Dermatology for the General Practitioners:

Some Common Pediatric Dermatological Disorders

Kammi Yap Sayaseng, DNP, PNP-BC, IBCLC

CANP Symposium

Sunday, March 22, 2015

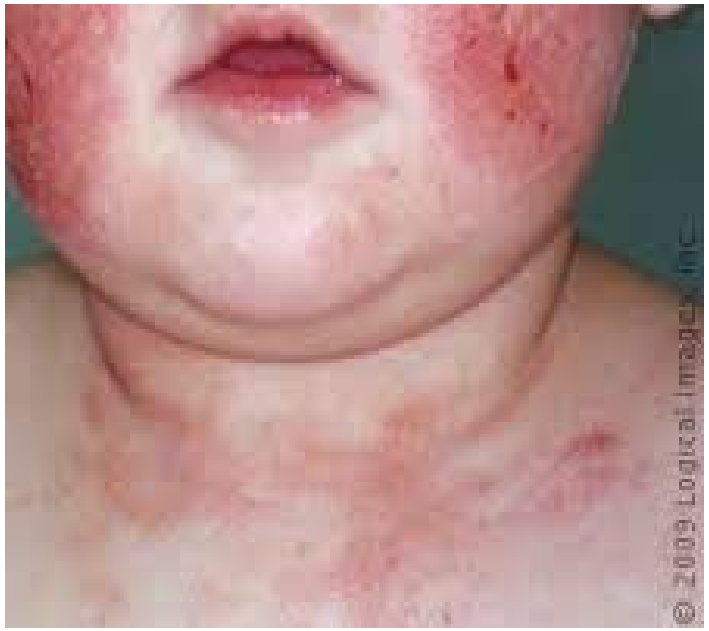
Newport Beach, CA

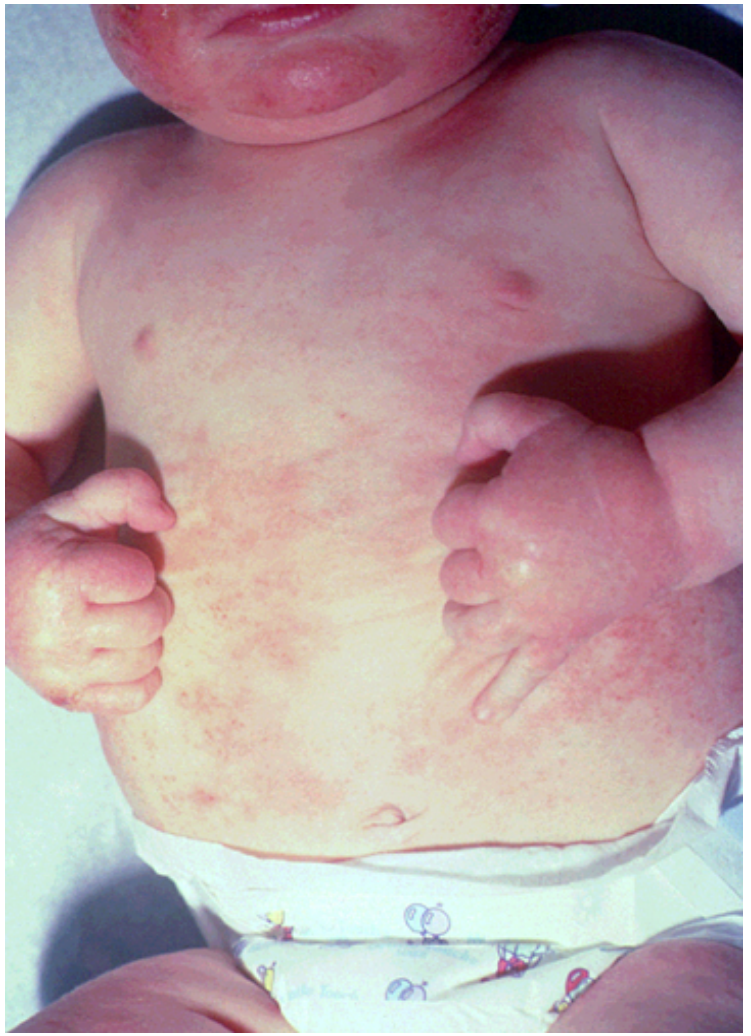
Goals

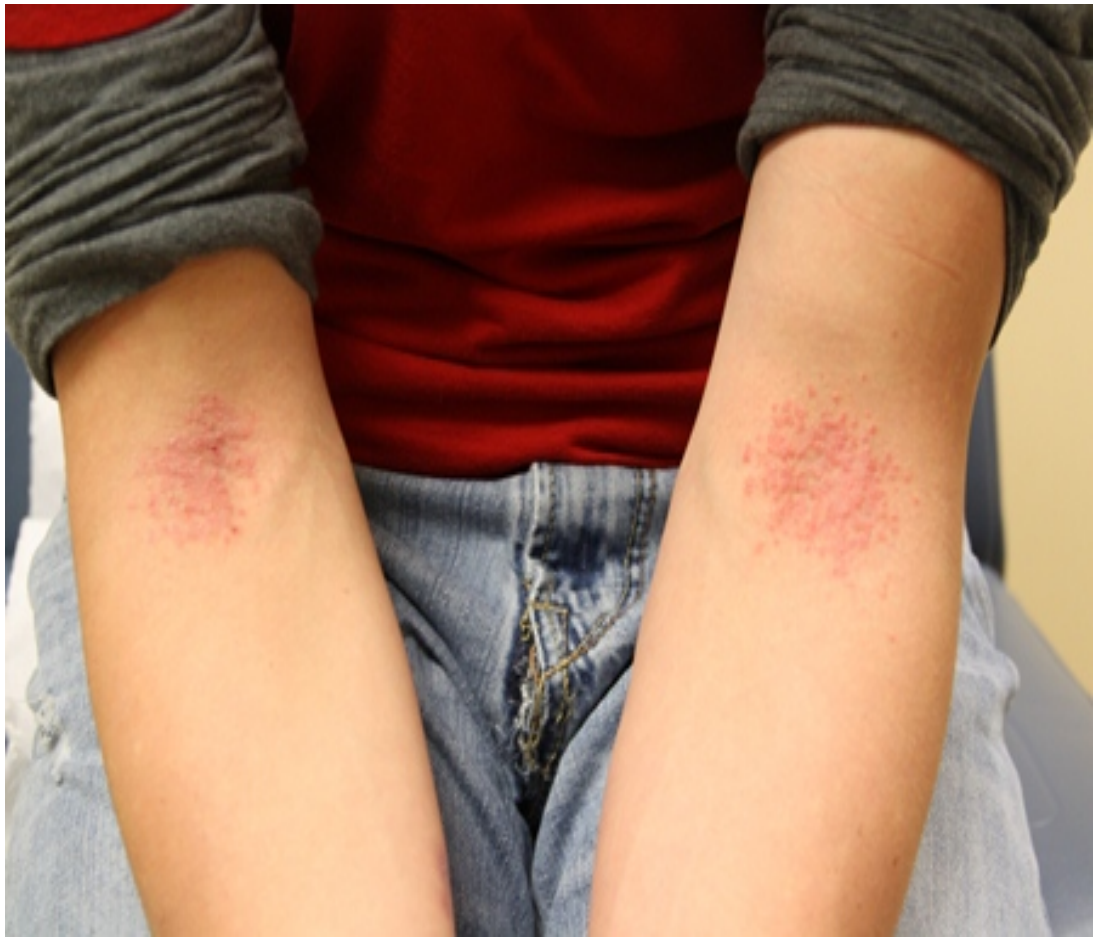
- Discuss some common pediatric dermatological problems; atopic dermatitis, eczema herpaticum, molluscum contagiosum, and cutaneous warts.
- Up-to-date and evidenced-based treatment recommendations for each condition discussed
- Patient education
- When to refer patients to dermatology

