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 epi.

Lichen Planus

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

Lupus Erythematosis

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

Lupus Erythematosis

- Chronic inflammation
  - Derm/epi junction
  - Adenexal structures
  - Antibodies at derm/epi junction
**Lupus Erythematosis**
- 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 herpatiformis

**Bullous Pemphigoid**

- Antibodies against hemidesmosomes.
- Hemidesmosomes anchor epidermis to basement membrane

**Dermatitis Herpatiformis**

- 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
A Brief Commercial Message

- John West Red Salmon Company

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

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

Make Lemonade

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

- 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

Malignant Melanoma

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

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

Dermal Tumors
- Fibroma

Xanthomas
- Histiocytes containing lipid
- Around eyes
- Extensor surfaces of extremities
- Diabetes
- Liver disease
- Hyperlipidemia