

## Common Skin Infections and Rashes

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## Tinea Corporis

- Can be treated by topical antifungal agents
  - ✓ Allylamines best (terbinafine, butenafine)
  - ✓ Ciclopiroxamine
  - ✓ Azoles
- If widespread should be treated systemically
  - ✓ Terbinafine 250 mg QD x 2-4 weeks
  - ✓ Itraconazole or Ketoconazole for 2-4 weeks
    - Watch Drug Interactions
- Consider ketoconazole 2% or Selenium Sulfide 2.5% wash 3x/week to prevent recurrence

## Tinea Corporis

- Red scaly ring with central clearing
  - ✓ Large areas can be involved
  - ✓ Central clearing may not be complete
  - ✓ Can have pustules or vesicles at periphery
  - ✓ Can have multiple lesions
- May involve trunk, arms, legs, face
- Diagnosis can be confirmed by KOH exam or fungal culture





## Tinea Cruris

- Presents as chronic brown to red patches in groin folds
- Rare before puberty, more common in men
- Often spares scrotum, penile shaft, glans penis
- Should be differentiated from candidiasis that is typically bright red, often involves scrotum, glans penis, may manifest satellite pustules
- Usually responds to topical antifungal therapy
  - ✓ Avoid clotrimazole/betamethasone combination creams due to high risk of permanent striae

## Tinea Pedis

- Extremely common fungal infection of skin of feet, often coexists with onychomycosis
- “Moccasin” type causes redness and scaling of soles and sides of feet
- Interdigital type produces white macerated fissures between the toes
- Bullous type produces small blisters on sole of foot
- Responds well to topical therapy
  - ✓ Most effective are terbinafine, butenafine, ciclopiroxamine
  - ✓ Consider maintenance therapy with weekly treatment or with foot powders
  - ✓ Especially important to eradicate in diabetics



## Onychomycosis

- Fungal infection of toenails , often associated with tinea pedis
- May produce yellow or white discoloration of toenails with dystrophy or separation of nail from nailbed
- Nails may become thickened or develop white powder under the nail



## Tinea Versicolor (TV)

- Tinea versicolor (TV) usually presents as hypo or hyperpigmented macules with very fine scale on upper chest, upper back, shoulders
- Due to an overgrowth of a yeast (Pityrosporum ovale), which thrives on sebum
- Treatment:
  - ✓ Single doses or short courses of oral ketoconazole or itraconazole
  - ✓ Ketoconazole 2% wash or Selenium Sulfide 2.5% wash
- Hypopigmentation is due to dicarboxylic acid produced by the yeast, which inhibits melanin formation. Persists long after infection resolved.

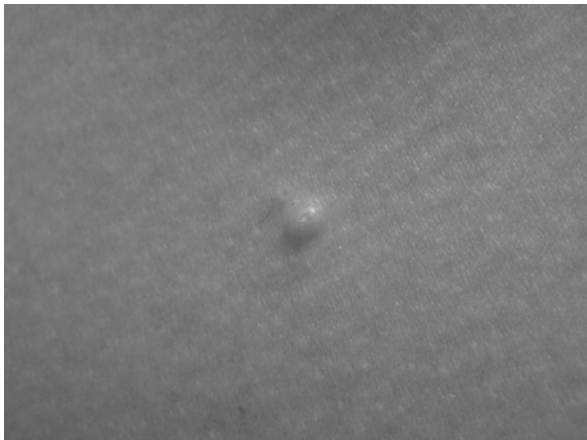
## Treatment of Onychomycosis

- Usually requires systemic antifungal agents with terbinafine being most effective. Itraconazole is less effective.
- Close to 100% relapse rate
- Topical antifungals are less effective
- Tinea pedis cannot be effectively treated long term unless onychomycosis is also eliminated.



## Molluscum Contagiosum

- Due to a large DNA virus classified as a pox virus
- Demographics:
  - ✓ Most common in children, especially with atopic dermatitis
  - ✓ Sexually transmitted in young adults
  - ✓ Immunosuppressed adults, especially with advanced HIV
    - May have very large lesions or facial lesions
- Often presents with a small (1-3mm) shiny, skin colored papules with a central dimple
- Typically resolve spontaneously eventually if not immunosuppressed
- Treatment typically with liquid nitrogen or curettage in adults. Many topical options in children.