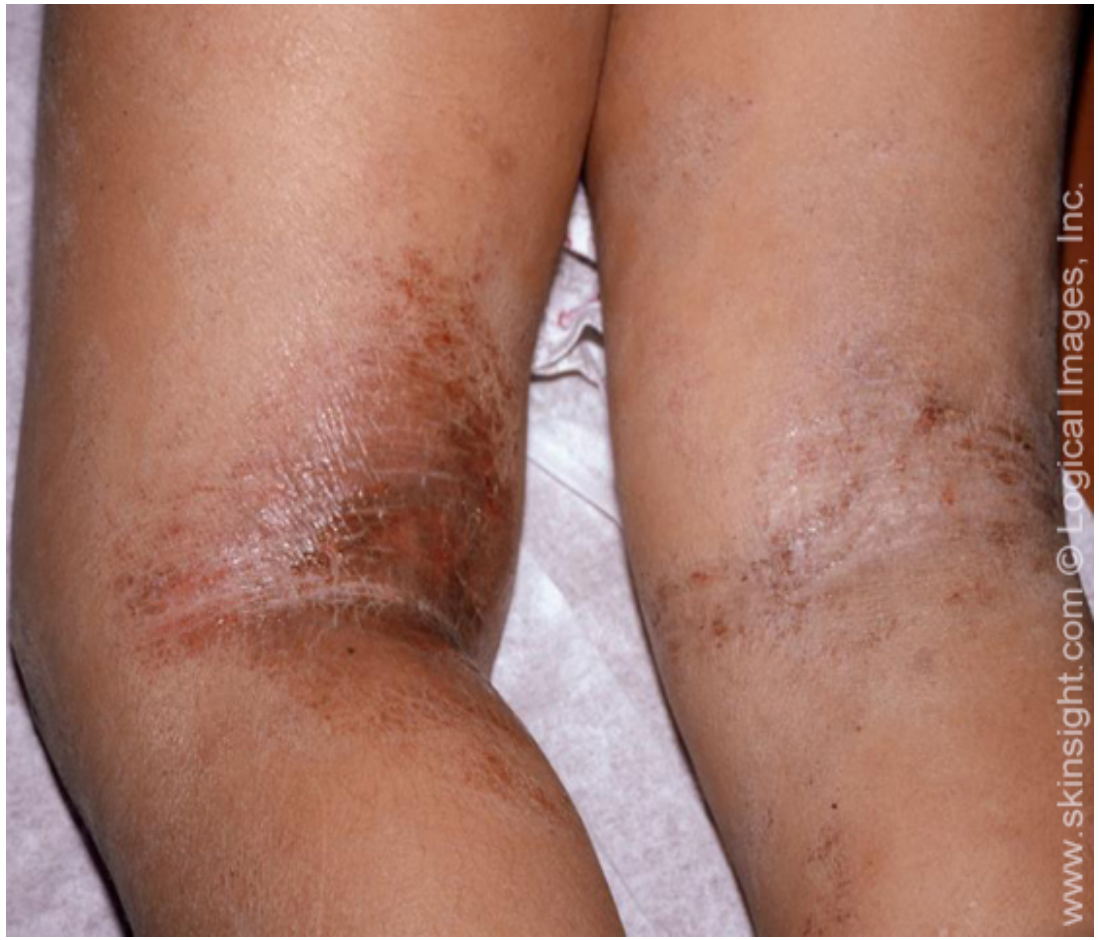
Learner Outcomes

- Recognize common pediatric dermatological disorders discussed in this presentation.
- Able to recommend and or treat common conditions discussed.
- Recognize when to refer patients to dermatology.

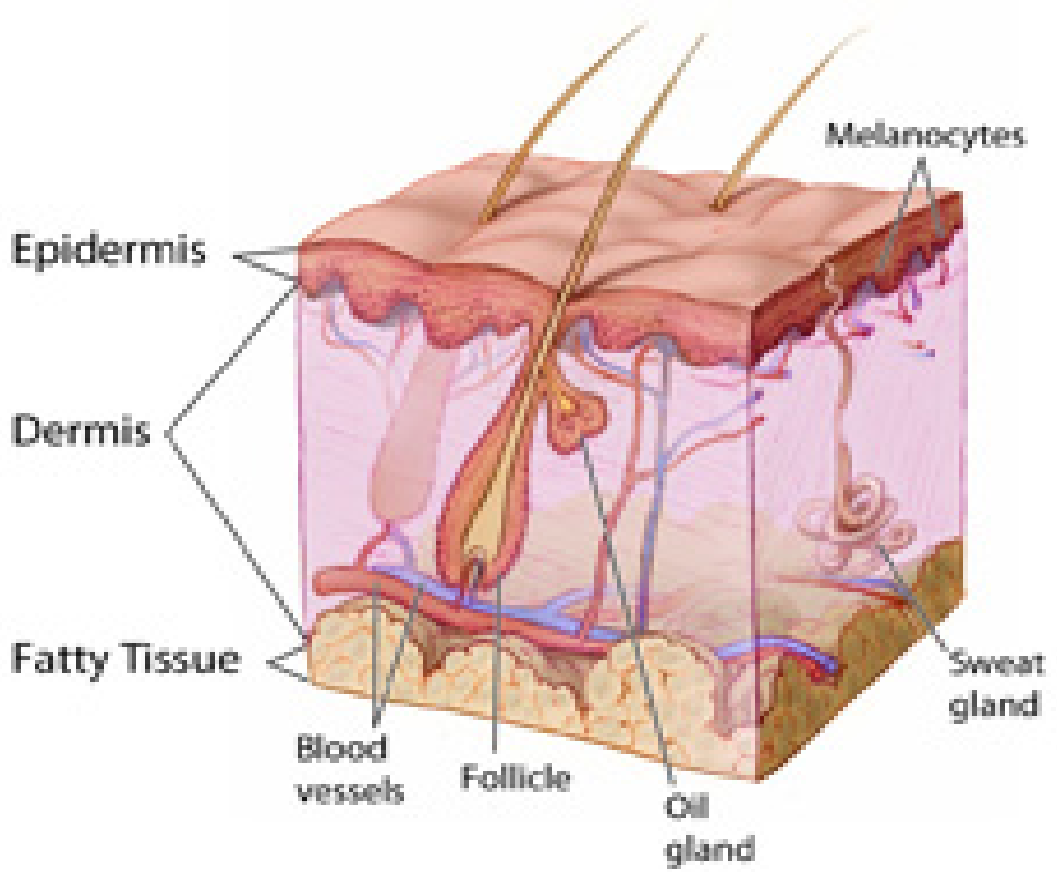

© 2009 Logical Images, Inc.



