Wrestling with Rashes

Sports Medicine Conference
August 5, 2019

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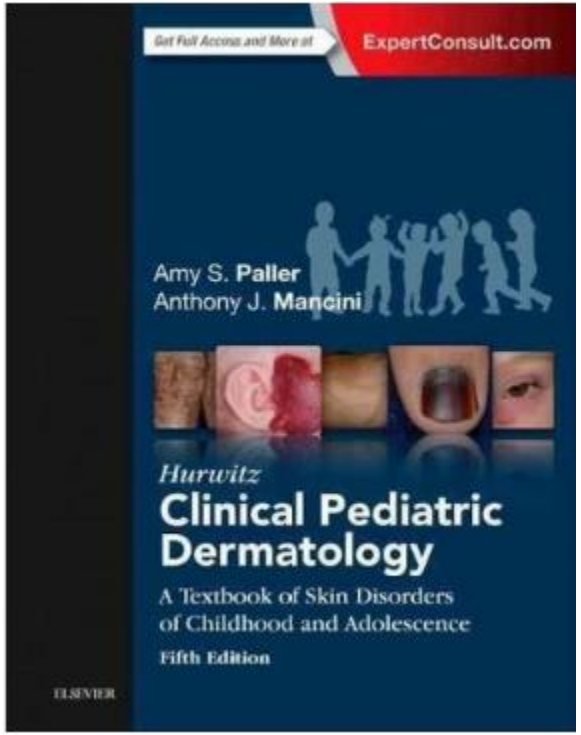
UMKC School of Medicine

BEST CHILDREN'S HOSPITALS U.S.News & WORLD REPORT RANKED IN 10 SPECIALTIES 2018-19

MAGNET RECOGNIZED AMERICAN NURSES CREDENTIALING CENTER

Disclaimers

- No financial disclosures
- Will be discussing off-label uses of medications and treatments



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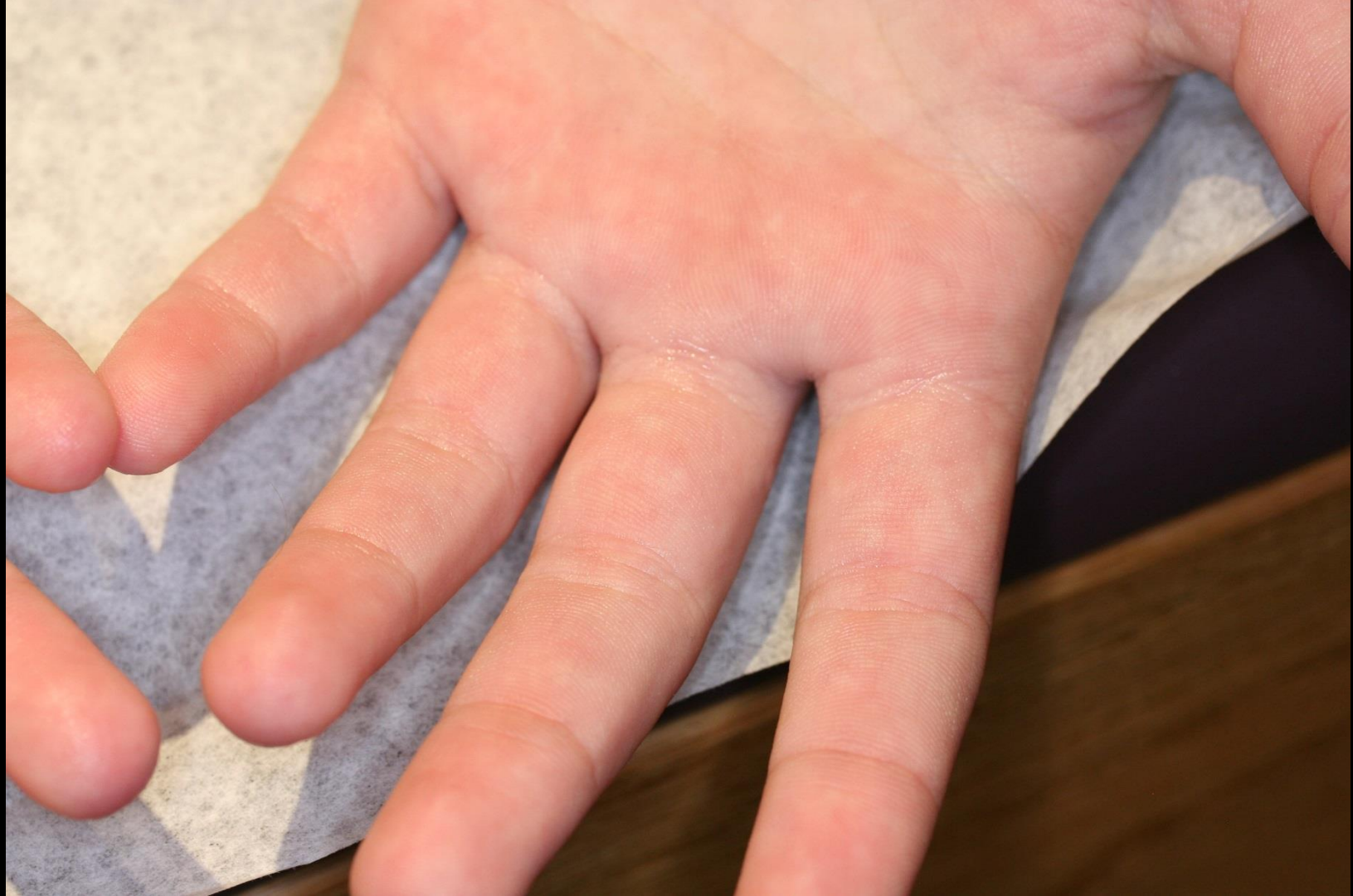
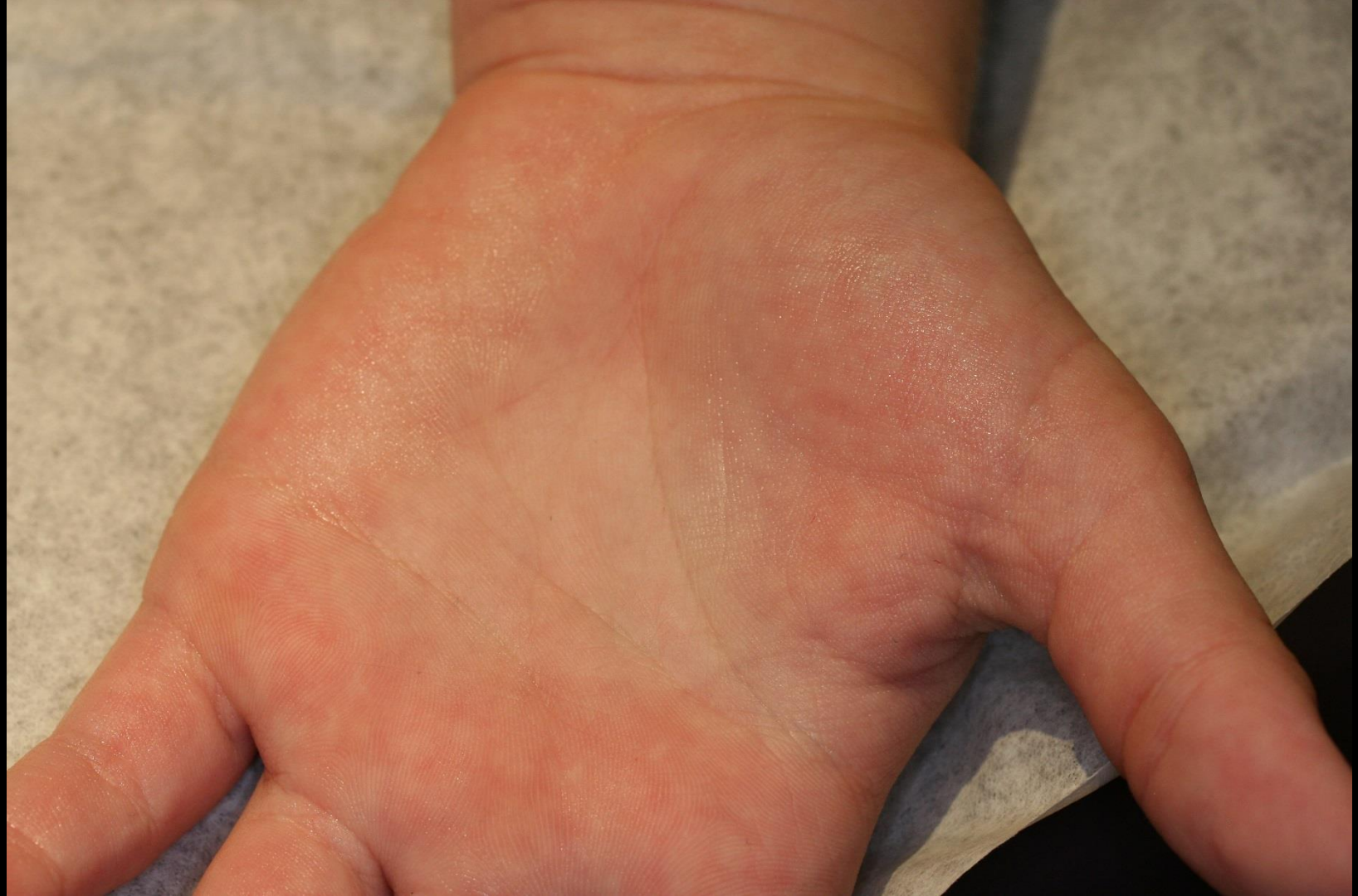
Wet Hands

- 14 yo female
- Several year history of sweaty hands and feet
- Worse when nervous, scared, hot
- Constantly wipes hands on pants and towels
- Having trouble at school: messes up written paperwork, embarrassed, trouble using touch screen electronic devices
- Hands “slip” when playing basketball or gymnastics because they are wet





Hyperhydrosis

- Idiopathic hyperhidrosis, aka primary pediatric hyperhidrosis
- Excessive production of sweat in response to heat/emotional stimuli/other stimuli
- Hands, feet, axilla, body
- Not drug related, not metabolic related (does not happen when asleep)
- Mild → Severe
- Severe: disabling, embarrassing, interfere with work/play/sports, affect social interactions

Hyperhydrosis Treatment

Topical : qHS- BID

- 12% aluminum chloride **(OTC): Certain Dri Roll On**
- 20% aluminum chloride (Drysol)
- Qbrexza (glycopronnium) cloths (available Oct. 2018)

Oral

- Glycopyrolate
  - 1-3mg BID
  - SE: dry mouth, blurry vision, constipation, tachycardia
  - Start low, titrate up

AS Paller, et al.: Oral glycopyrrolate as second-line treatment for primary pediatric hyperhidrosis. JAAD. 67:918-923 2012.

No Slip-Ups with Iontophoresis

No Slip-Ups with Iontophoresis

All four major U.S. sports are in play this week with baseball (MLB) having just wrapped up its World Series, football (NFL) in the thick of its regular season, and both ice hockey (NHL) and basketball (NBA) broadcasting their opening games.

From fast pitches to perfect layups, and from smooth spiral passes to rocketing slap shots, each of these sports has something important in common. They demand a sure grip and

Tapwater iontophoresis

- Electric device that delivers a direct current to patient
- Uses Tap Water as the conductive medium
- MOA? Causes development of keratotic plugs in the eccrine sweat ducts
- Effect may last for weeks
- Iontophoresis units (Drionic, General Medical Co., Los Angeles, CA) are available without a prescription via mail or internet (www.drionic.com)

https://www.rafischer.com/cat_iontophoresis/

RA Fischer

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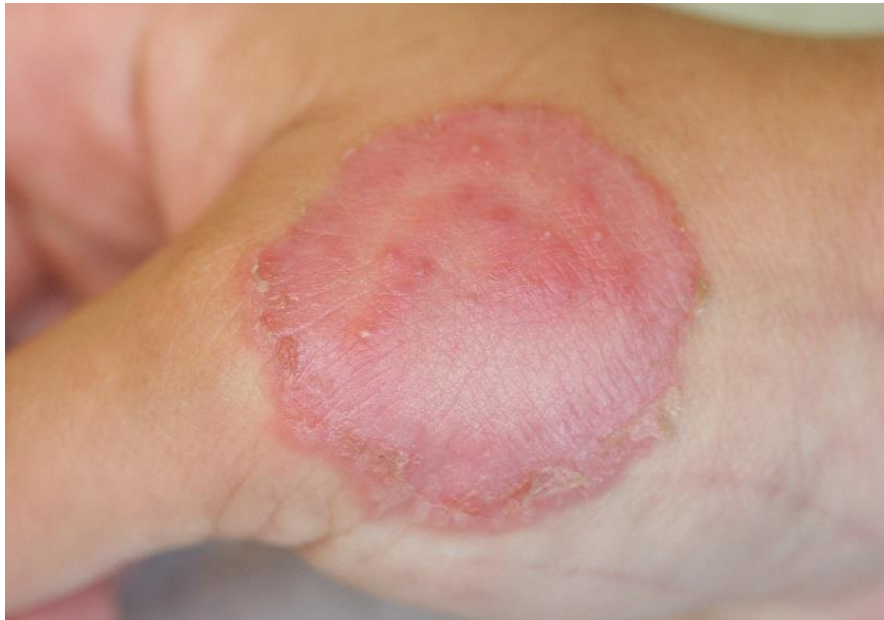
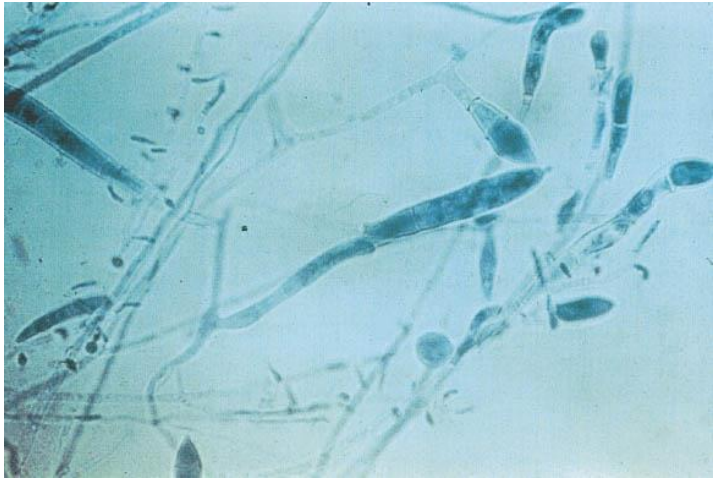
Tinea “The Fungus”

- Dermatophytes are fungi that use keratin for growth
- Infect keratin-containing body parts:
  - Hair: tinea capitis
  - Skin: tinea corporis
    (face: tinea faciei)
  - Nails: tinea unguium
    (onychomycosis)
- 3 major reservoirs:
  - Humans (anthropophilic)
  - Animals (zoophilic)
  - Soil (geophilic)



Types of Tinea capitis infections

- Endothrix
  - Most commonly caused by *Trichophyton tonsurans* and other *T. spp.*
  - Hyphae grow down hair follicle/penetrate hair shaft
  - Does not fluoresce
  - Most common in U.S.



