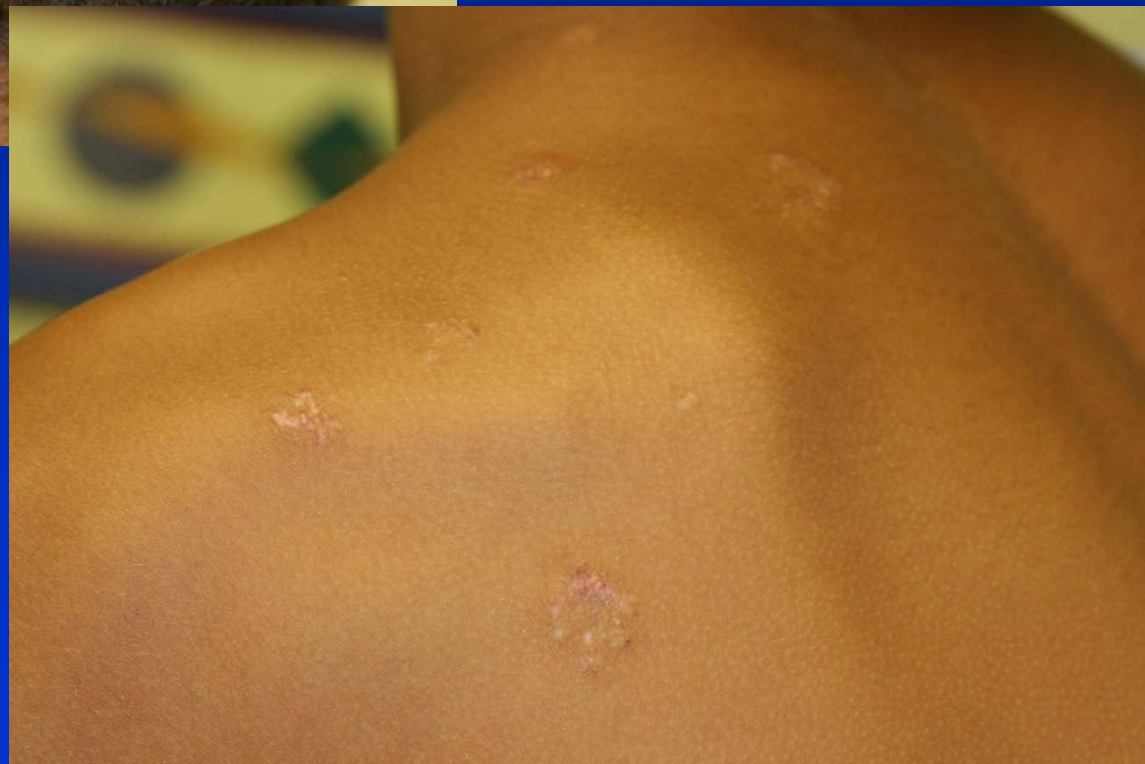
Tinea Capitis

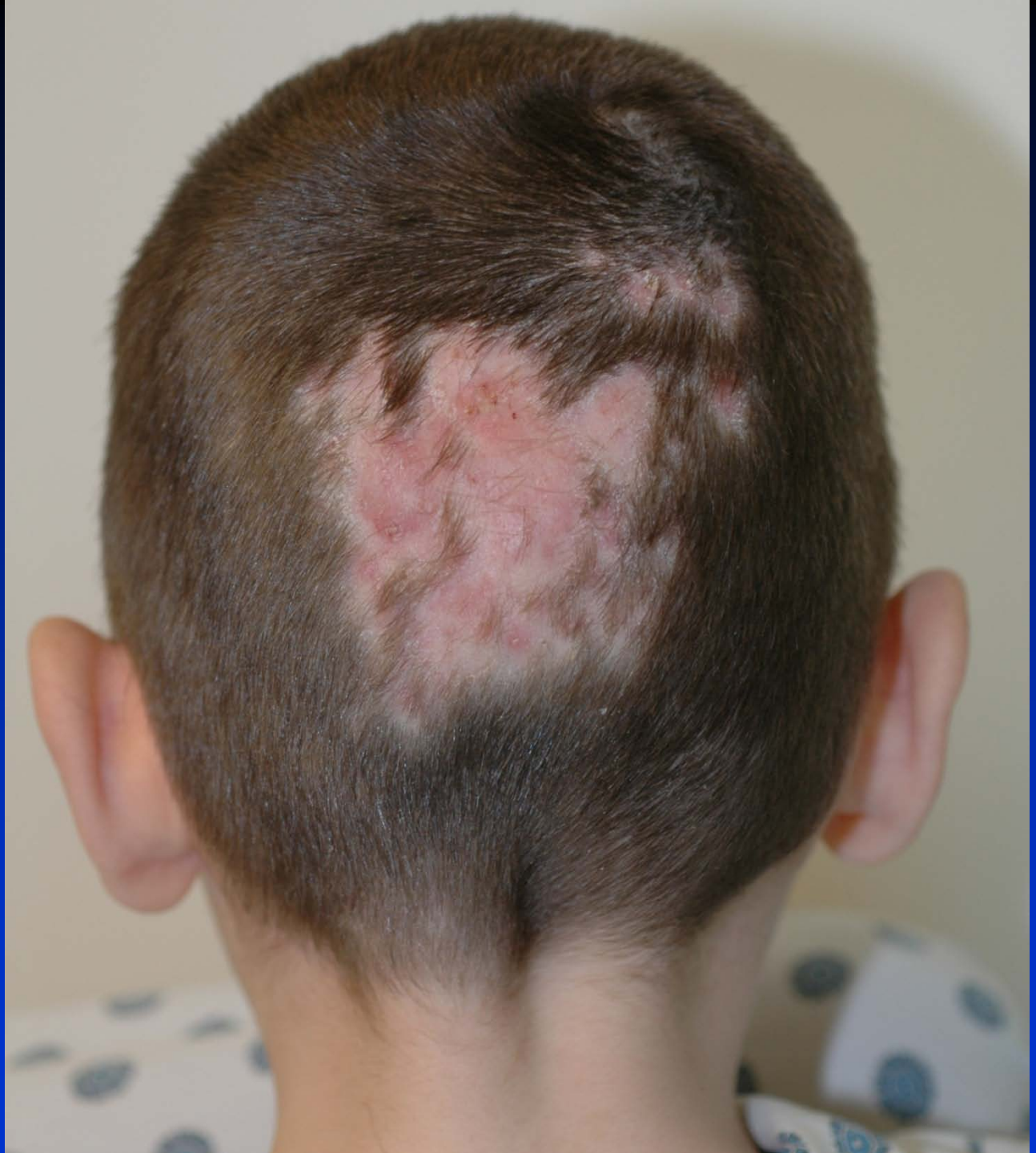
- *Trichophyton tonsurans* is the most common dermatophyte to cause tinea capitis in the United States
- Humans are the main reservoir
  - More common in African Americans
  - Most common in 3-7 year olds
- "Classic clinical triad"
  - Scalp scaling, alopecia, & cervical adenopathy

Clinical Features

- Seborrheic type:
  - Diffuse scaling/dandruff, may have subtle hair loss
- “Black dot” type:
  - Patches of hair loss with broken hairs at follicular orifice
- Inflammatory type:
  - Pustules, abscesses, or kerions
    - Higher risk of scarring







Tinea Capitis Treatment

- Requires systemic treatment
- Griseofulvin
  - Gold standard
  - Good safety profile
  - Due to resistance, dosing may need to be higher than recommended on the package insert for 6-8 weeks
  - Absorption dependent on dietary fat intake
- Terbinafine
  - Another possible option with shorter treatment duration

Telogen Effluvium

- Acquired hair thinning (can be diffuse)
- Rapid conversion of scalp hairs

  Growing phase → Resting phase (>25%)
- Normally: 85-90% is growing (anagen)

  10-15% is resting (telogen)
- Acute stressful events act as trigger
- No areas of focal alopecia, scale, or erythema
- May develop several months after a high fever, illness, surgery, traumatic or stressful event

Telogen Effluvium

- Diagnosis:
  - History of proceeding event
  - Clinical exam
  - Consider obtaining CBC, iron studies, thyroid studies
- Treatment:
  - Reassurance & time

Trichotillomania

- Self induced hair loss resulting from pulling, rubbing, or twisting
- Individual often denies pulling hair
- Preadolescence is most common age of onset
- Hairs of varying lengths often in an unusual pattern
- Scalp>eyelash>eyebrow

Trichotillomania

- Treatment
  - Psychiatric referral
  - Cognitive behavioral therapy by an experienced therapist
  - Medications
    - Antidepressants

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