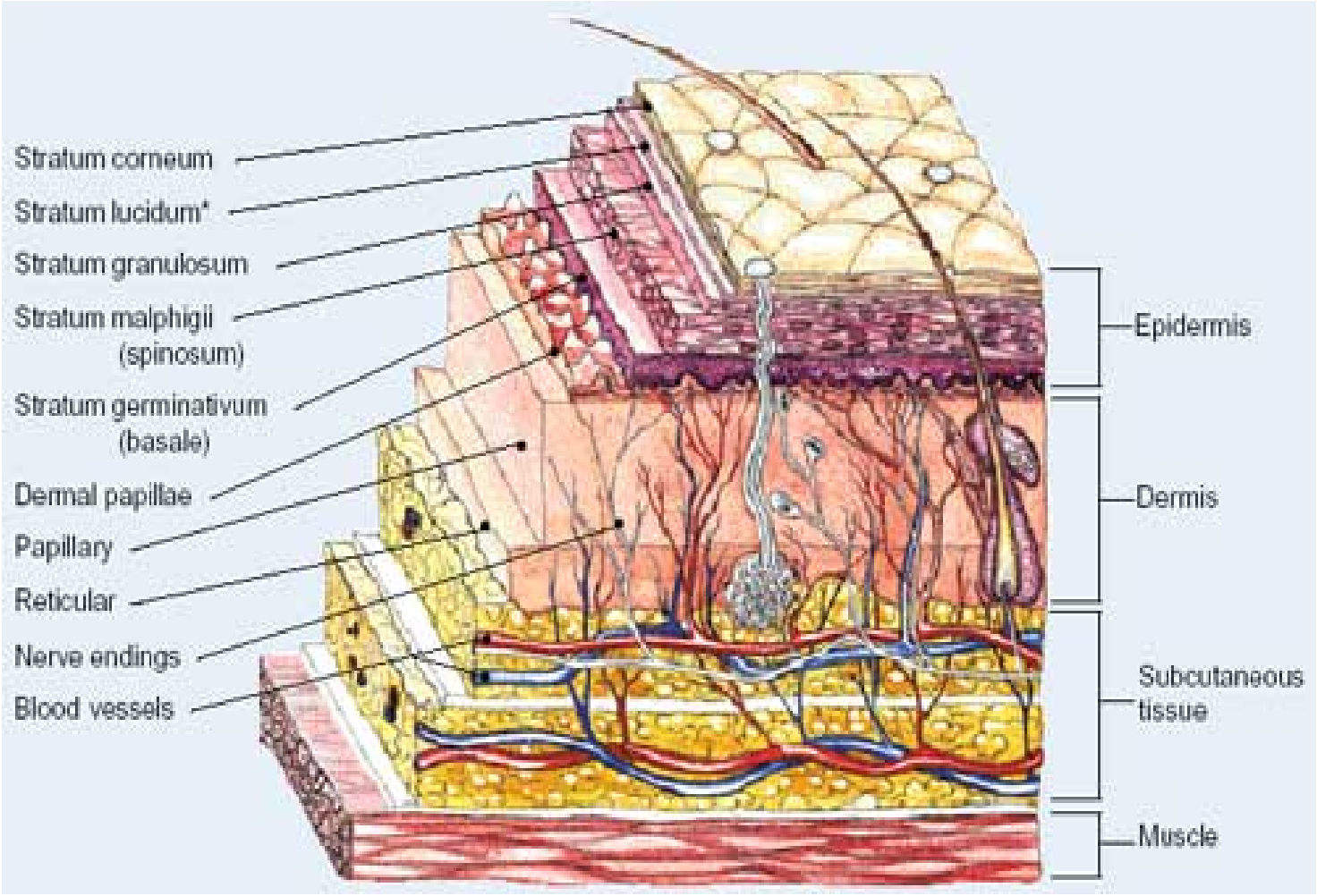



www.skinsight.com © Logical Images, Inc.

Skin Structure



Skin Structure



Atopic Dermatitis (AD) Prevalence

- 5 to 20% of children worldwide
- ~11 -17% in the States
- Onset before age 5 years
- Slightly more in female than males

Atopic Dermatitis or Eczema

- “Dermatitis” and “eczema” used interchangeably
- A genetic defect in the proteins supporting epidermal barrier
- A chronic inflammatory skin condition
- Eczema, asthma, and allergic rhinitis (triad of atopies)

Pathogenesis of Atopic Dermatitis

- Impaired epidermal barrier function
- An immune function disorder

Impaired epidermal barrier function

- Intrinsic structural and functional abnormalities
- Disease evolves from the outside in
- Primary defect, an abnormal epidermal barrier

Epidermis

- First line of defense between the body and the environment
- With intact epidermis, environmental irritants, allergens, and microbes cannot enter the body

Goals of AD treatment:

- Reduce symptoms of pruritus and dermatitis
- Prevent exacerbations
- Minimize therapeutic risks

Atopic Dermatitis Treatments

- Prevention is the best treatment
- Mild soaps, moisturizers, or emollients
- Topical corticosteroids
  - -Use lower strength in thin skin areas (face, armpits, genital areas)
  - -No more than 2 wks of continuously use
- Antihistamine to help control pruritus and aid in sleep

Atopic Dermatitis Treatments, cont’d.

- Antibiotics for superinfection or secondary infection
- Phototherapy (ultraviolet light; adolescents and adults)
- Systemic immunosuppressive agents (use limited by potential side effects)

Moisturizers and Emollients

- Used interchangeably
- Emollients, “to soften”; reduces water loss from the epidermis
- Moisturizer, “to add moisture”
- Both have two actions:

  1. Occlusive---provides layer of oil on surface of skin to slow water loss → ↑moisture to stratum corneum

  2. Humectants---substances introduced into the stratum corneum to increase water holding capacity

Causes of Hypersensitivity Reactions to Treatment (hindering AD improvement)

- Topical emollients
  - -lanolin
  - -propylene glycol
  - -ethylenediamine
  - -formaldehyde
- Topical immunosuppressive medicines
  - -corticosteroids
  - -calcineurin inhibitors (protein phosphatase, activates T-cell system)

Food and Environmental Triggers

- Certain environmental factors and foods are controversial

  -reduction of house dust mite antigens

  -milk and egg exclusion, not shown to be beneficial (systemic review of 9 randomized trials)

(Weston & Howe 2015)

Lotion, cream, and ointments

- **Lotion**
  - -high water and low oil content
  - -may contain ethyl alcohol
- **Cream** (comes in a jar)
  - -lower water content
- **Ointments**
  - -no water content
  - -better protect against xerosis
  - -down side, too greasy