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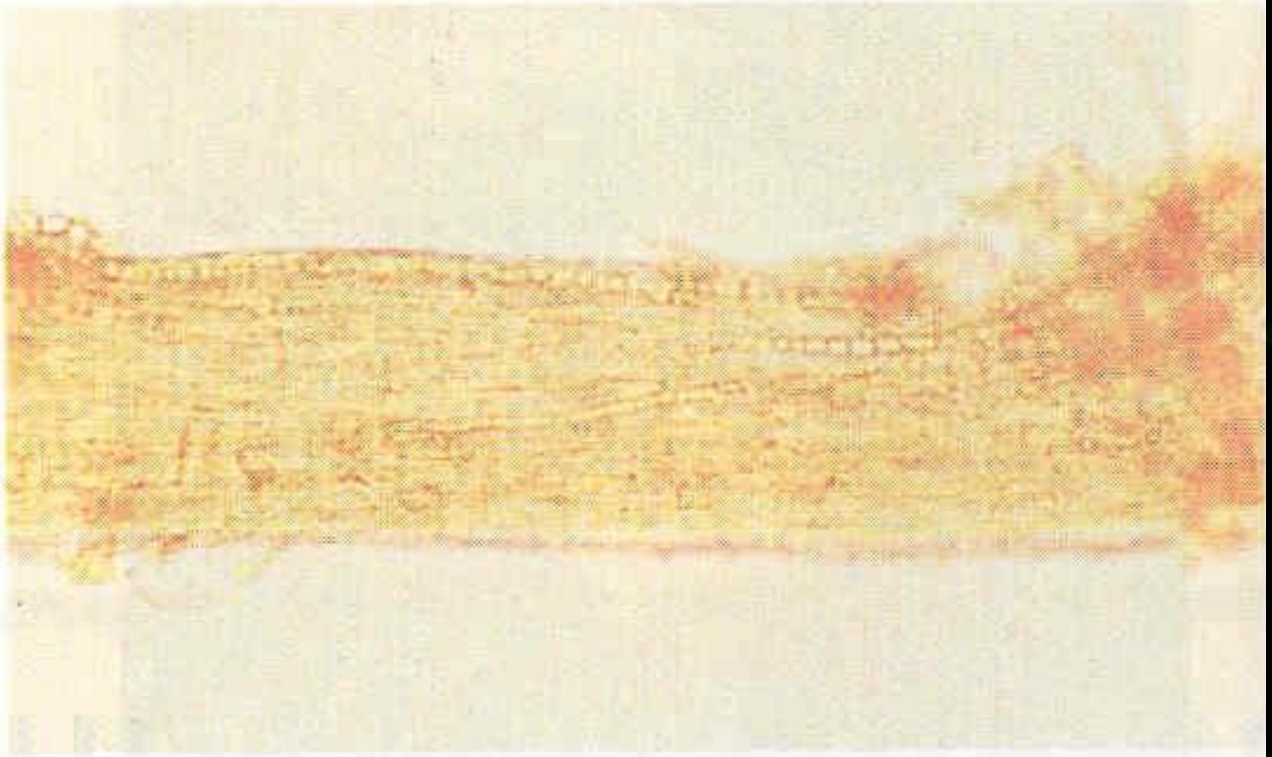
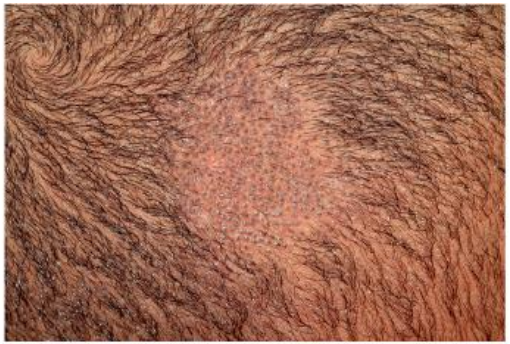


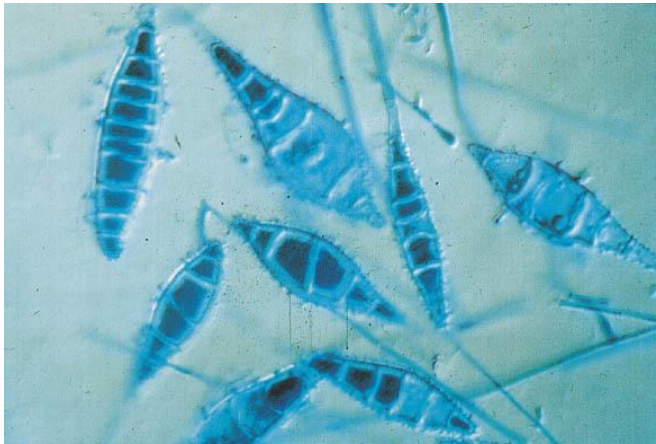
Fig. 6-6

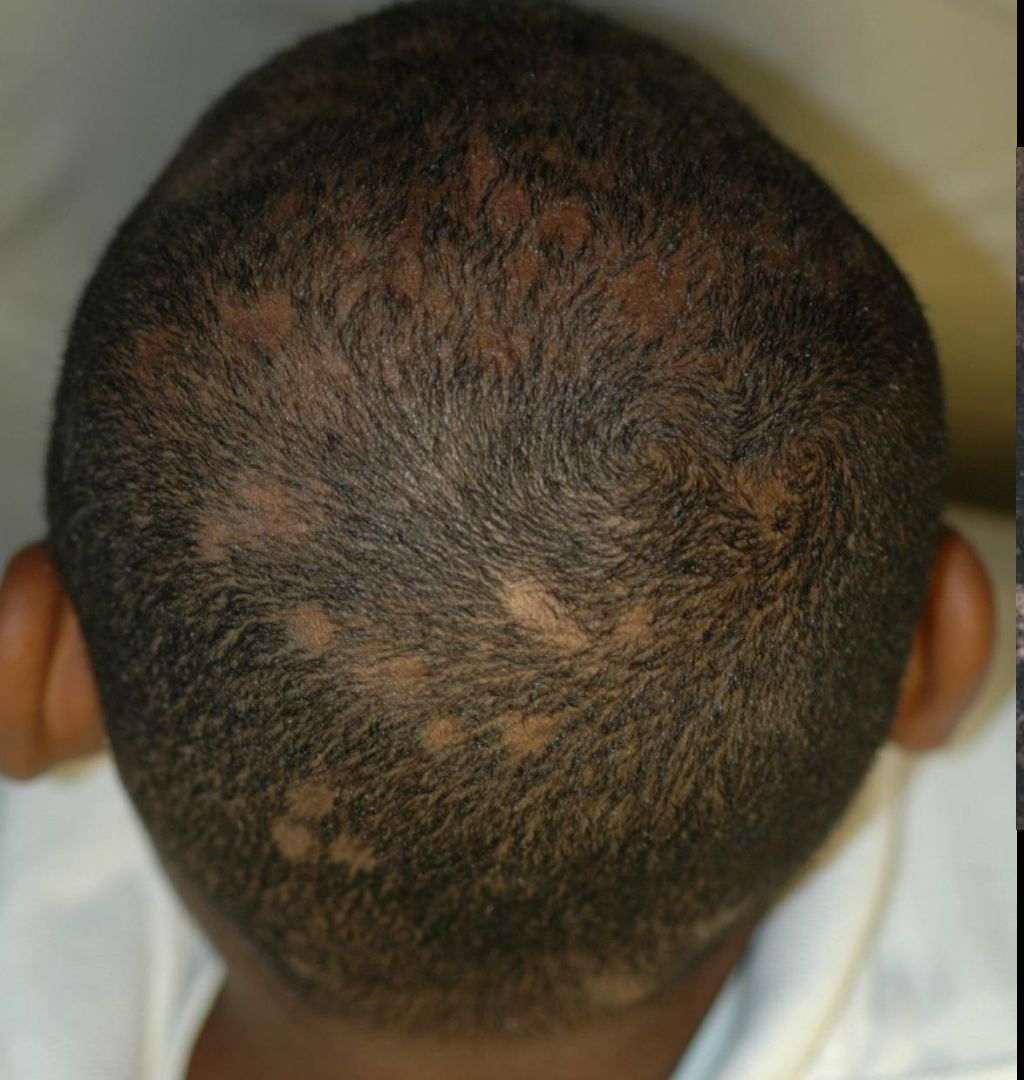
Photomicrograph of hair dissolved in KOH. Hyphae and spores of *T. tonsurans* appear as chains within the hair sha

