

**NURS 821 Advanced
Pathophysiology
Margaret H. Birney PhD,RN**

Lecture 3 Mechanisms and
Manifestations of Disease (cont'd)
Part 5 Pathophysiology of Selected
Skin Disorders

Skin Disorders

- Most clinical manifestations involving the skin are secondary to another disorder
- Need to identify primary disorder
- General treatment rule for rashes-If wet, dry it; If dry, wet it!

Inflammation

Abnormal Resolution

Keloid



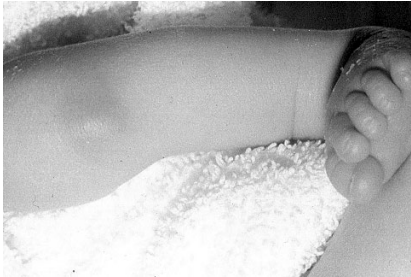
Spider Bite



Infectious Disorders of the Skin

Bacterial Infections

Cellulitis



Cellulitis



Impetigo Characteristics

- Small vesicles, pustules, or large bullae occurring usually on exposed areas or areas with recent skin breaks
- Vesicles leave denuded areas, crusty yellow fluid
- Pruritus
- Complications-If streptococcal in origin-glomerulonephritis

Impetigo



Disorders Affecting the Skin with Systemic Effects

Psoriasis (NPF, 2000)

- Definition-A noncontagious skin disorder affecting 6.4 million in U.S.
- Appearance-inflamed swollen skin lesions with silvery white scale, known as plaque psoriasis
- Cause-unknown, probably a genetic autoimmune skin disorder
 - 1 in 3 report family history
 - No known pattern of inheritance
 - May require a "trigger" event, e.g. strep throat, skin injury, medications (steroids), vaccinations
 - Immune system triggers excess skin cell reproduction

Psoriasis Incidence (NPF, 2000)

- M=F
- Any age, usually 15-35
- 150,000 to 250,000 new cases diagnosed yearly
- Pattern of scaling: face is rare; scalp, knees, hands, feet. No exempt areas, including genitals.

Psoriasis Forms

1. Plaque-most common
2. Guttate-small dot-like lesions
3. Pustular-characterized by weeping lesions and intense scaling
4. Inverse-characterized by intense inflammation and little scaling
5. Erythrodermic-intense sloughing and inflammation
6. May range from mild to moderate to severe and disabling

Psoriasis Pathophysiology (NPF, 2000)

- Normally, skin goes through normal growth-basal cell growth move through epidermis to stratum corneum. Dead cells shed q 28 days
- Wound healing-regenerative maturation causes faster cell growth to repair, accompanied by inc. blood supply
- Psoriatic skin acts like wound repair cycle-cell regeneration q 2-4 days and cannot be shed quickly enough forming scaly lesions.
 - Results in plaque of dead skin cells, redness due to inc. blood supply to rapidly dividing skin cells

Psoriasis Effects

- Disfiguring
- Physical limitations
- Many skin care demands
- Risk of infection
- Arthritis-discussed with other arthritis conditions
- 400 deaths annually due to severe, extensive forms-usually pustular psoriasis or erythrodermic psoriasis where large skin surfaces are shed
- Complications-infection, fluid and electrolyte imbalances, cardiovascular

Psoriasis

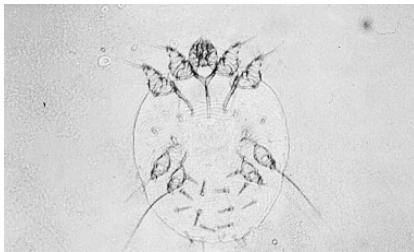


Localized Skin Infestations

Scabies

- Etiology-invasion by *Sarcoptes scabiei*, a mite
- On increase in U.S., probably due to daycare
- Symptoms-itchy red lesions due to female burrowing to deposit eggs and feces; 2-3 eggs/day for 4-5 weeks; Complicated by infections
 - Itching severe at night
 - Usually between fingers, around wrists, elbows, navel, genitals, nipples. Rare on face
 - Lesions thin-2 mm long-red to red-brown
 - Scabs over scratched areas
- All socioeconomic groups, especially in crowded conditions

Scabies Micrograph



Scabies Lesion



Skin Cancers

Basal Cell Carcinoma

- Most frequent
- Usually arise from epidermis and hair follicles
- Usually older persons with prolonged, cumulative sun exposure
- Metastasis-rare but may invade local tissue
- Characterized by smooth surface, pearly border, central ulceration

Squamous Cell Carcinoma

- Can affect both skin and mucous membranes
- Most frequent in sun, radiation, or burn exposed areas
- Local imbalances of T-cell function in UV exposed light-damaged skin
- Characteristics-hyperkeratotic nodule w ulcerated base

Malignant Melanoma

- Arises from the melanin producing cells
- High invasion and metastasis risk
- Increased in sun-exposed
- Occurs in young and middle aged adults
- Characteristics-variable colors and irregular borders
- Occurs on trunk in men and legs in women

Photo Library

- Loyola University Dermatology Medical Education Website
 - Dermatology Atlas
 - Basal Cell Cancer
 - Squamous Cell Skin Cancer
 - Melanoma
- www.meddean.luc.edu/lumen/MedEd/medicine/dermatology/title.htm