## Warts

- Due to human papilloma virus (HPV), which is a double stranded DNA virus
- Can infect epithelial keratinocytes (skin, genital, mucosa)
- Well over 70 different HPV viral strains
- Can present anywhere in body, including fingers, hands, feet, genitals



## Genital Warts

- Most common sexually transmitted disease
- HPV types 6 and 11 are most common
- HPV types 16, 18, 31, 33 can induce squamous cell cancer
- Can appear as verucous papules in genital surface or genital area
- Can be associated with cervical cancer and anal cancer
- Individuals with suppressed cell mediated immunity are at particular risk for developing genital and anal cancer, including HIV and organ transplant patients





## Oral & Genital Herpes Simplex Virus (HSV)

- Are double-stranded DNA virus and generally spread by direct skin to skin contact
- HSV-1 – cause 80% oral-labial, 20% genital herpes cases
- HSV-2 – cause 80% genital, 20% oral-labial herpes cases
- In the U.S. population, prevalence of HSV-1 antibodies (indicating infection) is 80-90% and prevalence of HSV-2 antibodies is 20%

## Wart Treatment

- Aggressive debridement of hyperkeratosis followed by 2 cycles of liquid nitrogen
- Salicylic Acid coupled with topical imiquimod (stimulates local interferon production – lower recurrence rate, especially in genital lesions)
- Laser therapy
- Many other therapies – none particularly effective.

## HSV Cutaneous Manifestation

- Manifest as pain, burning, tingling prior to the appearance of the lesions
- Lesions are localized groups of vesicles on an erythematous base that rupture and form crust.
- Atypical clinical presentations common. History of recurrent eruption in same location preceded by symptoms is highly suggestive.
- Prophylactic therapy – 500 or 1000 mg valacyclovir QD
- Episodic therapy – valacyclovir 2000 mg Q12 hrs x 2 doses



## **Varicella Zoster Manifestations**

- Presents initially as erythematous plaque along a dermatomal distribution with sharp cut off at midline
- Pain, burning, tingling often precedes the eruption
- Vesicopustules soon develop in the plaque, which rupture and scab

## **Varicella Zoster**

- Caused by varicella zoster virus
- After an episode of varicella, virus remains latent in dorsal root ganglia and trigeminal ganglion
- Reactivation leads to viral proliferation and retrograde axonal transport to skin
- Most common in elderly and immunosuppressed patients

## **Varicella Zoster Complications**

- V1 dermatomal involvement can lead to visual impairment
- Post herpetic involvement can lead to persistent pain for months after the eruption resolves
- Complications and pain much more common in the elderly.





## Varicella Zoster Treatment

- Oral antivirals. The earlier initiated, the more effective and the lower the chance of complications.
  - ✓ Valacyclovir 1000 mg tid x 7 days is most common
- Post-herpetic neuralgia is treated with gabapentin, tricyclic antidepressants, nerve blocks, lidocaine patch, topical capsaicin

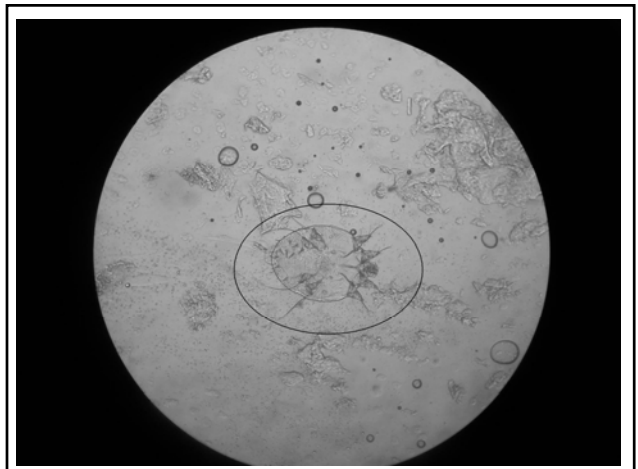
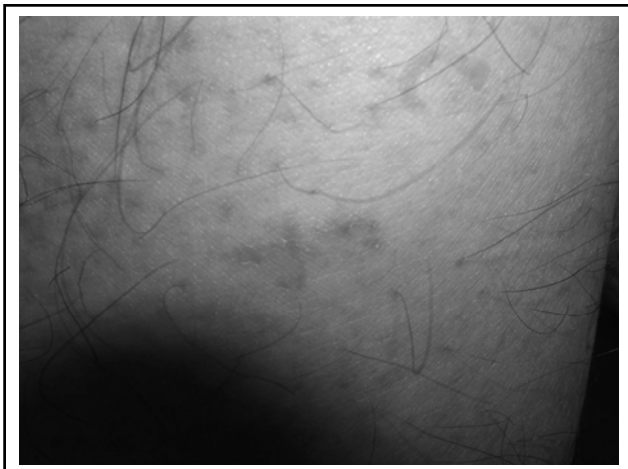
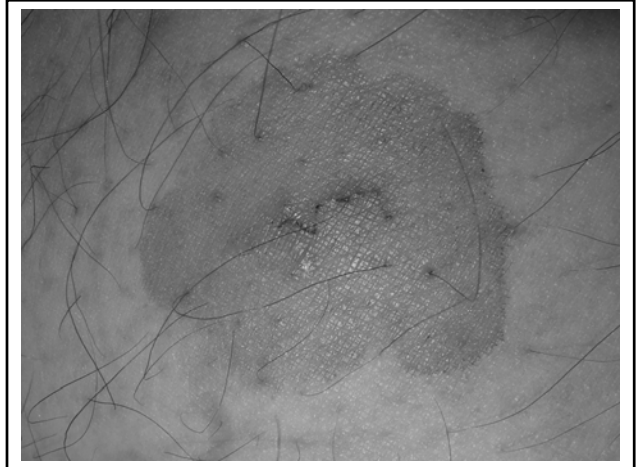