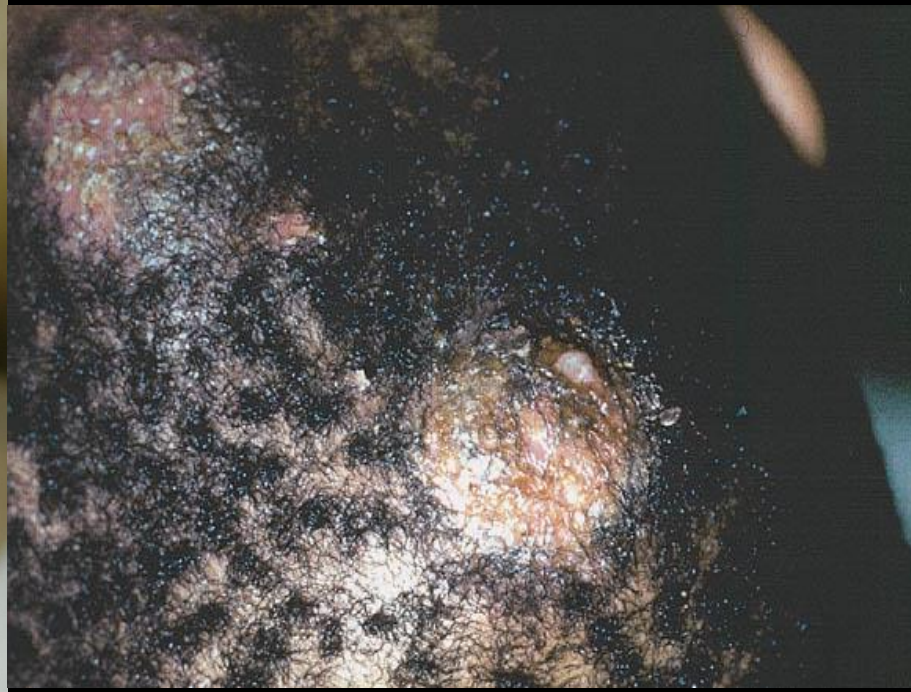
Types of Tinea capitis infections

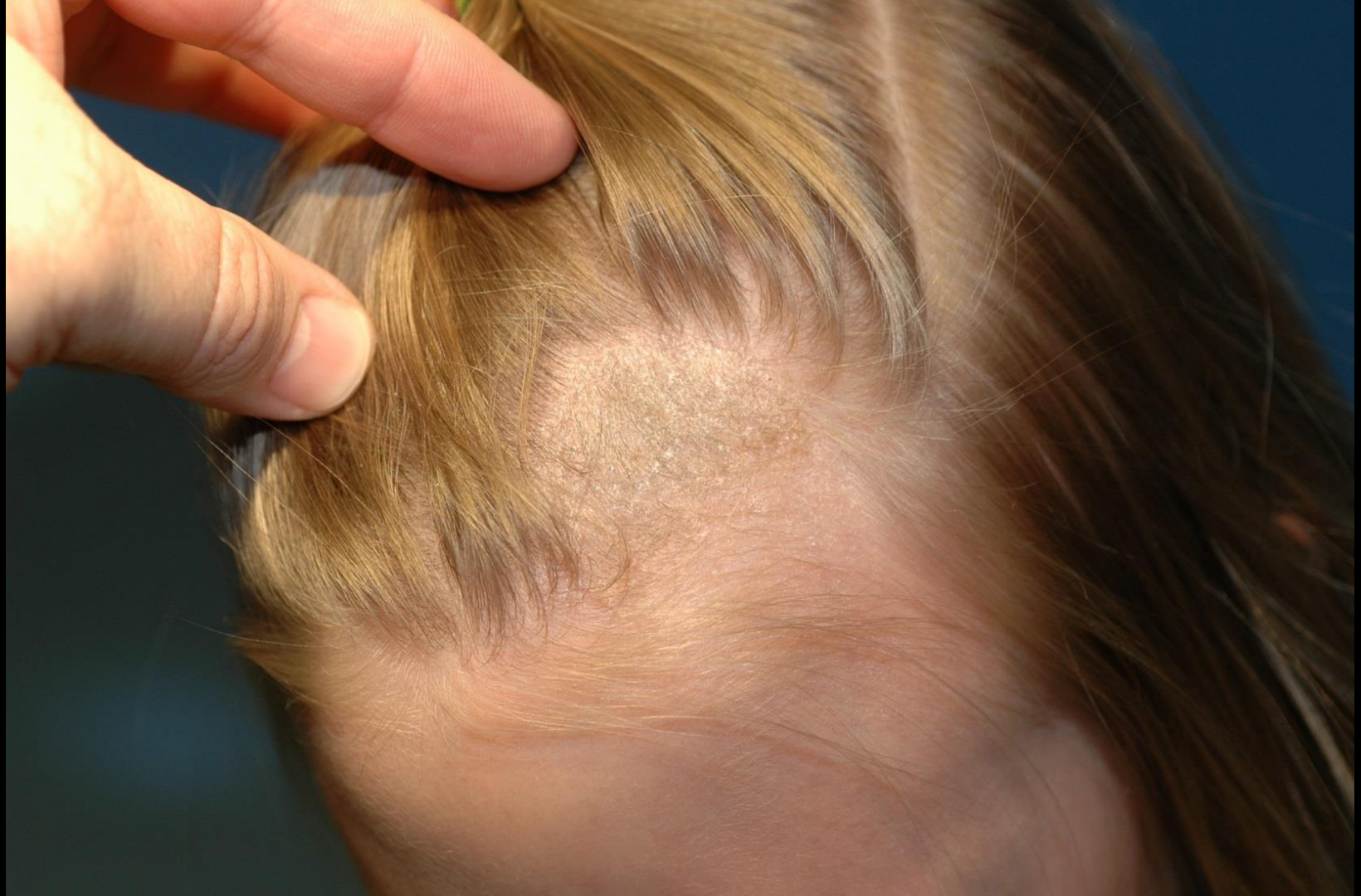
- Ectothrix
  - Frequently caused by *Microsporum spp.*
    - *M. canis, M. audouinii, M. gypseum*
    - Hyphae invade hair shaft, but then grow out of the follicle and cover the hair shaft
  - <u>Does fluoresce</u>