Atopic Dermatitis: Patient and Family Education

- Prevention is the best treatment
- Avoid triggers (environmental):
    - -excessive bathing without using moisturizers
    - -low humidity environments
    - -emotional stress
    - -xerosis (dry skin)
    - -overheating of skin
    - -exposure to solvents and detergents (esp. scented ones)

Atopic Dermatitis: Patient and Family Education

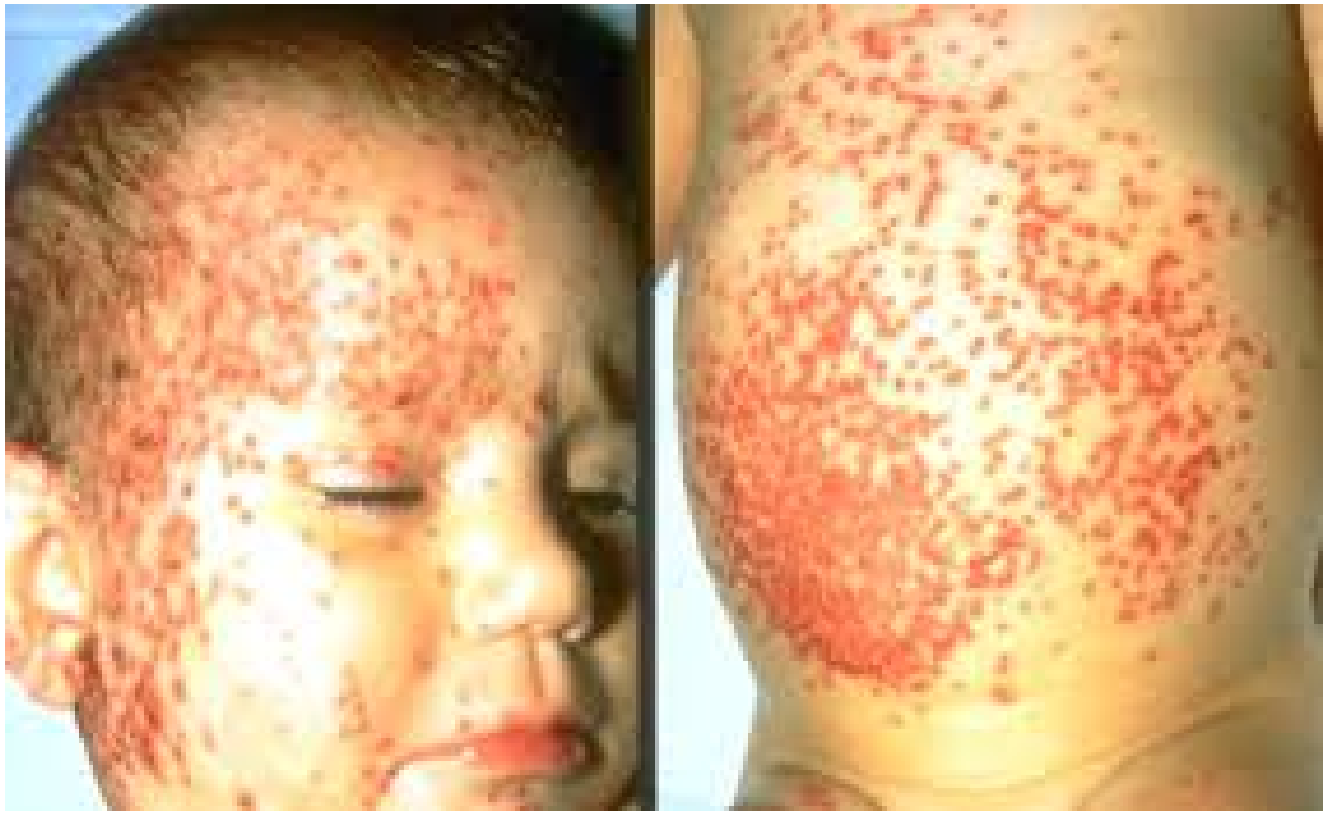
- Compliance and adherence to treatment regimen and basic skin care very important
- Short cool or lukewarm baths
- Mild unscented soaps
- Pat dry the skin after bathing
- Apply *unscented* moisturizer or emollients immediately

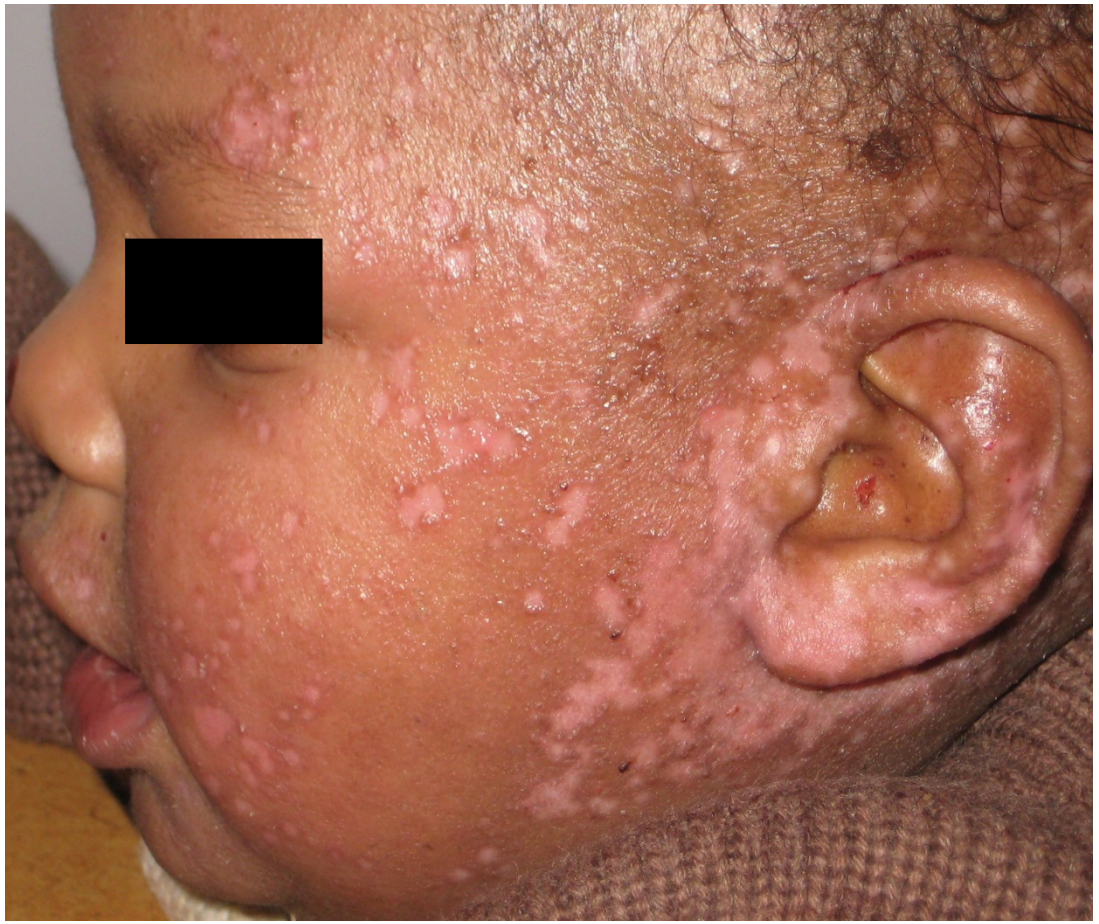
Atopic Dermatitis: Patient and Family Education