## Scabies

- Caused by itch mite Sarcoptes scabiei
- Common in children, nursing home residents, recently hospitalized individuals
- Infestation produces intense pruritus, especially at night
- Typical patient has 10-20 mites on their body and rash is caused by allergic reaction to mites and feces

## Scabies Clinical Manifestations

- Areas commonly involved include finger webs, abdomen, breast, groin, including penis.
- Classic lesions are burrows – thin white lines
- Crusted scabies – thick crusts on hands, feet, scalp due to thousands or millions of mites – in immunocompromised patients. May not be as itchy.



## Scabies Treatment

- Consider treating any patient with unexplained pruritus who has recently been institutionalized.
- Topical permethrin and/or oral ivermectin
  - ✓ Next morning, wash sheets and clothes worn in last 7 days.
  - ✓ Repeat in 1 week to kill recently hatched eggs.



## Cellulitis

- Common cutaneous infection most often caused by staph aureus & strep pyogenes
- Essentially NEVER BILATERAL. ALWAYS SYSTEMICALLY ILL.
- Skin demonstrates erythema, edema, warmth, tenderness
- Blood cultures should be obtained and patient started on a beta-lactamase resistant antibiotic or other appropriate coverage

## Impetigo

- Crusting, weeping eruption
- Methicillin Sensitive Staph Aureus is most common
- Empirically treat with 1<sup>st</sup> generation cephalosporin until culture results available



## Abscess

- Spontaneously appearing abscesses are specific manifestation of community acquired MRSA (ca-MRSA)
  - ✓ Antibiotic resistance genes carried on same plasmid as gene for virulence factor that promotes abscess formation

## Spontaneous Abscess

- Lance with cruciate incision
- Antibacterial therapy:
  - ✓ Empiric therapy with minocycline or tmp/smx
  - ✓ Antibacterial soap in shower
    - Dial bodywash OTC
    - Chlorhexidine wash
  - ✓ Consider mupirocin to nares 1 week/month
  - ✓ Consider weekly soak in chlorinated water (either swimming pool or bathtub with ¼ cup chlorine added). Address fomites as well.

## Acne Non-inflammatory

- Open and closed comedones
- Treatment:
  - ✓ Salicylic Acid 6% wash
  - ✓ Tretinoin 0.025% cream before bed  
2-3 x/week
  - ✓ Consider OTC benzoyl peroxide gel in AM

## Acne - Inflammatory

- Comedones
- Red Papules, pustules
- Face, possibly shoulders, chest, back
- Treatment:
  - ✓ Oral Doxycycline or Minocycline 100 mg bid
  - ✓ Topical Tretinoin 0.05% cream QHS
  - ✓ Benzoyl Peroxide/Clindamycin combo cream
  - ✓ Benzoyl peroxide or salicylic acid wash