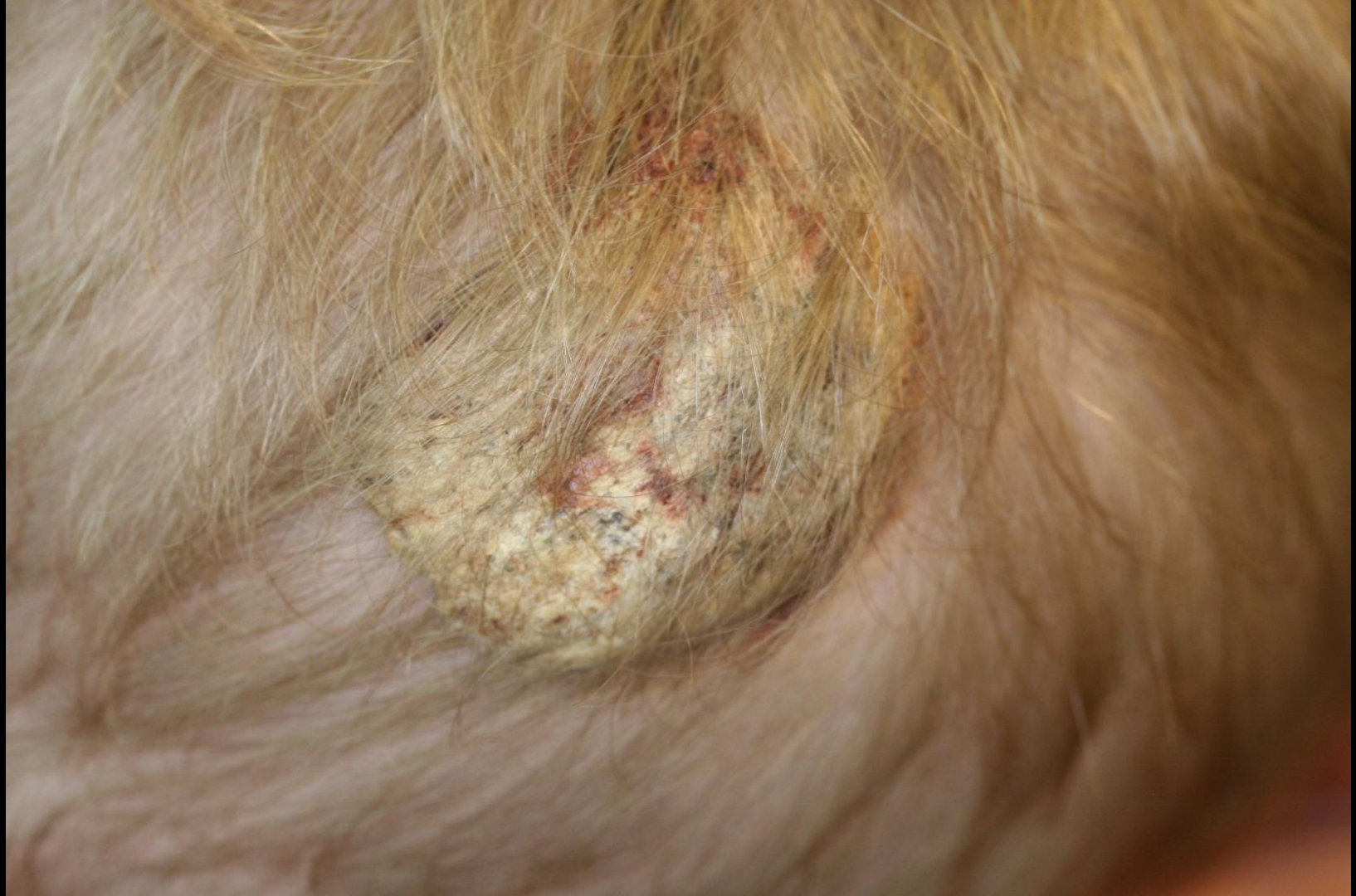






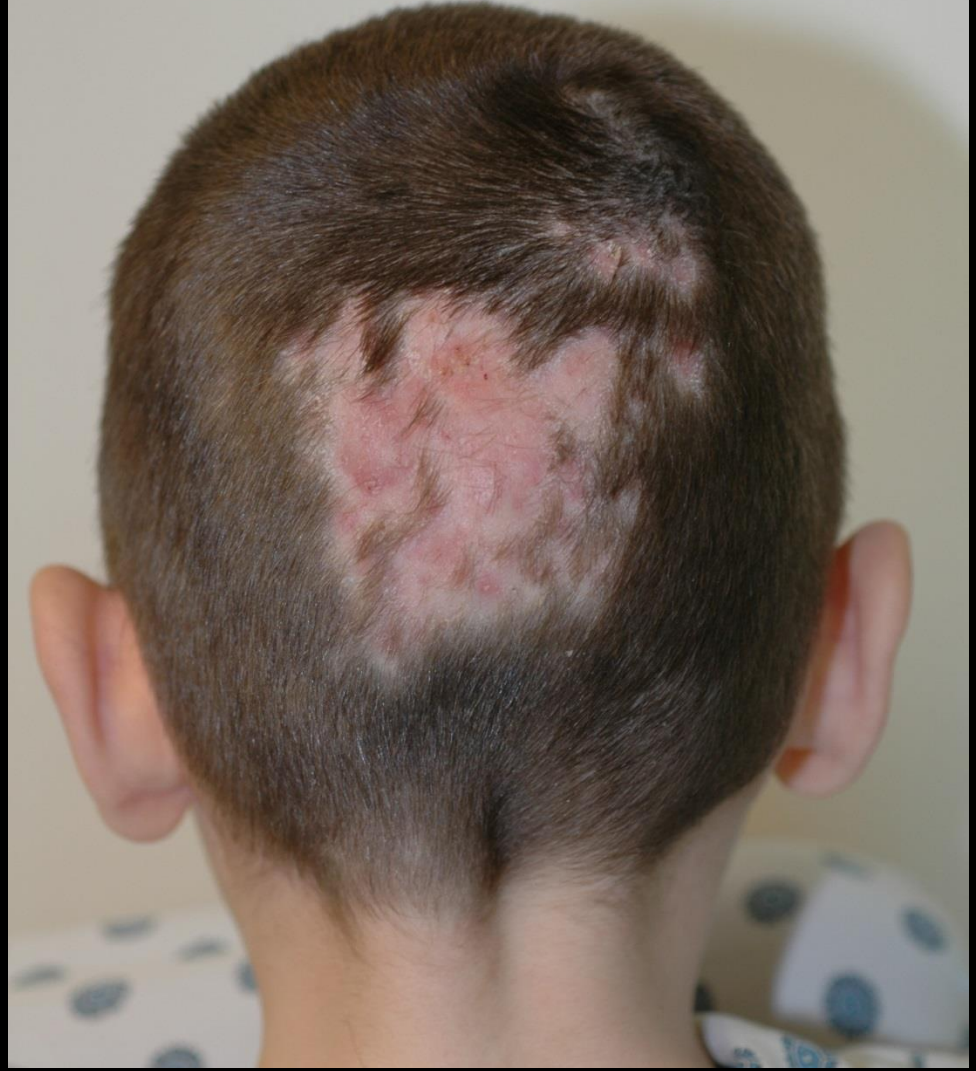






M. Canis

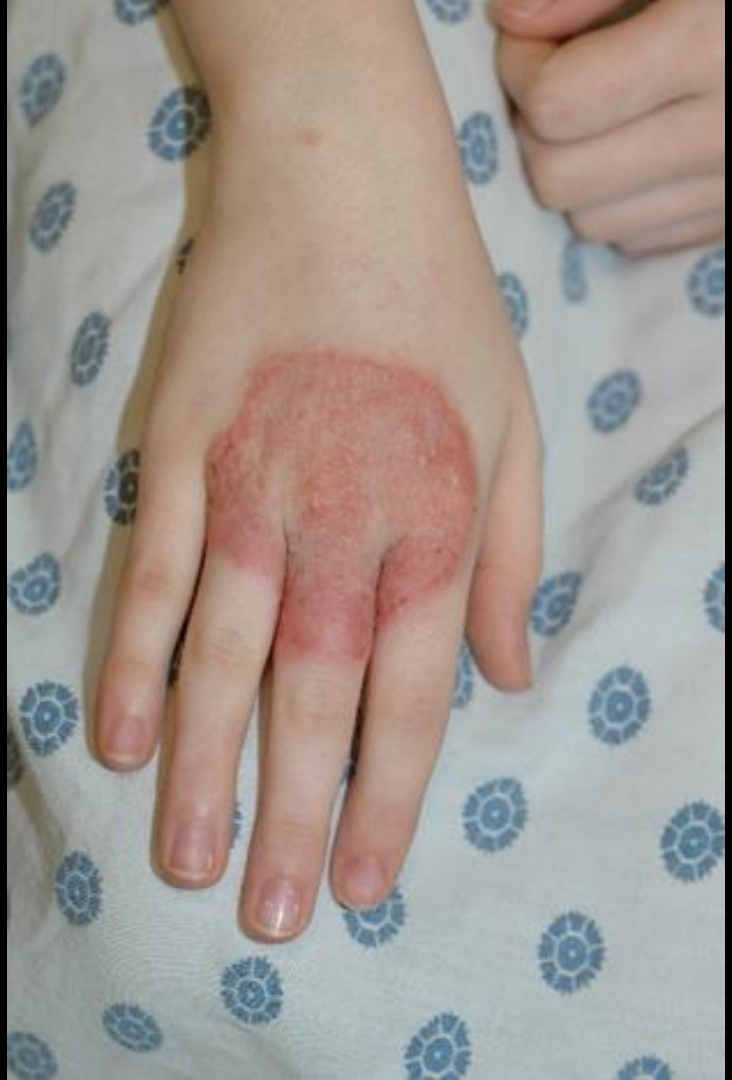
Scarring

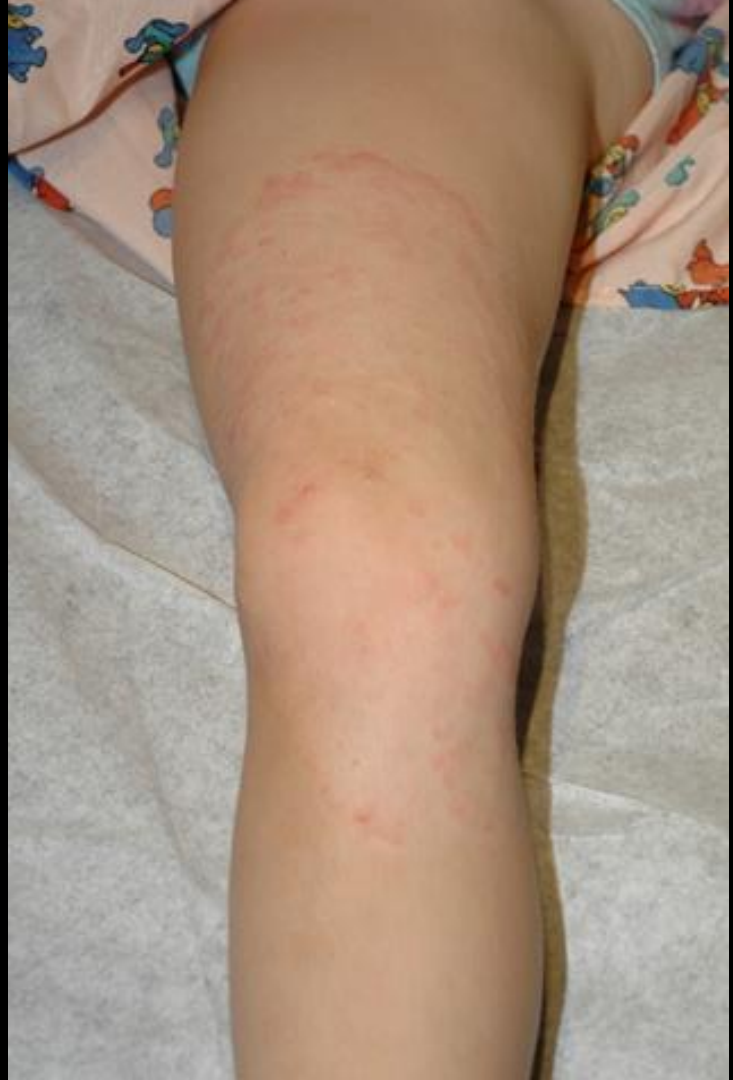


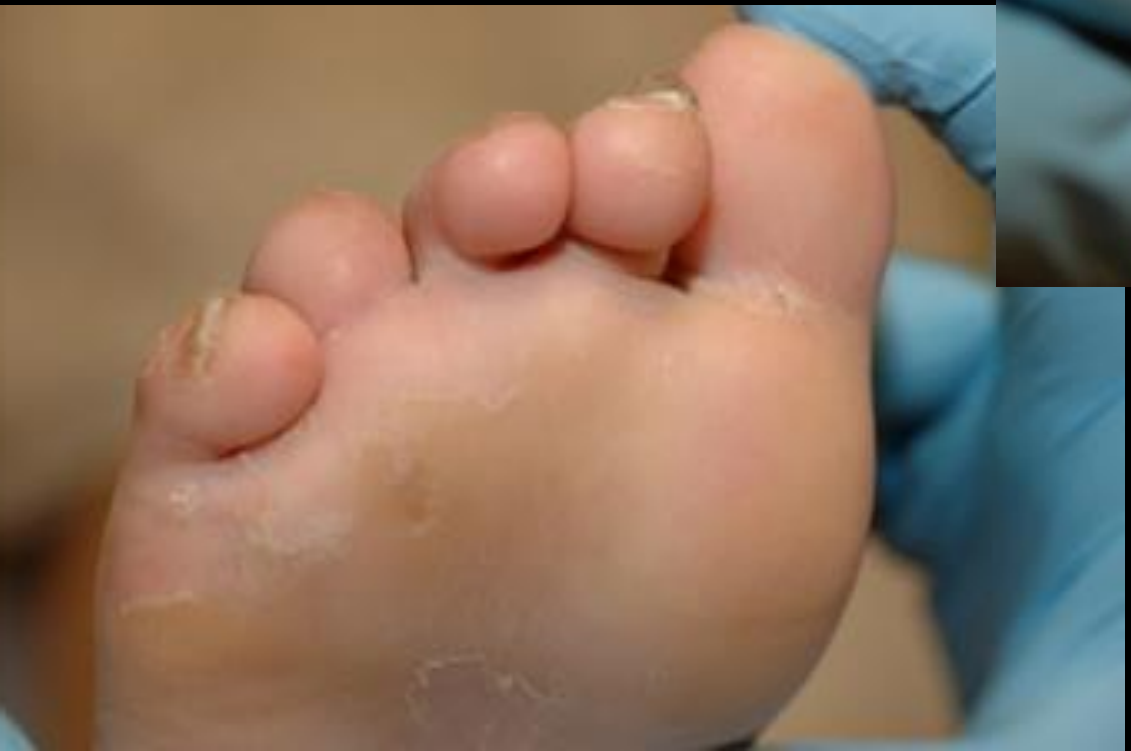
Tinea Capitis Treatment

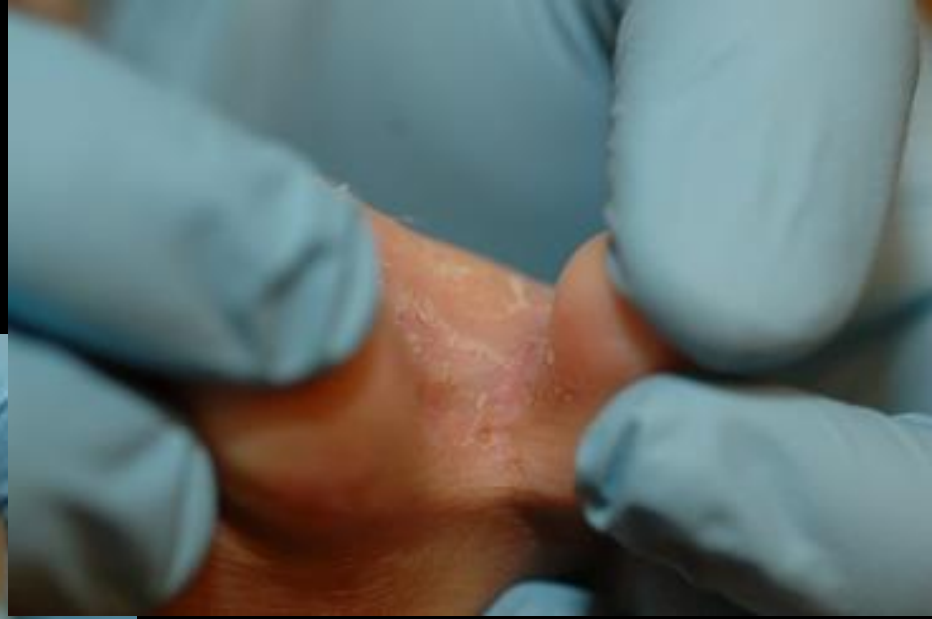
- Culture: takes 2 weeks to grow
- Oral Antifungal: Oral Griseofulvin or Terbinafine (Lamisil) for 6-8 weeks
- Antifungal shampoo to reduce transmission
  - 1-2% Ketoconazole (Nizoral AD, Nizoral Rx)
  - 2.5% Selenium sulfide (Selsun Blue)
  - 1-2% Zinc pyrithione (Head and Shoulders)

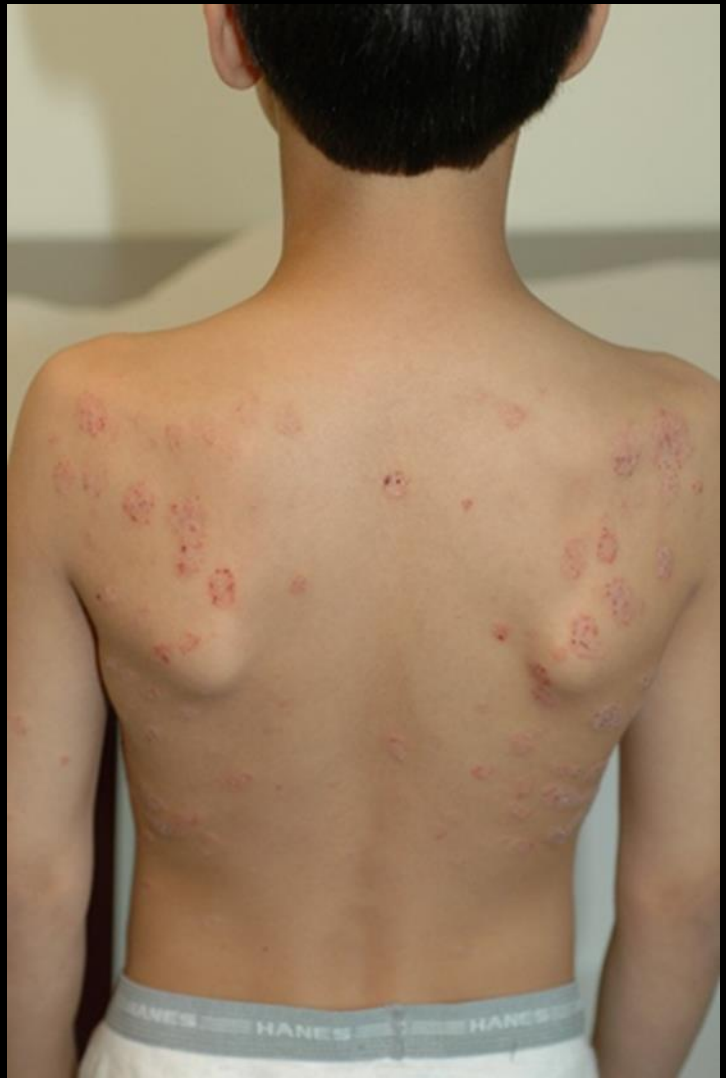
Tinea Lesions (ringworm on scalp or skin): Oral or topical treatment for 72 hours on skin and oral treatment for 14 days on scalp.







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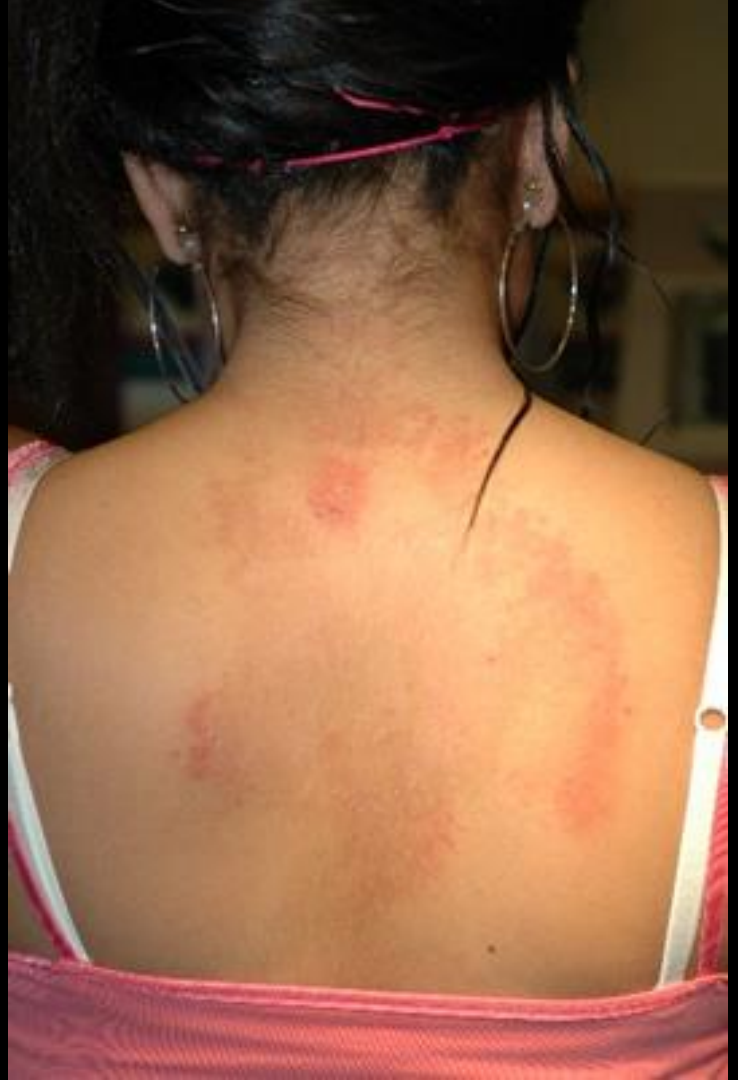


Tinea Corporis treatment

- Topical Antifungal (OTC or Rx): x 2 weeks
  - OTC Lamisil cream (generic Terbinafine), Lotrimin Ultra
  - RX: Ketoconazole cream, Econazole cream, Naftin cream

SEVERE CASES MAY REQUIRE ORAL THERAPY

PREVENTATIVE?:

Use antifungal shampoo as a body wash daily, esp after practices

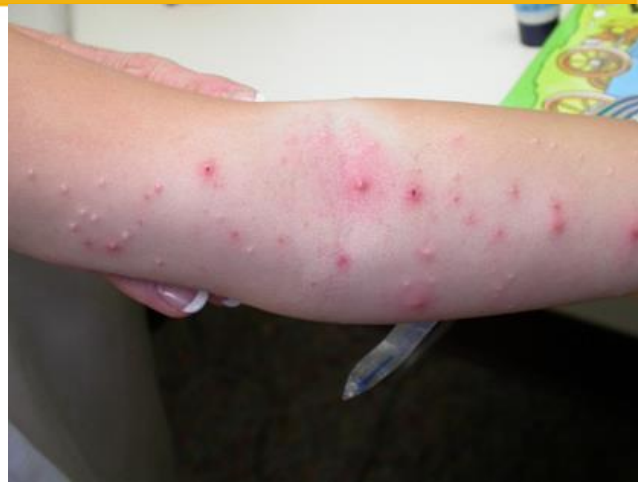
OTC Nizoral AD shampoo (1% Ketoconazole)

Soak feet in dilute white vinegar (1:1 with water) BID, wash/dry clothing/shoes, OTC Lamisil spray in shoes and Vinegar spray equipment weekly

Alter SJ, et al. Common Child and Adolescent Cutaneous Infestations and Fungal Infections .Curr Probl Pediatr Adolesc Health Care. 2018 Jan;48(1):3-25. doi: 10.1016/j.cppeds.2017.11.001. Epub 2017 Dec 6.