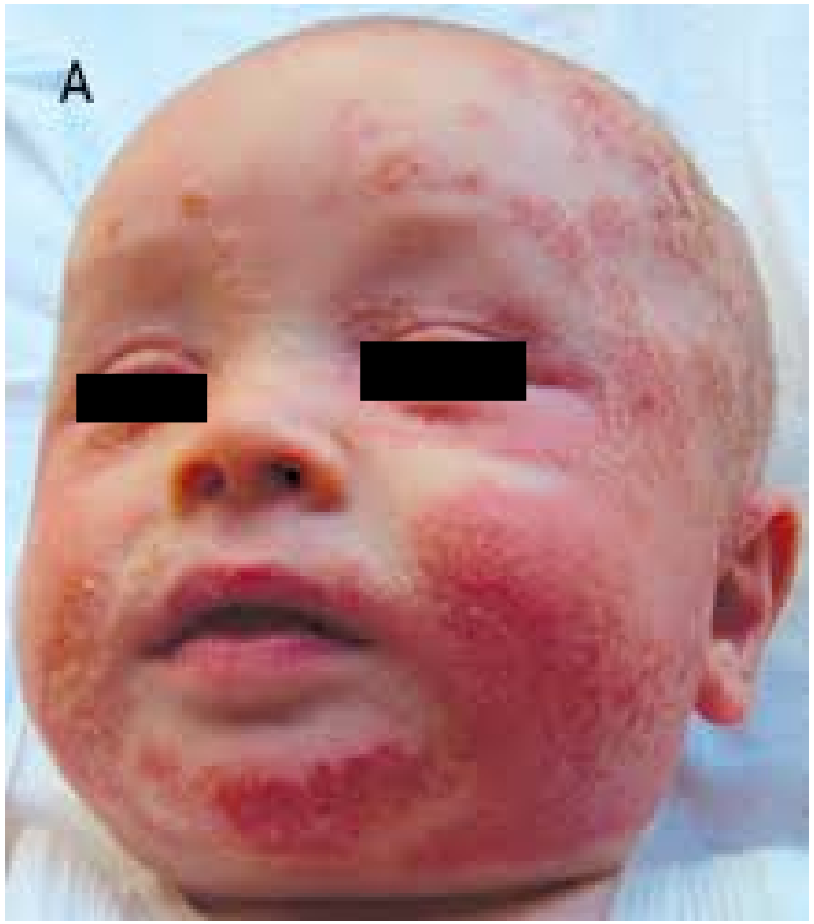
- If prescribed topical medicines, apply first then apply moisturizers
- Apply moisturizers at least twice a day
- Cotton clothing
- Wet PJ wrap

When to refer atopic dermatitis patients

- Patients with refractory AD
- Conventional therapies do not provide sufficient improvement






A

Eczema Herpaticum (EH)

- Disseminated herpes simplex virus (HSV); HSV-1 or HSV-2 exposure
- Highest incidence in younger children
- Association of AD and ↑ risk of EH poorly understood
- Multiple host factors play a role

Leung (2013); Khan, Shaw, & Bernatoniene (2014)

Eczema Herpaticum (EH), cont'd.

- Pt may not have active or severe eczema to get EH
- Abnormal skin barrier function predisposes pt to EH
- Pts with more severe AD, hx/o food allergy or asthma, early onset of AD, hx/o cutaneous staph or molluscum contagiosum infections are prone to EH

Leung (2013); Khan, Shaw, & Bernatoniene (2014)

Diagnosing EH

- If a child's infected AD fails to respond to abx and topical corticosteroids
- Rapidly worsening, painful eczema
- Viral culture, gold standard

EH: Clinical Presentations

- Widespread vesicles in pts with pre-existing skin dz (AD); may be difficult to distinguish from secondary bacterial infection (resembles chickenpox)
- Many similar shape and size of eroded lesion (secondary to scratching)
- Viremia
- Fever
- Malaise
- LAD

EH Complications

- Systemic complications

  keratoconjunctivitis (cornea and conjunctiva inflammation) → blindness, multi organ involvement → meningitis and encephalitis → death

- Mortality rates for untreated EH: 6-10%

Khan, Shaw, & Bernatoniene (2014).

EH Transmission

- Direct contact with infected secretions

EH Treatment

- Often needs hospital admission
- PO or IV acyclovir
- Hydration
- Abx for secondary bacterial infection
- Strict skin care; emollients
- Needs ophthalmology referral

Use of topical corticosteroids and eczema herpaticum

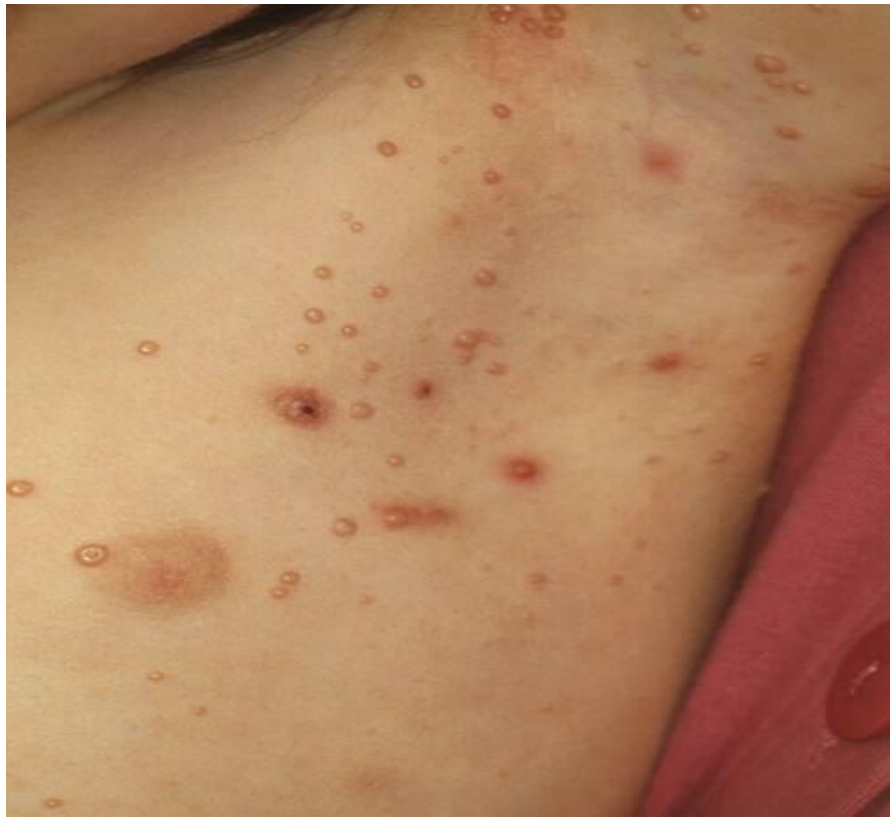
- Previously, use of topical corticosteroids concerns:

