

20- Diaper Dermatitis

Background

- Affects 25-50% of pediatric patients
- Caused by a combination of mechanical forces and alkaline pH of waste material

PEARL: Normal skin pH ranges from 4 to 7, which is protective. Under a more alkaline environment, skin is more prone to irritants and *Candida*.

- Differential Diagnosis (Think **SCAMP**):
 - o Seborrheic dermatitis
 - o *Candida* or Contact dermatitis (irritant or allergic)
 - o Atopic dermatitis (uncommon) or Acrodermatitis enteropathica
 - o Miliaria
 - o Psoriasis or Perianal strep
- Others:
 - o Langerhans cell histiocytosis, granuloma gluteale infantum, Kawasaki dz

History

- How often are parents changing the diaper? (should be at least 6-7x/day)
- How do they cleanse the diaper area? Use of wet wipes, washcloths, soap?
- Use of barrier ointment/paste? Using enough?
- How is baby feeling?
- Any recent diarrhea (more irritating) or antibiotic use (predisposed to *Candida*)?

Clinical Presentation:

Seborrheic Dermatitis

- Often present w/ coexisting cradle cap+ salmon pink dermatitis in diaper area (folds)

Candida

- Bright red erythema, involvement of skin folds (+/- scrotum), and satellite papules and pustules at the periphery of dermatitis
- May also have thrush + hx of recent antibiotic use
- If severe, pt may also get 2^o Id rxn

Contact Dermatitis (Irritant) – more common

- Sometimes called “chafing dermatitis”
- Affects convex (outside) areas of the vulva, scrotum, and buttocks and SPARES the folds
 - o SPARES folds b/c irritants like urine and stool cannot reach these areas where skin is touching skin

Contact Dermatitis (Allergic)

- Rubber in diaper elastic or preservative methylisothiazinone in baby wipes

Atopic Dermatitis

- Uncommon considering occlusive nature of diaper maintains moisture
- Hyperlinearity, erythema, and excoriations + classic atopic dermatitis lesions elsewhere
- Personal or FHx of atopy (eczema, hay fever, asthma)

Miliaria

- Caused by the obstruction of sweat ducts under hot and occlusive environments
 - o Feverish + laying in bed all day

PEARL: Miliaria can be subdivided into 3 types:

- 1) Miliaria crystallina (most superficial w/ blockage of sweat duct in stratum corneum): Clear, pinpoint vesicles on a sea of scales.
- 2) Miliaria rubra (sweat duct blockage deeper down in the epidermis) erythematous papules
- 3) Miliaria pustulosa (even deeper blockage) more pustular lesions

Psoriasis:

- Sharply-demarcated, red or pink plaques
- Involves the skin folds and will NOT have classic silvery scale b/c of excessive moisture from occlusive diaper
- Nail changes (10%)

Perianal strep

- Bright red, painful, and pruritic
- Heals w/ desquamation
- May be hx of strep throat in pt or sibling at home
- Diagnosis = Culture

Acrodermatitis enteropathica

- Inherited or acquired zinc deficiency
 - o SLC39A4 gene (inherited)
 - o Acquired may occur with cessation of breast feeding
- Erythema, pustules, and crusted patches or plaques in 3 areas- the diaper area, perioral region, and acral areas
- Diagnosis = decrease zinc levels or low levels of alkaline phosphatase (zinc-dependent enzyme)

Langerhans Cell Histiocytosis

Four Variants

- 1) Letterer-Siwe dz: < 2 y/o w/ poor prognosis
- 2) Hand-Schuller-Christian Syndrome: 2-6 y/o w/ triad of DEB (diabetes insipidus, exophthalmos, and osteolytic bone lesions)
- 3) Congenital Self-Healing reticulohistiocytosis of Hashimoto-Pritzker: skin limited form present at birth
- 4) Eosinophilic granuloma: >7 y/o w/ localized LCH skin lesions and asymptomatic bone lesions

- Yellow-brown crusted papules in the seborrheic distribution of the scalp and diaper areas

PEARL: LCH lesions are more petechial or purpuric, may have lymphadenopathy, lesions respond minimally to tx

Treatment:

Seborrheic dermatitis

- Selenium sulfide
- Topical antifungals (Ketoconazole or ciclopirox)

Candida

- Topical nystatin or azoles

Contact Dermatitis (Irritant)

- Diaper hygiene
- Hydrocortisone 2.5% 2-3x daily

Contact Dermatitis (Allergic)

- Switch to hypoallergenic products + hydrocortisone 2.5% 2-3 daily

Miliaria

- Avoid overheating and occlusion by removing excess clothing, allowing the diaper area to air out as much as possible
- Cooler baths and using fans to cool

Psoriasis

- Hydrocortisone 2.5% 2-3x daily (short-term)
- Topical tacrolimus (long term use)

Perianal Strep

- Topical mupirocin
- Oral amoxicillin

Acrodermatitis enteropathica

- Zinc supplementation
 - o Improves rash in few days