Molluscum Contagiousum

- Not a spell from Harry Potter
- Caused by a DNA pox virus
- Spread from skin contact
- Common in children, less common in adolescent, rare in adults



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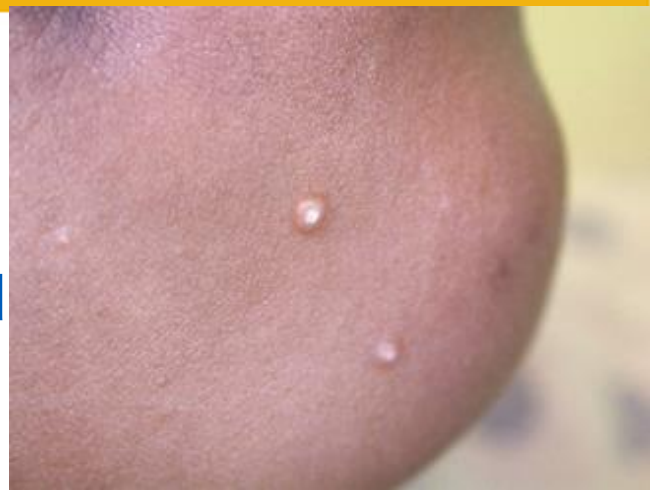
Molluscum Contagiousum

- Lesions have white cores
- Develop a dermatitis around them=itchy
- Lesions get red inflamed/appear infected before they resolve
- Infections can take months to years to resolve
- Can cause small pitted scarring



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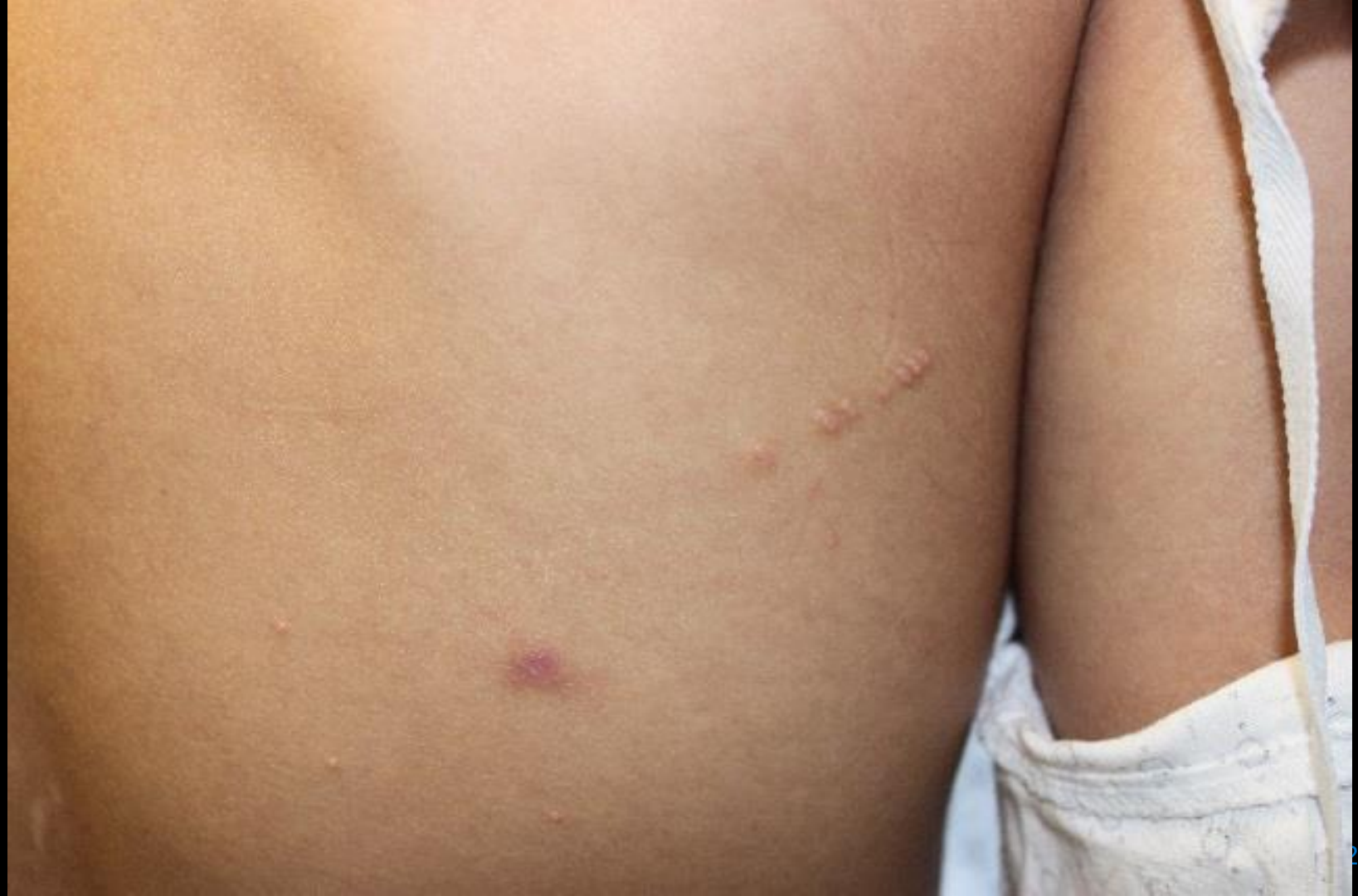

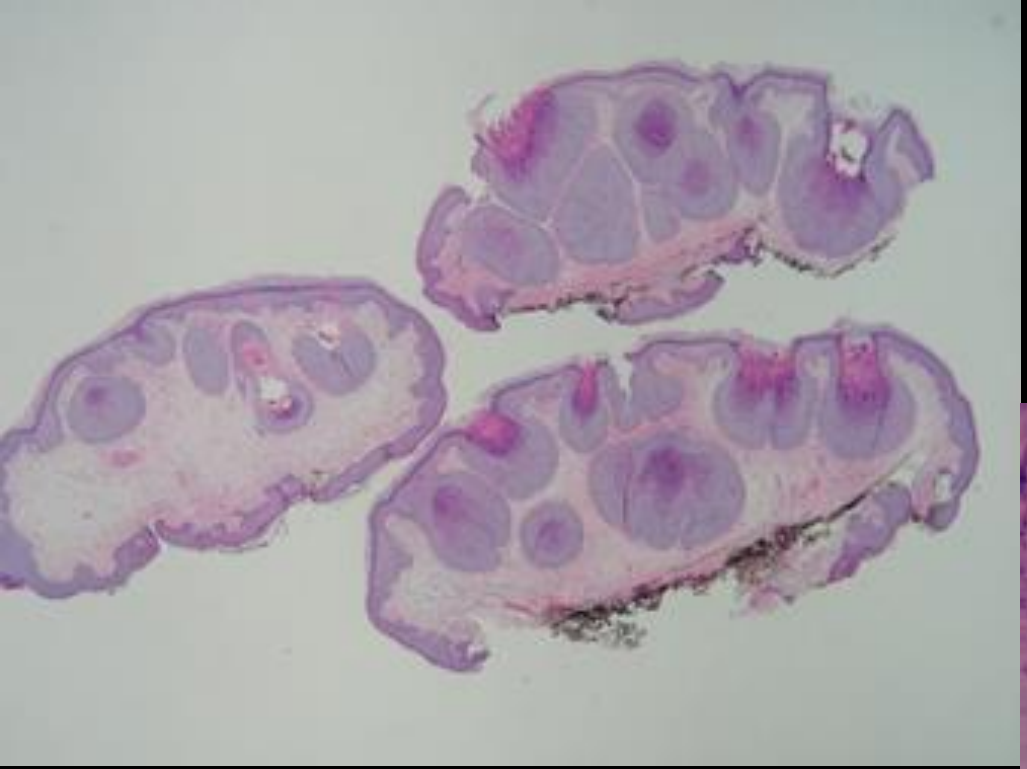

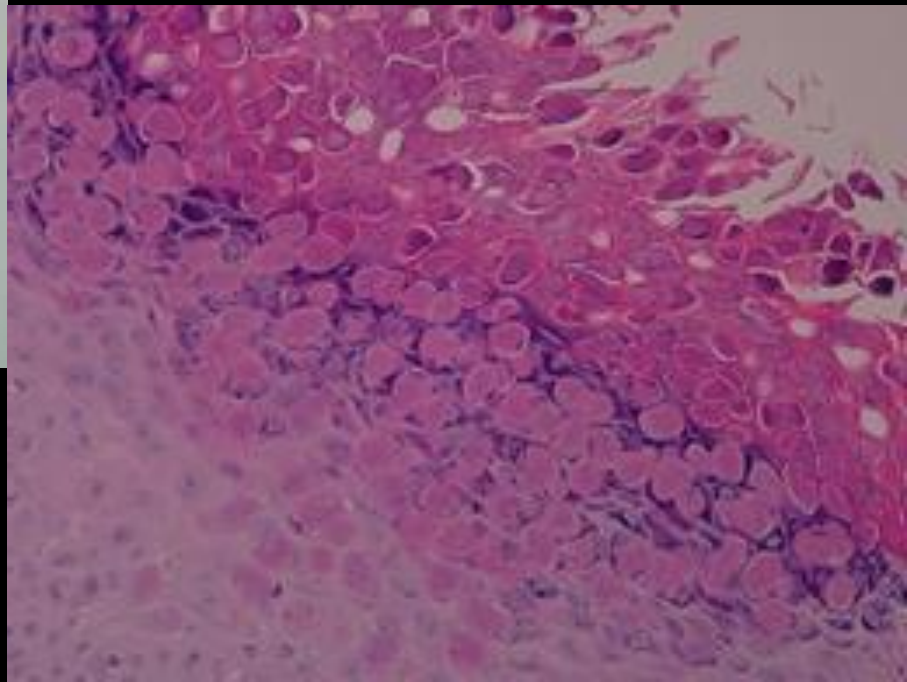

Molluscum Treatment

- No treatment – months to years
- Topical cantharone (Blister beetle extract)-FDA import ban
- Liquid nitrogen
- Curettage (Topical lidocaine cream/cut them off) – painful/scarring/bleeding
- Oral Cimetidine (Tagamet) x 3 month
- Prevention: Regular bathing & handwashing, don't reuse towels/washcloths, moisturizer

Forbat E, et al.. Molluscum Contagiosum: Review and Update on Management. Pediatr Dermatol. 2017 Sep;34(5):504-515. doi: 10.1111/pde.13228

Molluscum Contagiosum: Upon treatment with curettage and hyfrecator, may cover with biooclusive and wrestle immediately.

Herpes Simplex

- Common viral infection of the skin
- HSV 1: cold sores, fever blisters, skin lesions
- HSV 2: genital ulcers, can cause skin and lip lesions
- Spread through physical contact: skin, fomites