## Acne - Inflammatory



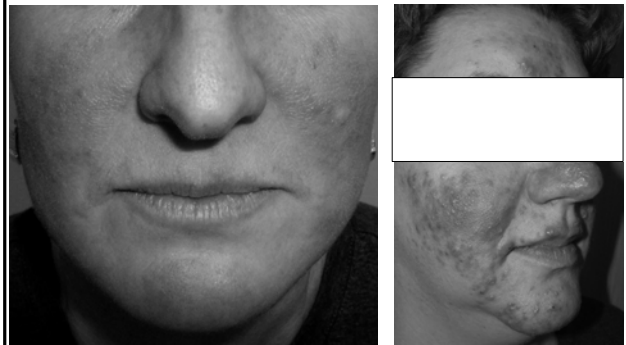
## Acne - Nodular



## Acne - Nodular

- Comedones
- Papules, Pustules
- Deep nodules
- Face, probably chest, shoulders, back
- Treatment:
  - ✓ Isotretinoin
  - ✓ If isotretinoin contraindicated, then treat same as inflammatory, but probability of success is low

## Rosacea



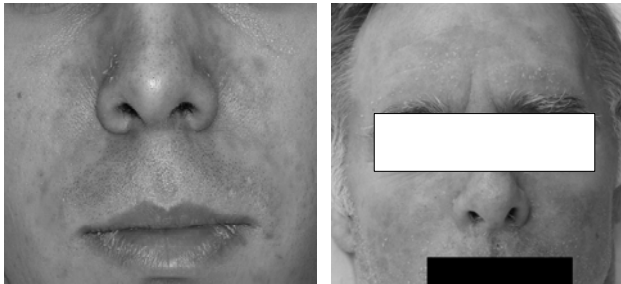
## Adult Acne

- Fairly common in women in 20s, 30s, and 40s. +/- teenage acne.
- Usually flares with monthly menstrual cycle due to hormonal variation.
- Mostly affects chin and jawline area.
- Topical therapy not very effective.
- Best treatment:
  - ✓ Oral contraceptives containing drospirinone
  - ✓ Oral spironolactone

## Rosacea

- Mild – red cheeks
- Moderate – red cheeks, red papules
- Severe – red cheeks, red papules, pustules
- Flushing (hot liquids, spicy food, alcohol)
- Treatment:
  - ✓ Topical Metronidazole
  - ✓ Oral Doxycycline

## Seborrheic Dermatitis



## Psoriasis

- Three main types:
  - ✓ Plaque
  - ✓ Guttate
  - ✓ Pustular
- Arthritis can be seen with any type
- AVOID SYSTEMIC STEROIDS

## Seborrheic Dermatitis

- Redness, greasy scale
  - ✓ Nasolabial, eyebrows, scalp, chest
- Often flares in hospitalized patients
- Worse in HIV, Parkinson, other neuro dz
- Worse with oily skin/malassezia
- Treatment:
  - ✓ Ketoconazole cream QD
  - ✓ Desonide 0.05% Lotion PRN
  - ✓ Wash face with dandruff shampoo

## Plaque Psoriasis



## Plaque Psoriasis

- Most common type
- Elbows, Knees, Scalp, Sacrum, Widespread
- May itch
- Chronic, persistent
- Treatment: Topical steroids, topical vitamin D, oral immunosuppressants, injectable biologics, UV light

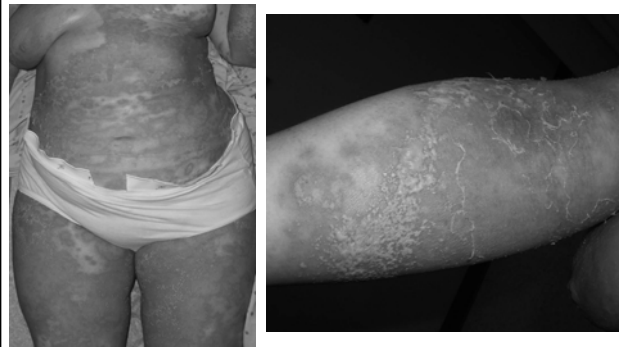
## Guttate Psoriasis

- 2<sup>nd</sup> most common
- More common in children
- Related to strep infections
- Trunk most involved
- May resolve spontaneously
- Treat with topicals, UV light

## Guttate Psoriasis



## Pustular Psoriasis





## Pustular Psoriasis

- Most acute type
- Can be life threatening
- May have fevers, elevated WBC, low calcium
- Can be caused by withdrawal of systemic steroids
- Treat with cyclosporine