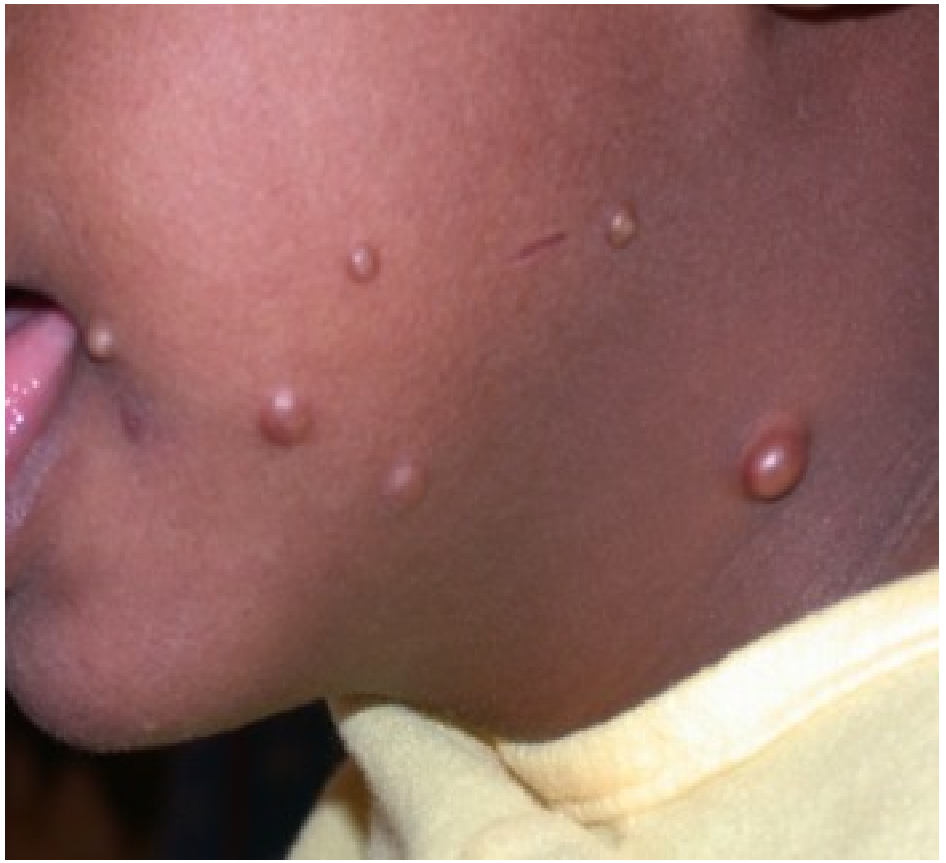
  -may promote dissemination of HSV

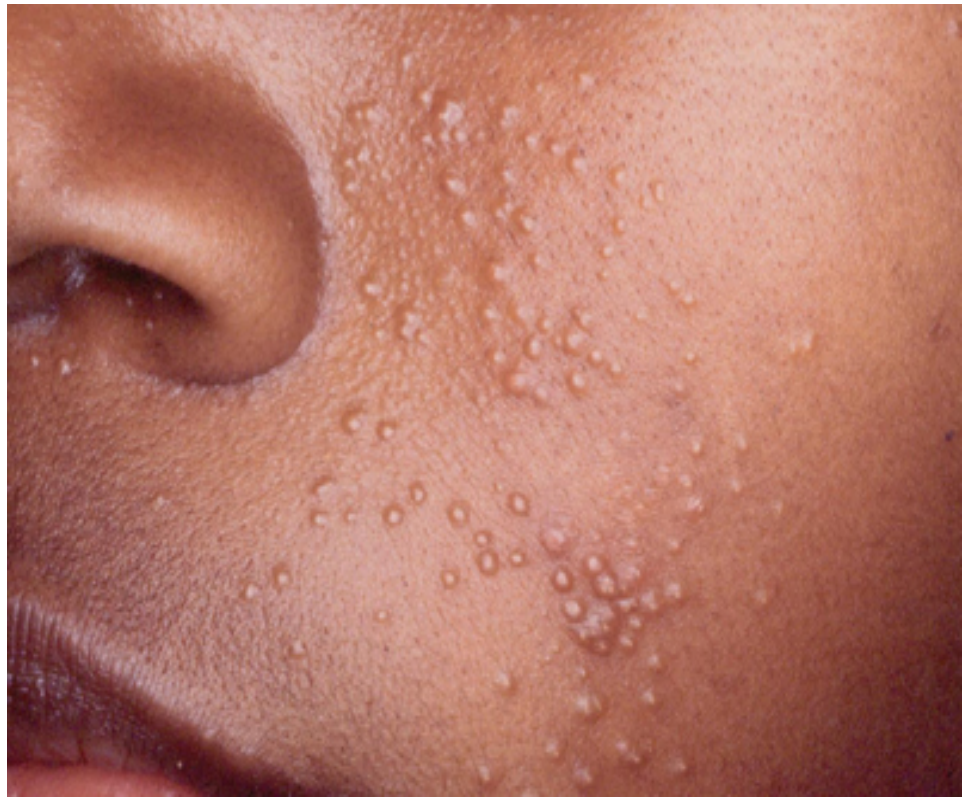
  -worsen the disease itself

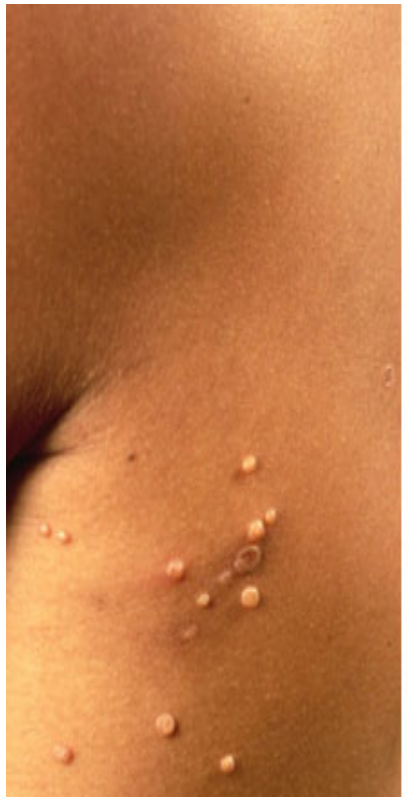
- Multicenter retrospective cohort study, n = 1331, 2 months - 17 yrs with admitting dx of eczema herpaticum
- Not associated with worsening of disease
- Systemic therapy → to ↑ LOS