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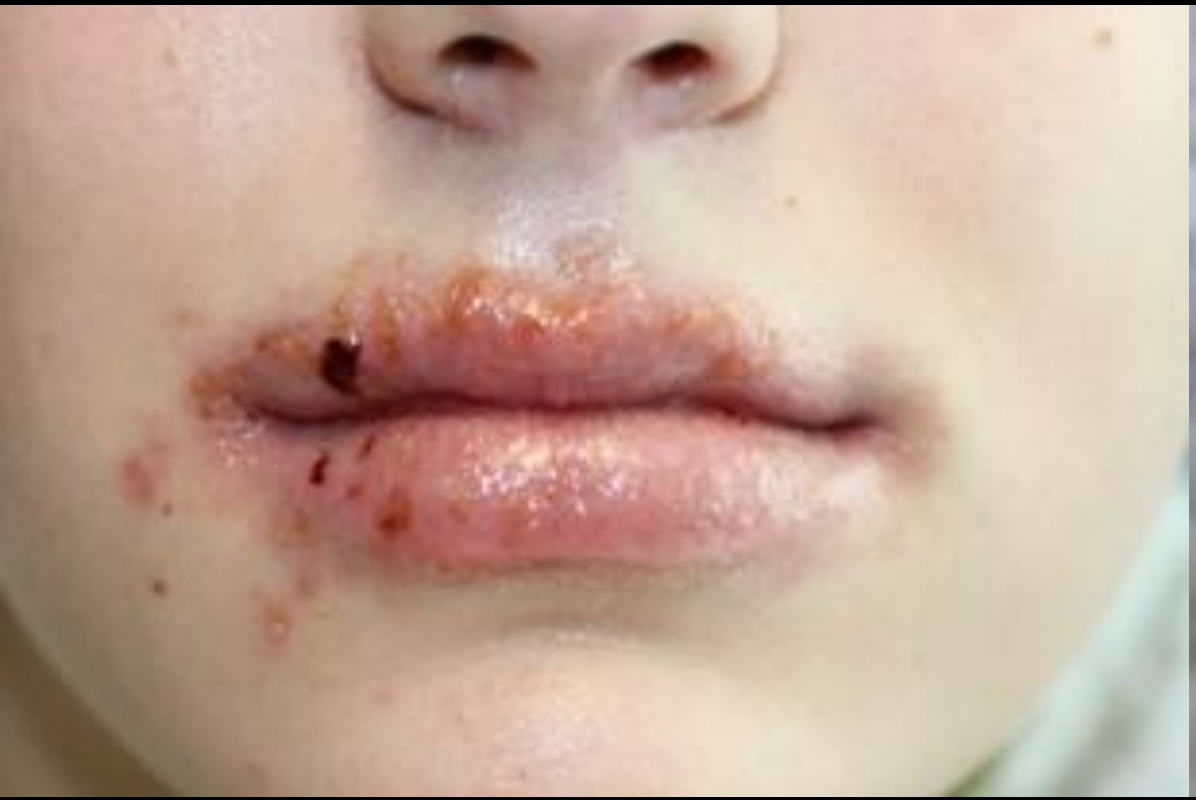
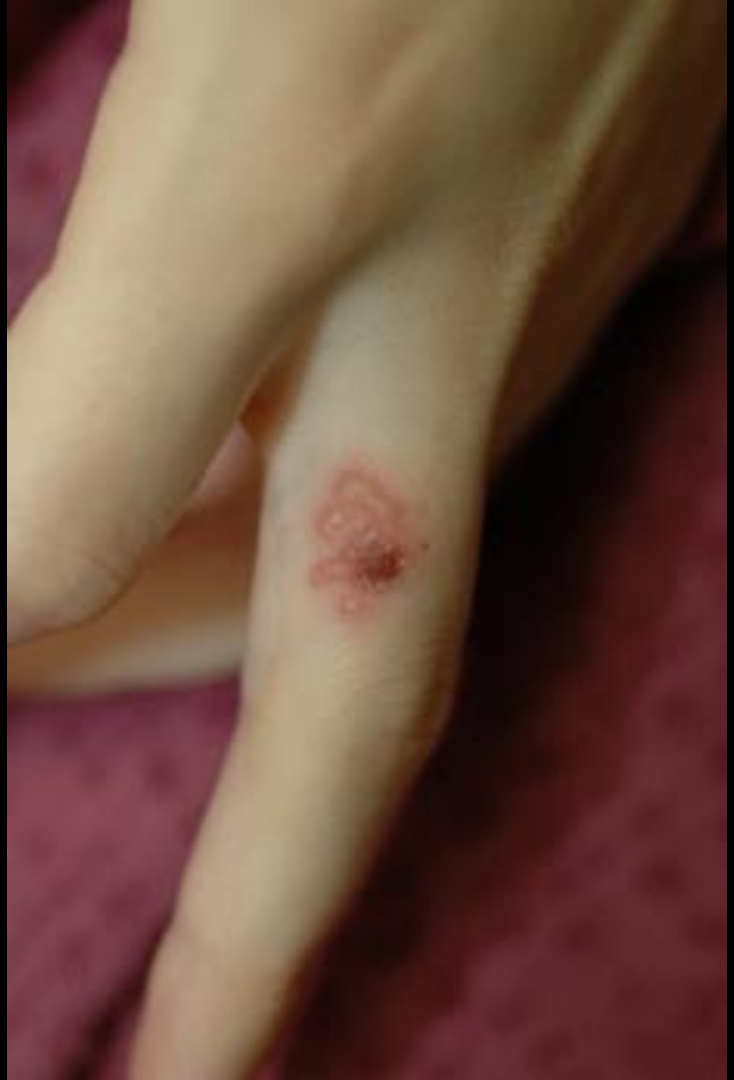
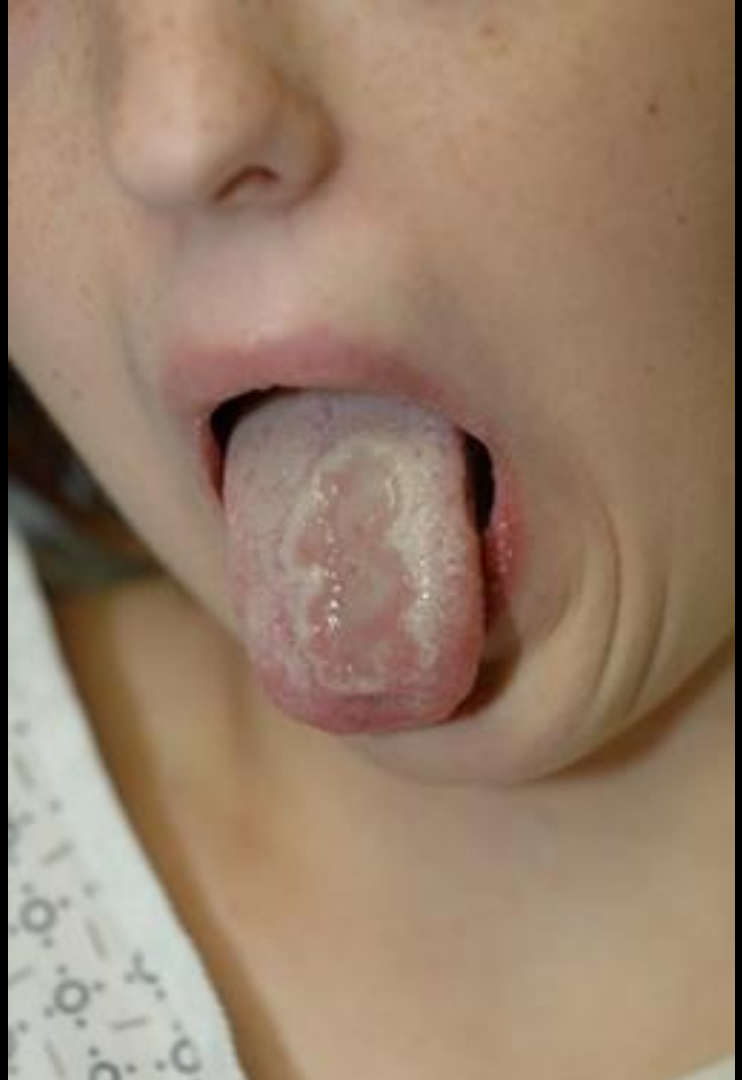
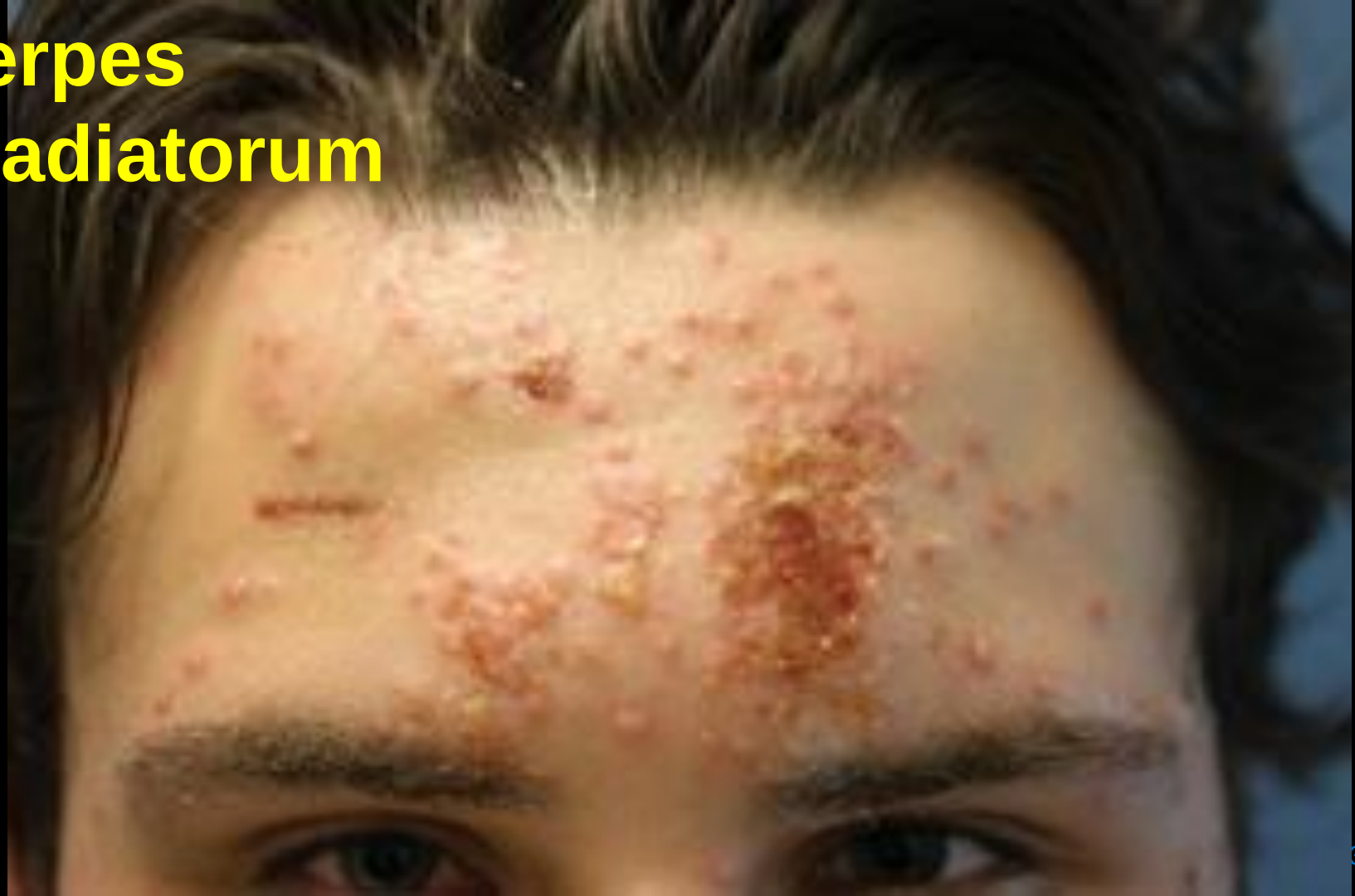
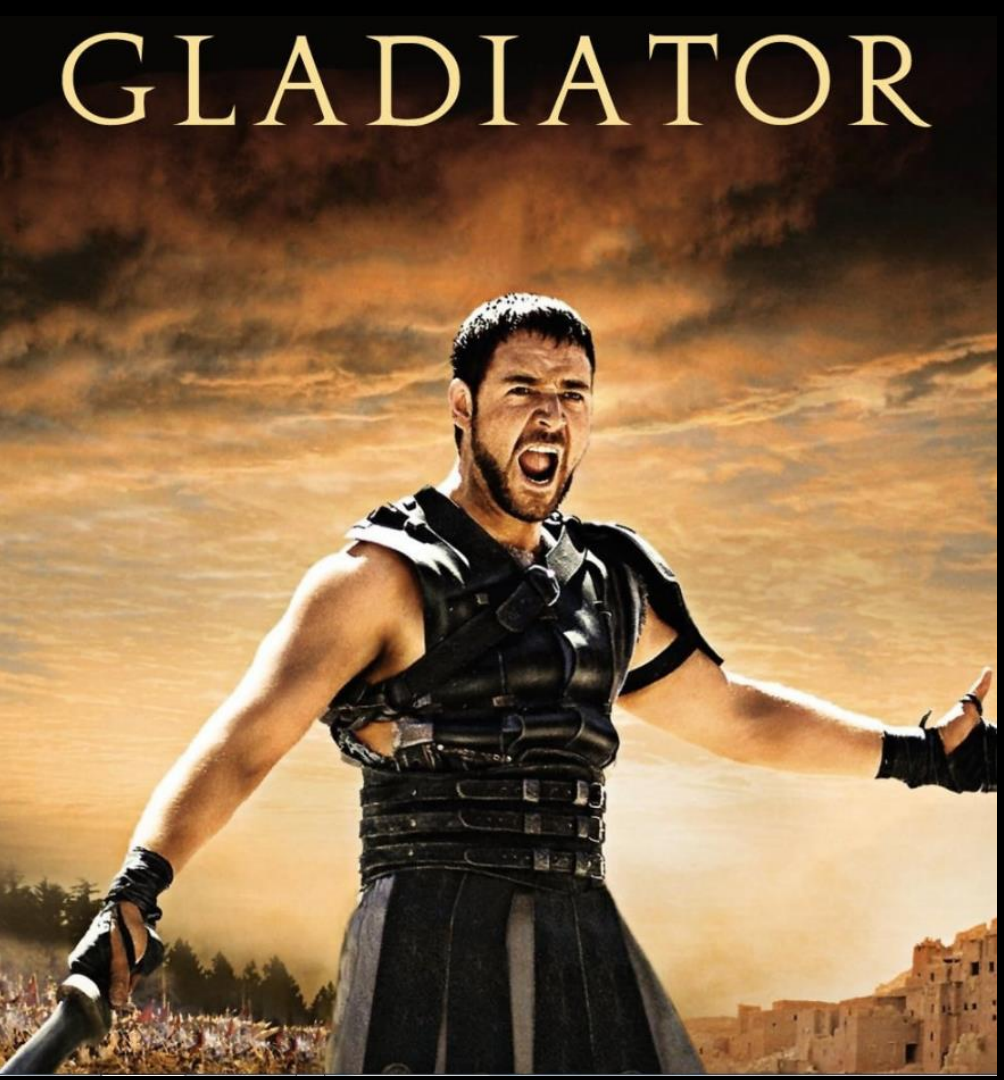






Herpes Gladiatorum




GLADIATOR

HSV Treatment

- Topical: not very effective
  - OTC Abreva
  - Rx Acyclovir ointment
- Oral:
  - Acyclovir (Zovirax), Valcyclovir (Valtrex), Famciclovir (Famvir) – treatment and prophylaxis
- IV: Acyclovir

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Peterson AR, et al. **Infectious Disease in Contact Sports.** Sports Health. 2019 Jan/Feb;11(1):47-58. doi: 10.1177/1941738118789954. Epub 2018 Aug 14.

