Diseases of the Skin

Physiology & Function
- Protection
- Holds us together
- Water regulation
- Vitamin D
- Immune processing

Basic Patterns
- Interplay between epidermis and dermis.
- Rash, reddened
- Changes in pigmentation
- Shape of isolated lesions
  - Macule: flat, close your eyes
  - Papule: raised
  - Vesicle: fluid filled
Inflammatory Dermatosis
- Hives
- Urticaria (wheal)
- Generalized
- Allergic reaction
  - Bee sting
  - Medications
- IgE mediated
  - Histamine release
  - Vascular dilation
  - Fluid in tissues

Urticaria

Eczema, ‘Boiling Over’
- Contact dermatitis
- Local reaction to toxic agent
- Epidermal spongiosis
- Vesicles
- Poison ivy

Contact Dermatitis

Erythema Multiforme
- Error in notes: Red macule with darker center
- Immunologic in most cases
- Degeneration of basal layer of epithelium with
- Lymphocytic infiltrate of dermis
- Rather nonspecific reaction
Chronic Inflammatory Dermatoses

- Persistent
- Epithelial reaction characterized by increased turnover rate
  - Thickening
  - Scaling
  - Roughening
- Variable inflammation of dermis

Psoriasis

- Ag/Ab reaction?
- Knees, elbows, scalp, glans
- Whole body is pretty bad
- At areas of trauma
- Salmon skin

Psoriasis

- Acanthosis
  - Thickening of the epidermis
  - Long rete pegs
  - Thinned granulosa
  - Ag/Ab and C’
  - Microscopic abscesses in epidermis

Lichen Planus

- Purple plaques
- Saw-tooth epidermis
- Band-like lymphocytic infiltrate in dermis
- Self limiting but may last years
- Hypopigmentation when resolves

Lupus Erythematosus

- Autoimmune
- Two forms
  - Systemic -> Discoid (skin only)
- Systemic problems
  - Kidney failure
  - Vasculitis and DVT with emboli
- Antibodies in serum
  - Anti-DNA
  - Other nuclear

Lupus Erythematosus

- Chronic inflammation
  - Derm/epi junction
  - Adenexal structures
- Antibodies at derm/epi junction
Lupus Erythematosus

- Antihuman IgG
- Concentration at basal layer.

Acne

- Acne vulgaris
  - Males mostly
  - Testosterone
- Observations
  - Keratin plugging of hair shafts
  - Propionum bacteria grows
  - Breaks down sebaceous oils
  - Very reactive

Other Direct Infections of Skin

- Bacterial
  - Abscesses
- Fungal
  - Ringworm
- Worms
- Viruses
  - Smallpox

Gram+ Bugs

Viruses
**Blistering Conditions**
- **Pemphigus vulgaris**
  - Ab against skin and basement membrane.
  - Acantholysis
  - Suprabasalar cleft
  - Blisters with sloughing of skin
  - Pressure points

**Cleft Position is Important**
- Subcorneal: Impetigo
- Suprabasalar: Pemphigus vulgaris
- Subepidermal or basilar:
  - Bullous pemphigoid
  - Dermatitis herpetiformis

**Bullous Pemphigoid**
- Antibodies against hemidesmosomes.
- Hemidesmosomes anchor epidermis to basement membrane

**Dermatitis Herpetiformis**
- Not actually the virus herpes
- ‘Herpes’ describes radial spread of a lesion.
- In some: the symptoms are associated with wheat products (gluten)
- IgA deposits in the tips of the dermal papillae
- Microabscesses in the dermal papillae
Changes in Pigmentation

Vitiligo

Proliferative Melanocytic Lesions

- Nevi
  - Benign growths of young melanocytes
  - Born with them. We all have about 20
  - Not a freckle
- Dysplastic nevus
  - Abnormal maturation
  - May become malignant
- Malignant melanoma

Nevus

- 'Mole', benign proliferation of young melanocytes
- Where are the nevus cells
  - Epidermal
  - Dermal
  - Compound
- Spitz nevus
  - Young people
  - Looks aggressive, but not
- Halo nevus (one undergoing regression)

Dermal Nevus

- Clusters of young melanocytes.
- Confined to dermis.
- Maturation from ‘surface to base’.
Nevi

Large Nevi

Make Lemonade

Dysplastic Nevus

- Abnormal maturation of nevus cells
- May proceed to malignant melanoma
- Sometimes part of a familial syndrome.

Malignant Melanoma

- Malignant melanocytic tumor
- Very unpredictable tumor
- Genetics
- Solar and UV exposure
- Ethnic
- Radial growth followed by
- Penetrating phase
- Metastasis
- Persistent
  - Transplant 15 years later died with it

Melanoma History
Melanoma

- Clusters
- Nucleoli
- Nuclear margins
- Lack of cohesion
- Depth

Malignant Melanoma

- Flag sign
- Nodular or vertical growth very important
- Depth > 2 mm
- Bad development
- Sites:
  - Skin
  - Conjunctiva
  - Retina
  - Iris
  - Meninges

Ocular Melanomas

- Conjunctival
- Iris
- Retinal ->
- Histology:
  - Spindle
  - Epitheloid -> Bad
- Liver mets

Epithelial Tumors

- Seborrheic keratosis
- Older people
- Pucker up big boy
- Stuck on appearance
- Greasy looking
- Keratin rich
- Benign
- Epithelial proliferation
Actinic Keratosis
- Solar exposed skin
- Epithelial proliferation
- Dysplasia
- +/- malignant potential

Keratoacanthoma
- Now considered a low grade squamous cell malignancy
- Often will regress
- Solar exposed skin
- Rapidly growing
- ‘Cup or crater shaped’
- Epithelial proliferation
- Marked atypia

Basal Cell Carcinoma
- The most common malignancy we suffer from.
- Solar exposed skin.
- Pearly
- Raised edges
- Maybe central ulceration
- Stays at home, but
- Can locally invade and cause havoc.

Basal Cell Carcinoma
- Arises from basal layer of epithelium.
- Invades locally
- Grows in clusters
- Peripheral palisade
- Sometimes adenexal skin structure differentiation

Squamous Cell Carcinoma
- Arises from differentiated squamous epithelium
- Sun exposed
  - UV
- Age of incidence is dropping
- Metastasizes

Squamous Cell Carcinoma
- Cells produce keratin
- Pearls
- Invade and spread
- High mitotic count
Squamous Cell Carcinoma
- Keratin Pearls

Dermal Tumors
- Fibroma

Kaposi’s Sarcoma
- HIV & Herpes 8
- Vascular malignancy

Xanthomas
- Histiocytes containing lipid
- Around eyes
- Extensor surfaces of extremities
- Diabetes
- Liver disease
- Hyperlipidemia
Kaposi’s Sarcoma