Skin Pathology Outline

- Introduction
- Infectious disorders
- Inflammatory disorders
- Bullous disorders
- Benign neoplasms
- Malignant neoplasms

Clinical Terms You Should Know

- Erythema: redness
- Macule: flat lesion
- Patch: a large macule (<1cm)
- Papule: a raised lesion
- Plaque: a large papule (>1cm)
- Vesicle: a blister
- Bulla: a big blister
- Pustule: a blister that contains pus
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Impetigo

• Staph aureus or Strep pyogenes
• Children
• Face
• “Honey-crusted” pustules

Impetigo

• Staph aureus or Strep pyogenes
• Adults
• Face/scalp
• Sharply-circumscribed, erythematous plaques

Erysipelas

• Many potential organisms
• Excessive pain following small injury
• Rapidly progressive tissue necrosis and gangrene
• Need early, aggressive treatment (surgery and IV antibiotics)

Erysipelas

Necrotizing Fasciitis
Necrotizing fasciitis

Acne vulgaris

- *Propionibacterium acnes*
- Sebaceous glands get plugged, then bacteria cause inflammation of the hair follicle/sebaceous gland
- Comedones and/or pustules

Acne vulgaris

Types of Acne Lesions

- Sebaceous gland
- Bacteria
- Covered by skin
- Not covered by skin
- Neutrophils
- Dead cells and debris

Open comedone (whitehead)
Closed comedone (blackhead)
Pustules

Acne vulgaris

Acne rosacea

- Immune-mediated disease
  (no known microbial trigger)
- Follicles are inflamed and plugged
- Four stages:
  1. Flushing episodes
  2. Persistent redness and telangiectasias
  3. Pustules
  4. Rhinophyma
Rosacea

- Redness and telangiectasia
- Rhinophyma

Ringworm (tinea)

- Caused by dermatophytic (skin-loving) fungi like *Microsporum* and *Trichophyton*
- Red, scaly, “ring-shaped” lesions
- Named by anatomic site
  - *Tinea corporis* = ringworm on body in general
  - *Tinea pedis* = ringworm of foot (athlete’s foot)
  - *Tinea cruris* = ringworm in groin (jock itch)

Sporotrichosis

- Fungus: *Sporotrichum schenckii*
- “Rose gardener’s disease”
- Painless papule, then open sore

Verruca vulgaris

- HPV (usually serotypes 2 and 4)
- Common wart
- Most common on extremities
- Most regress spontaneously
Verruca vulgaris

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Molluscum contagiosum

- Pox virus
- Centrally-umbilicated red papules
- Very contagious

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Molluscum contagiosum

- Umbilication

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Erythema multiforme

- Usually HSV; sometimes drug-related
- “Target” lesions and/or vesicles on skin, mucous membranes
- Stevens-Johnson syndrome is a related disease characterized by skin necrosis.

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Erythema multiforme

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Scabies

- Parasite: Sarcoptes scabei
- Hands/wrists, abdomen/groin
- Itchy rash, may see “burrows”
- Highly contagious

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**Scabies**

- Common, inherited, autoimmune disease
- Itchy red lesions with silvery scales
- Most common on elbows, knees, scalp
- Patients may also have arthritis

**Psoriasis**

- Common, chronic, immune-mediated disease
- Skin: purple polygonal papules
- Mucous membranes: lacy-appearing lesions (Wickham's striae), erosions, or white patches

**Lichen planus**

- Common, chronic, immune-mediated disease
- Skin: purple polygonal papules
- Mucous membranes: lacy-appearing lesions (Wickham's striae), erosions, or white patches
Wickham’s striae

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Two bullous diseases
- Pemphigus vulgaris
  - Antibodies against spot desmosomes
  - Superficial bullae
  - Mouth first, then skin
- Bullous pemphigoid
  - Antibodies against hemidesmosomes
  - Subepidermal bullae
  - Groin, axillae, arms

Pemphigus vulgaris
- Antibodies against spot desmosomes (between epidermal cells)

Bullous pemphigoid
- Antibodies against hemidesmosomes (beneath epidermal cells)

Ruptured bullae
Intact bullae
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Nevus (mole)

- Benign neoplasm of melanocytes
- Round, evenly-pigmented
- Progresses from junctional to compound to intradermal over time
- Melanoma occasionally develops in nevi – so watch for changes (size, shape, color)

Junctional nevus
Compound nevus
Intradermal nevus

- Common benign tumor of blood vessels
- “Strawberry hemangioma” occurs at birth, usually regresses within a year

Hemangioma

Keratoacanthoma

- Rapidly-growing, crater-like nodule
- May evolve into squamous cell carcinoma (must be removed)
Keratoacanthoma

Seborrheic keratosis
- Common benign epidermal tumor
- Increasing incidence with age
- Brown-grey, velvety-waxy plaque
- “Stuck-on” appearance

Seborrheic keratoses

Actinic keratosis
- Dysplastic epidermal cells
- Ill-defined, rough patches
- Related to sun exposure (“actinic”)
- Considered pre-malignant

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Basal cell carcinoma

- Malignant tumor of cells in basal layer of epidermis
- Raised, “pearly” nodule
- Older patients, sun-exposed skin
- Locally aggressive, but almost never metastasizes!

Basal cell carcinoma “rodent ulcer”

Squamous cell carcinoma

- Malignant tumor of squamous cells
- Reddish nodule or plaque
- Older patients, sun-exposed skin
- Can metastasize
Squamous cell carcinoma

Melanoma
- Malignant tumor of melanocytes
- All ages, sun-exposed skin
- Worst prognosis of all skin cancers
- Prognosis directly related to depth of invasion

Is it melanoma, or just a mole?
Look for:
- Asymmetry (in shape or color)
- Border (irregular)
- Color (variegated)
- Diameter (usually >6mm)
- Elevation (or textural change within lesion)

More examples of melanoma

Oral melanoma
Melanoma prognosis

- Depth of invasion = most important factor
- Measure depth by Clark levels or Breslow thickness
- Presence of metastases = worse prognosis
- Ulcerated surface = worse prognosis

Clark levels and 10-year survival

Breslow thickness and 10-year survival