HSV Prevention

- Moisturizer – improves skin barrier
- Sunscreen – sunlight reactivates the virus
- Avoid skin to skin contact, clean headgear
- Treat at first sign of symptoms – “before the outbreak”
- Some require prophylaxis for the season/year-round

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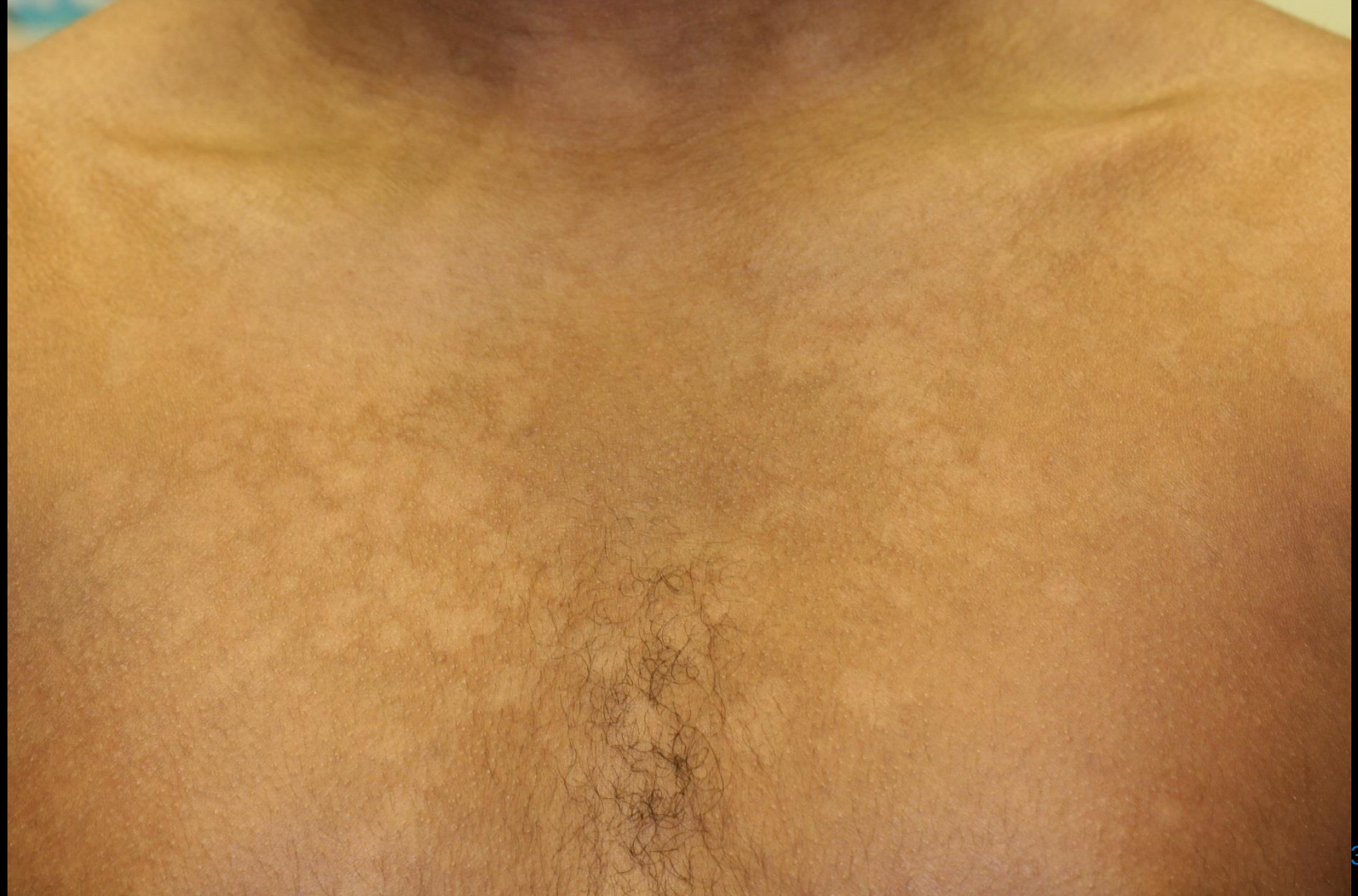
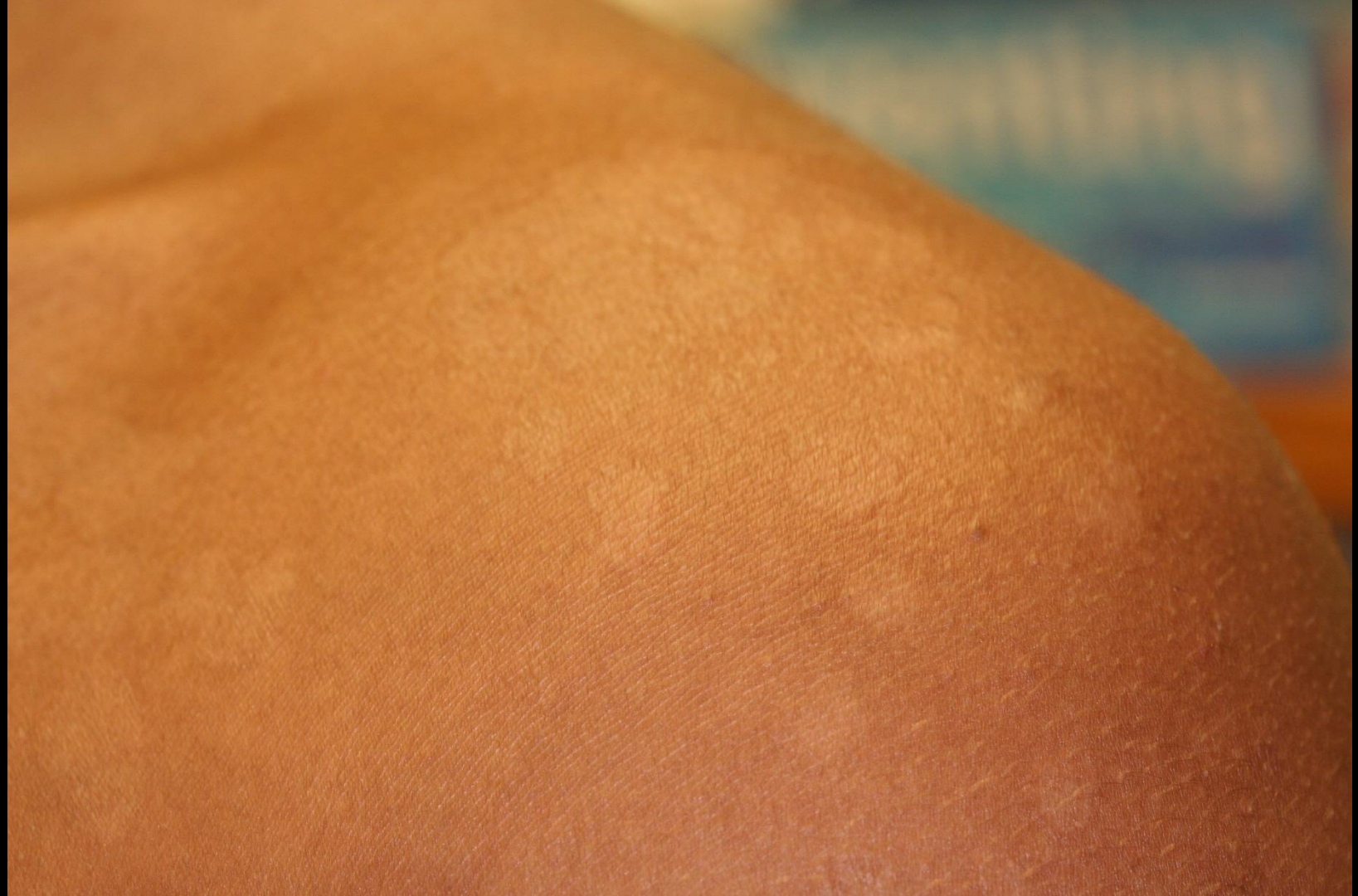
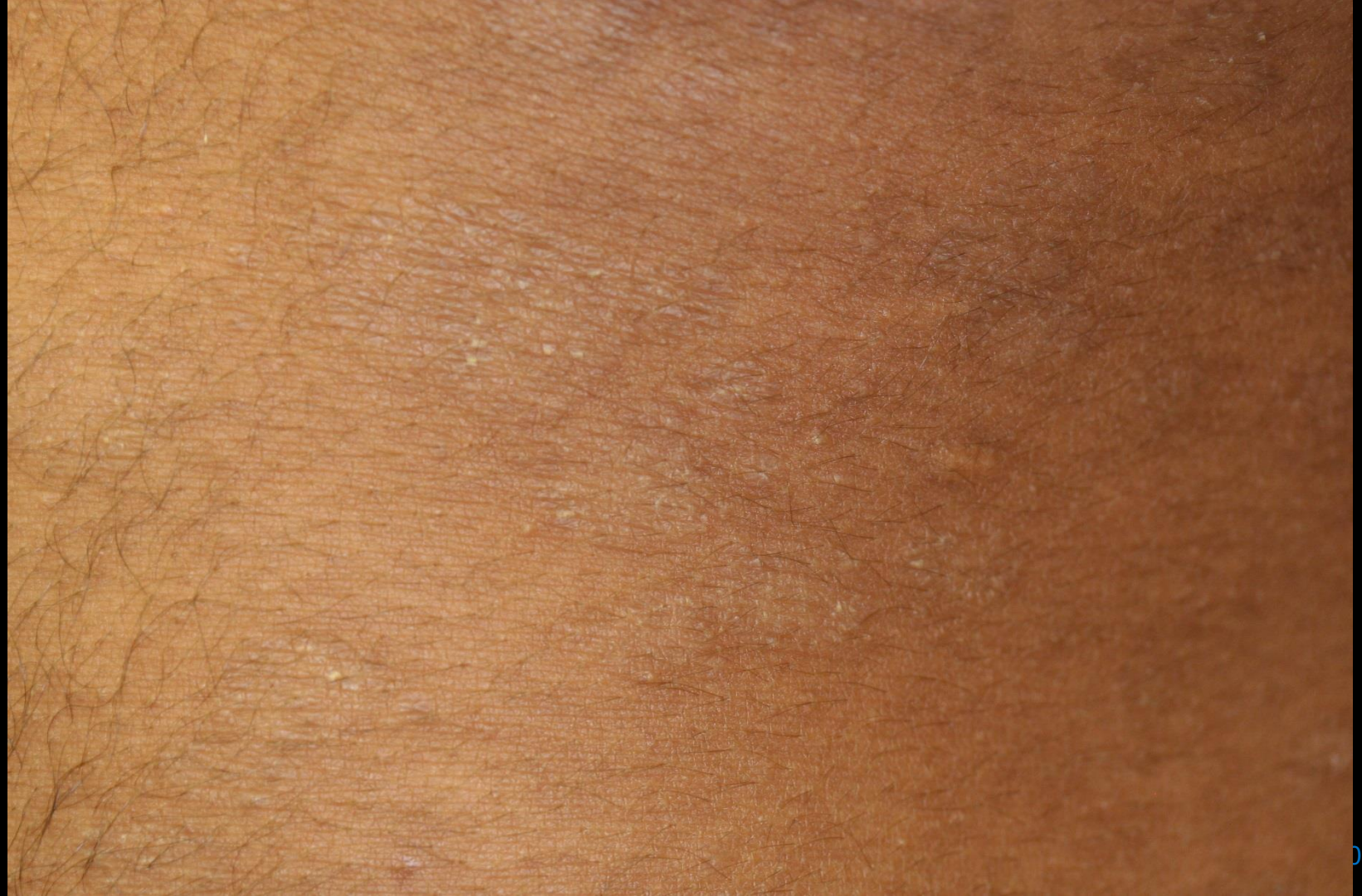
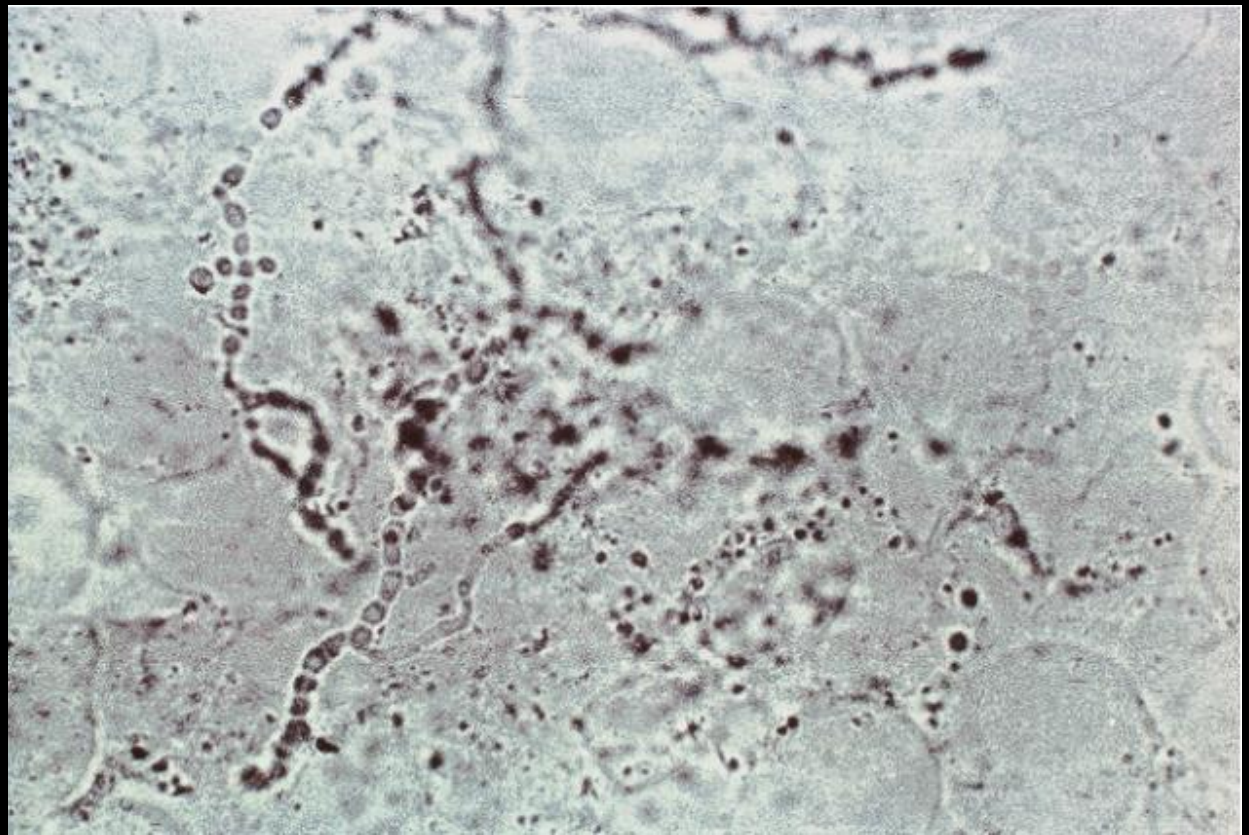
Herpetic Lesions (Simplex, fever blisters/cold sores, Zoster, Gladiatorum): To be considered "non-contagious," all lesions must be scabbed over with no oozing or discharge and no new lesions should have occurred in the preceding 72 hours. For a first episode of Herpes Gladiatorum, wrestlers should be treated and not allowed to compete for a minimum of 10 days. If general body signs and symptoms like fever and swollen lymph nodes are present, that minimum period of treatment before return to wrestling should be extended to 14 days. Recurrent outbreaks require a minimum of 120 hours of oral anti-viral treatment, again so long as no new lesions have developed and all lesions are scabbed over.