## Contact Dermatitis

- CD4 T-cells specifically recognize a substance
- When substance contacts the skin, rash develops 8-48 hours later
- Rash lasts 7-28 days
- Very, very itchy
- Treatment:
  - ✓ Avoidance of substance
  - ✓ Oral or topical steroids for flares

## Psoriasis Therapy

- Topical steroids, topical vitamin D
- Ultraviolet Light (usually UVB or sunlight)
- Consider oral medications if over 10% of body surface involved
  - ✓ Methotrexate, Acitretin, Cyclosporine
- Injectable medications
  - ✓ Biologics – TNF-alpha inhibitors

## Contact Dermatitis – Nickel



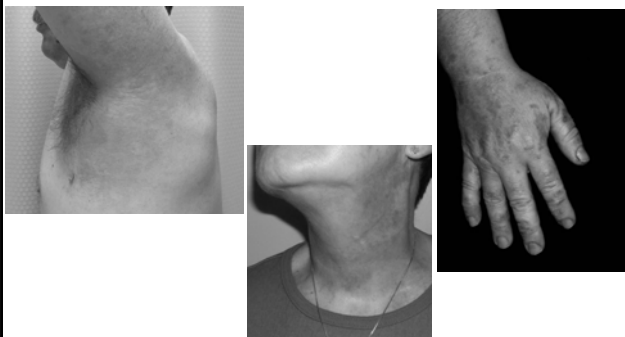
## Contact Dermatitis – Nickel

- Very common (up to 10% or more of the population)
- More common if ears pierced
- Common sources of exposure:
  - ✓ Jewelry (earrings, watches, etc)
  - ✓ Clothing (belts, snaps, rivets, etc)
  - ✓ Coins, Keys, Eyeglasses
- Coating items with nail polish not much help
- Internet for sources of nickel free jewelry

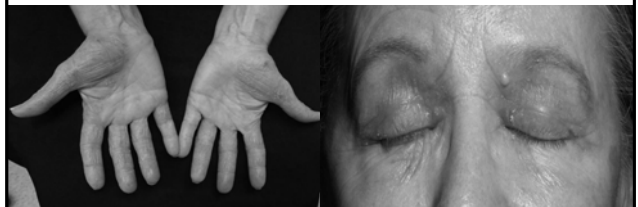
## Contact Dermatitis - Fragrance

- Face, Neck, Hands
- Common exposures:
  - ✓ Shampoo, soap, conditioner, hair products, moisturizer, perfume, deodorant
- Very difficult to avoid fragrances, as even products that say “Fragrance Free” often have fragrances
- Allergic patients only react to some fragrances

## Contact Dermatitis - Fragrance



## Contact Dermatitis - Preservatives



## Contact Dermatitis - Preservatives

- Face, Neck, Hands
- Common exposures:
  - ✓ Shampoo, soap, conditioner, hair products, moisturizer, perfume, deodorant
- Very difficult to avoid preservatives, as almost all products have preservatives
- Allergic patients only react to some preservatives

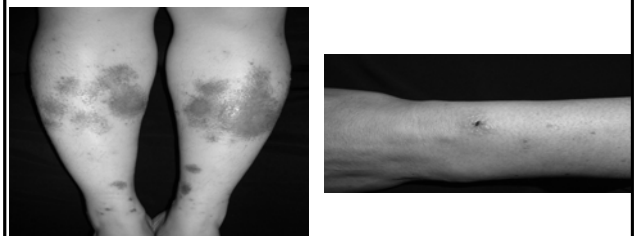
## Contact Dermatitis – Poison Ivy

- Very common, probably 75% of the population is sensitized
- “Streaky Dermatitis”
- New spots can appear for days after rash starts
- Rash caused by Urushiol
- Blister fluid does not spread the rash
- Treat with 3 weeks of prednisone or with high potency topical steroids

## Contact Dermatitis – Poison Ivy



## Contact Dermatitis - Neosporin



## **Contact Dermatitis - Neosporin**

- Very common, up to 10% of the population is allergic
- Both Neomycin (most common cause of allergic contact dermatitis from topical medications) and Bacitracin

## **Contact Dermatitis - Other**

- Can be allergic to almost anything:
  - ✓ Clothing, Shoes
  - ✓ Rubber gloves
  - ✓ Leather
  - ✓ Fingernail Polish, Acrylic Nails
  - ✓ Hair Dye, Perms
  - ✓ Tattoos
  - ✓ Etc, etc