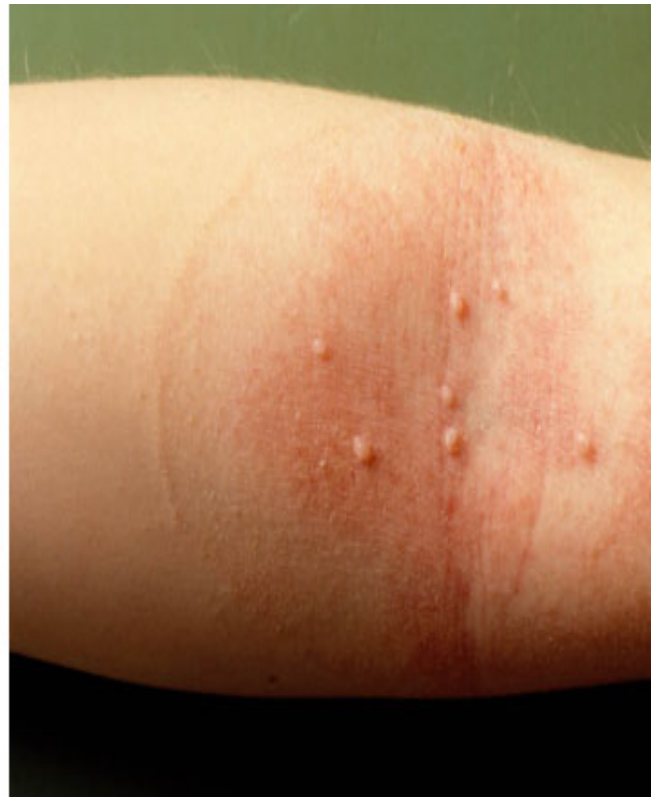
Aronson, Shah, Mohamad, & Yan (2013).











Molluscum Contagiosum

- A member of a poxvirus family
- More exclusive disease of children than warts
- Chronic, localized infection
- Flesh-colored, domed shaped papules (anywhere on body except palms and soles)

Molluscum Contagiosum, cont'd.

- Humans, the only known host
- Common disease of childhood
- May appear anywhere on body, except palms and soles
- Common areas of involvement:

  trunk, axillae, antecubital and popliteal fossae, and crural (groin) folds

Molluscum Contagiosum, cont’d.

- In adolescents and adults:
  - -STI, contact sports, immunosuppressed
- In STI:
  - -groins, genitals, proximal thighs, and lower abd
- In HIV or other immunocompromised pts:
  - -lesions can be large (giant molluscum)
  - -widespread
- May or may not be pruritic

Molluscum Contagiosum Transmission and Risk Factors

- Skin-to-skin contact
- Auto-inoculation
- Bath sponges and towels
- Risk factors:

  having AD

  swimming in public pools

Molluscum Contagiosum: Diagnosis and Treatment

- By clinical characteristic appearance of lesions
- Cryotherapy with liquid nitrogen (repeat q2-4 wks)
- Curettage (bleeding and risk of scarring)

Molluscum Contagiosum: Diagnosis and Treatment, cont'd.

- Cantharidin (topical blistering agent; avoid using on face, genital, perianal areas)