Examine under microsope



Clinical Pediatric Dermatology, 2016

Tinea Versicolor

- Aka - pityriasis versicolor
- Common superficial fungal disorder of the skin
- Multiple scaling, oval macules, patches, and thin plaques
- Trunk, upper arms, neck or face (sebum “rich” areas)
- Dimorphic fungus (yeast form): known as *Malassezia furfur*, aka *Pityrosporum orbiculare* or *ovale*.
- Yeast produces a dicarboxylic acid called Azelaic acid, this blocks dopa-tyrosinase reaction = causes **hypopigmentation** in dark skinned individuals

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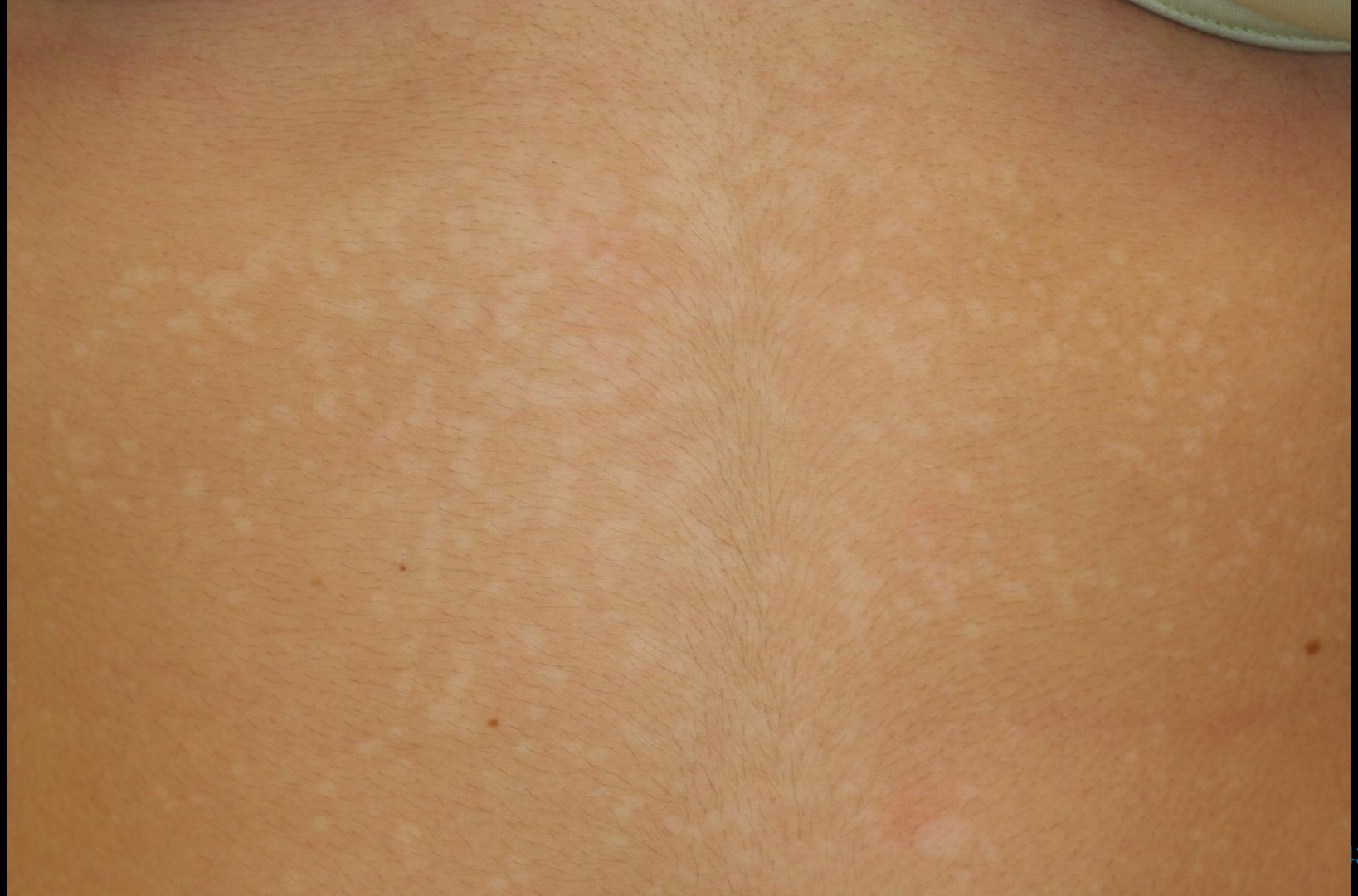

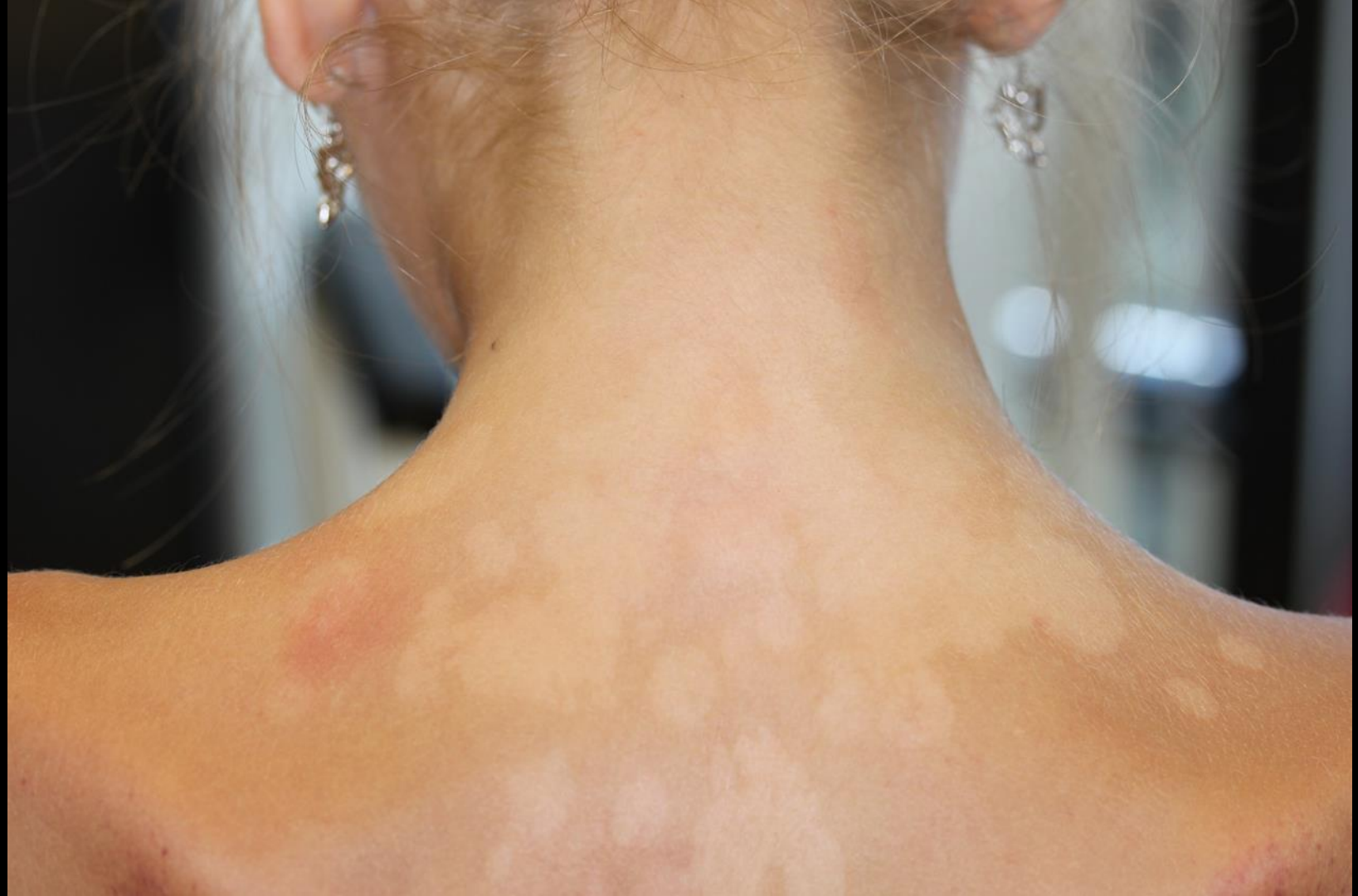

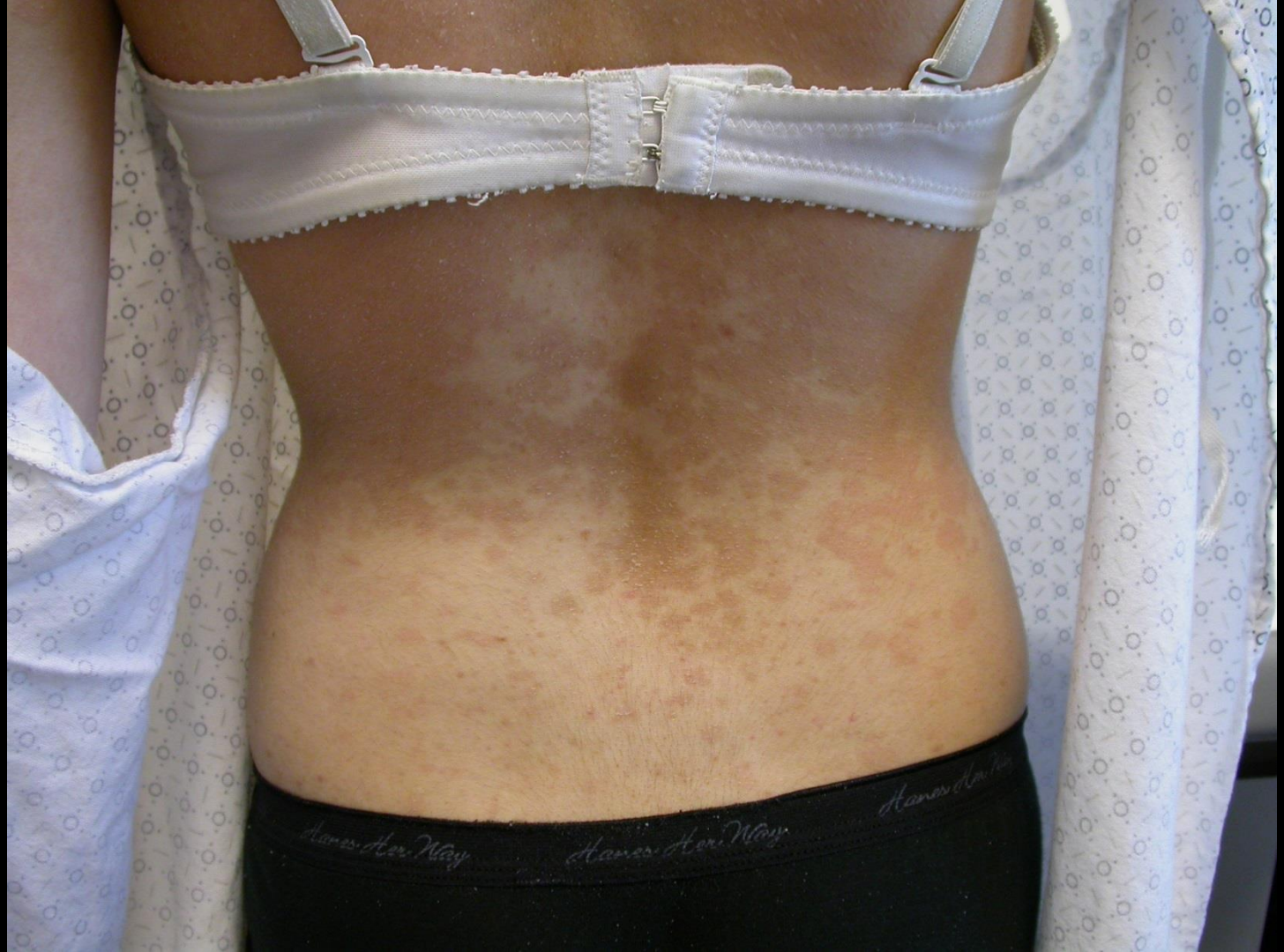
Hanes Her Way
Hanes Her Way

Tinea versicolor:

- DDx: CARP, Retention hyperkeratosis, vitiligo, tinea corporis, allergic contact dermatitis, postinflammatory hyperpigmentation

- Treatment:
- Topical – variety of options, hard for large surface areas
- Oral – easier, more costly

Tinea Versicolor Treatment

- Topical
  - Selenium sulfide shampoo daily x 1-2 weeks
  - Ketoconazole shampoo or cream daily x 1-2 weeks
  - Terbinafine spray x 2 weeks
- Oral
  - Ketoconazole: 400mg + exercise: FDA warning about liver toxicity (87.9% success)
  - Itraconazole: 400mg x1=200mg qd x1 week (drug interactions, liver toxicity, CHF)
  - **Fluconazole:** 300mg once, repeat in 1-2 weeks (81.5% success)

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Hu SW, M Bigby: Pityriasis versicolor: a systematic review of interventions. Arch Dermatol. 146 (10):1132-1140 2010
MJ Yazdanpanah, H Azizi, B Suizi: Comparison between fluconazole and ketoconazole effectivity in the treatment of pityriasis versicolor. Mycoses. 50:311-313 2007