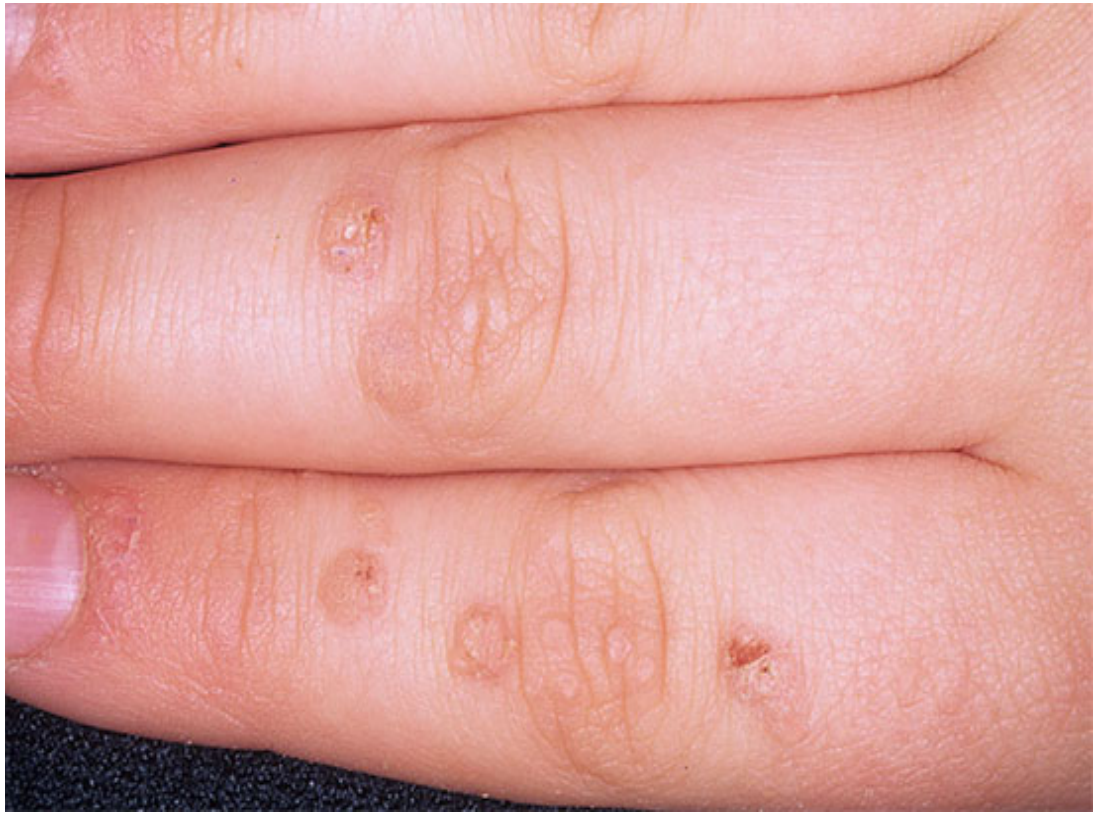
  high rates of parental satisfaction

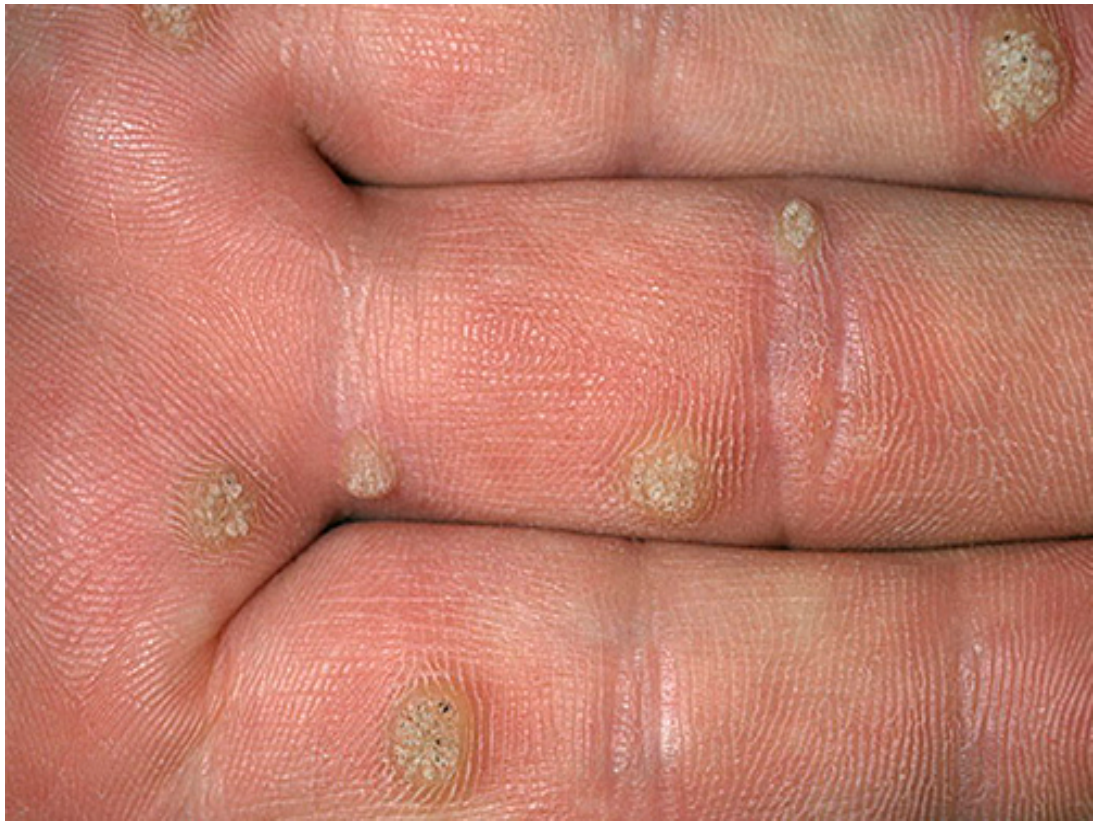
- Topical retinoids (Tretinoin; qod to bid)

- Imiquimod (not effective); KOH (needs more data)

Molluscum Contagiosum: Patient and family education

- Most cases self-resolve within 6-9 months
- Rare cases persist 3-5years
- Cover lesions likely to come in contact with others with clothing or watertight bandage
- Keep fingernails trimmed short
- Avoid scratching
- No sharing of bath towels





Cutaneous Warts (Verrucae) or Common Warts

- Common in children and young adults
- Human papillomaviruses (HPV)
- Skin-to-skin (direct or indirect) contact spread
- Self-inoculation (scratching)
- Maceration or sites of trauma predispose patients to inoculation
- Spontaneous remission within two years in two-thirds of patients

Cutaneous Warts, cont’d.

- Many different types of warts
- Mostly seen on fingers, periungual, and back of hands
- Site of entry, open skin or wound; e.g. nail biters or picking at hangnails
- May have black to red dots, “seeds”, and globules

Diagnosis

- By clinical appearance and location

- Dermatoglyphics (obscure normal skin markings)

Choice of Therapy

- Often goes away without tx (but can last for a long time)
- Type of tx dependent on patient's age and location of lesion
- Cryotherapy with liquid nitrogen (different modes of administration)
- Cantharidin

Other options for wart treatment

- Chemical peels (Salicylic acid, tretinoin, and glycolic acid)
- Electrosurgery (burning) and curettage (scraping)
- Excision
- Laser tx

Wart home treatment

- Soak the warts first, may pare down (using nail filers or pumice stone) the wart first then apply med
- Salicylic acid (OTC, different forms)
- Duct tape---conflicting evidence about efficacy

Warts: Pt Education

- Avoid scratching at the lesions
- Keep fingernails trimmed short
- No sharing of bath towels or shaving equipment
- Nail filer or pumice stone used to pare warts should not be used on normal nail or skin
- Wear flip-flops at public pools, showers, and locker rooms
- Do not touch someone else’s warts
- Keep warts dry; moisture enhances spread

When to refer pt with warts to a dermatologist

- Warts that hurt, itch, burn, or bleed
- Warts are growing rapidly
- Multiple warts
- Warts on face or genitals
- Immunosuppressive
- Suspicion that lesion is not wart

Thank all you for coming!

References

- Aronson, P.L., Shah, S.S., Mohamad, Z., & Yan, A. (2013). Topical steroids and hospital length of stay in children with eczema herpaticum. *Pediatric Dermatology,* 30, 215-221. doi: 10.1111/j.1525-1470.2012.01859.x
- Fukaya, M., Sato, K., Sato, M., Kimata, H., Fujisawa, S., Dozono, H., et al. (2014). Topical steroid addiction in atopic dermatitis. *Drug, Healthcare and Patient Safety,* 6, 131-138. doi: 10.2147/DHPS.S6920
- Goldstein, B.G. & Goldstein, A.O. (2014). Cutaneous warts. uptodate.com
- Isaacs, S.N. (2015). Molluscum contagiosum. uptodate.com
- Khan, A. Shaw, L., & Bernatoniene, J. (2014). Fifteen-minute consultation: Eczema herpaticum in a child. *Archives of Disease in Childhood,* education and practice edition. doi: 10.1136/archdischild-2013-304460.
- Leung, D.Y.M. (2013). Why is eczema herpaticum unexpectedly rare? *Antiviral Research. 98*(2), pg. 153-157. doi: 10.1016/j.antiviral.2013.02.010

References

- Lio, P. (2007). Warts, molluscum and things that go bump on the skin: a practical guide. *Archives of Disease in Childhood,* education and practice edition. doi: 10.1136/adc.2007.122317
- Moye, V., Cathcart, S., Burkhart, C.N., & Morrell, D.S. (2013). Beetle juice: A guide for the use of Cantharidin in the treatment of molluscum contagiosum. *Dermatologic Therapy,* 26, 445-451. doi: 10.111/dth.12105
- Mathias, R.A., Weinberg, A., Boguniewicz, M., Zaccaro, D.J., Armstrong, B., Schneider, L.C., Hata, T.R., Hanifin, J.M., Beck, L.A., Barnes, K.C., and Leung, D.Y.M. (2013). Atopic dermatitis complicated b y eczema herpaticum is associated with HLA B7 and reduced interferon-γ-producing CD8+ T cells. *British Journal of Dermatology,* 169, 700-703. doi: 10.111/bjd.12382

References

- Spergel, J.M. (2015). Management of severe refractory atopic dermatitis (eczema). uptodate.com
- Weston, W. L. & Howe, W. (2015). Treatment of atopic dermatitis (eczema). uptodate.com

References, cont'd.

- American Academy of Dermatology. Warts: Who gets and causes?

  Retrieved from https://www.aad.org/dermatology-a-to-z/diseases-and-treatments/u---w/warts/who-gets-causes

- American Academy of Dermatology. Warts: Diagnosis, treatment, and outcome. Retrieved from https://www.aad.org/dermatology-a-to-z/diseases-and-treatments/u---w/warts/diganosis-treatment

- American Academy of Dermatology. Warts: Signs and symptoms. Retrieved from https://www.aad.org/dermatology-a-to-z/diseases-and-treatments/u---w/warts/signs-symptoms

- Dermnet.nz. Emollients and moisturizers. Retrieved from http://dermnetnz.org/treatments/emollients.html