Derm-Optometry
Dermatology for the Primary Care OD
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Skin...so what??
- Largest organ in the body
- Most important line of physical defense
- Ocular system and Integumentary system relate on multiple levels
- Thousands of dermatological conditions

Simply, the eyes have skin around them, so we need to know....

Where do we start???
- Anatomy
- Dermatologic Disease
- Etiology
- Management & Treatment
- Referral
- Prevention
- Case Presentation

Anatomy of the Skin

Layers
- Epidermis — 5 layers; inner to outer; keratocytes
  - Basal Cell Layer
  - Squamous Cell Layer
  - Stratum Granulosum & Stratum Lucidum
  - Stratum Corneum
- Dermis — 2 layers; inner to outer; water
  - Papillary Layer
  - Reticular Layer
- Subcutis — Fat & Collagen
Relevant Ocular Anatomy

- Lids
- Lateral Canthus
- Sclera
- Limbus
- Iris
- Cilia
- Lacrimal Gland
- Puncta
- Plicae semilunaris
- Caruncle
- Bulbar Conjunctiva
- Palpebral Conjunctiva

Eyelid Structure & Function

- Ectropian
- Eversion
- Euryblepharon
- Ankyloblepharon
- Epiblepharon
- Entropian
- Distichiasis
- Epicanthus
- Coloboma
- Blepharophimosis
- Cryptophthalmos
- Blepharoptosis
- Dermatochalasis
- Blepharochalasis
- Trichiasis
- Floppy Eye Lid Syndrome
- Eyelid Retraction
- Blepharospasm

Dermatological Disease

(Pandora’s Box)

- What are we going to focus on?
  - Skin related conditions around the eye/effecting the eye

- Relevance for an OD?
  - To know an eye at risk

Etiological Plethora

- Inflammation
- Allergic
- Infectious
- Trauma
- Neoplasms & Dysplasia
- Environmental
- Systemic
- Nutritional
- Genetics

Lesions

- **Primary**
  - Macule & Patch
  - Papule
  - Plaque
  - Nodule
  - Pustule
  - Vesicle
  - Bulla
  - Wheal

- **Secondary**
  - Scales
  - Crust
  - Erosion
  - Ulcer
  - Fissure
  - Atrophy

- **Special**
  - Excoriation
  - Comedo
  - Milia
  - Cyst
  - Burrow
  - Lichenification
  - Telangiectasia
  - Petechiae
  - Purpura

Patterns and Distributions

- Annular
- Linear
- Confluent
- Dermatomal zosteriform
- Universalis
- Follicular
- Scarlatiniform
- Iris lesions
- The Koebner phenomenon

These all are “clues” in diagnoses
**Inflammation**

Defined: A protective tissue response to injury or destruction of tissues, which serves to destroy, dilute, or wall off both the injurious agent and the injured tissues. The classical signs of acute inflammation are pain (dolor), heat (calor), redness (rubor), swelling (tumor), and loss of function (functio laesa).

- Eyelid Edema
- Chalazion
- Sarcoidosis
- Acne Rosacea

**Allergic / Immunological**

Defined: An abnormal reactions of the immune system that occur in response to an otherwise harmless substance.

- Hypersensitivity (Types I, II, III, IV)
  - I = Atopic
    - Eczema, Urticaria/Hives, Angiodema
  - II = Cytotoxic
    - Graves, Myasthenia Gravis
  - III = Immune
    - SLE, RA, Psoriasis, Erythema Multiforme/Nodosum
  - IV = Delayed
    - Contact Dermatitis, MS, Vitiligo, Acne Rosacea
- Blepharitis

**Infectious**

Defined: Invasion by and multiplication of a pathogenic microorganism in a bodily part or tissue, which may produce subsequent tissue injury and progress to overt disease through a variety of cellular or toxic mechanisms.

- Bacterial
- Viral
- Fungal
- Parasitic

**Bacterial**

Think....

- Hordeolum
- Chalazion
- Preseptal
- Blepharitis
  - Anterior
  - Staphylococcal
  - Seborrheic
  - Mixed
  - Melolbionic seborrhea
  - Angular
- Impetigo
- Folliculitis

**Viral**

- Varicella
- Shingles/Zoster
- Measles: Rubella, Rubeola
- Fifth Disease
- Roseola
- HSV
- Veruccua
- Molluscum Contagiosum

**Fungal**

- Opportunistic
- Hospital Associated
- Commonly Acquired

- Yeasts
  - Candidiasis
  - pityrosporum
- Dermatophytes = Fungus
  - Tinea

**Fungal**

- Microsporum
- Epidermophyton
- Trichophyton
Parasitic
Defined: An organism that grows, feeds, and is sheltered on or in a different organism while contributing nothing to the survival of its host
- Demodex
- Pediculosis
- Tungiasis
- Nematodes
  - Hookworm
  - Loa Loa
- Scabies
- “Bites”
  - Spiders, Insects, Ticks, Fleas, Humans

Trauma
- Blunt/Contusive
- Lacerative
- Burn
  - Chemical
  - Thermal

Tumors
- Types
  - Congenital
  - Benign
  - Malignant
- Detection
  - ABCDE
- Risk Factors

ABCDE’s
- E = Elevation or Evolving (changing)

Congenital
- Hemangioma
- Hamartoma
- Choristoma
  - Ectodermal Dysplasia
- Ichthyosis
  - Xeroderma Pigmentosum

Benign Skin Conditions
(for the most part)
- Melanocytic Nevus
  Many variations based on level of pigment, shape, color, elevation
  - Lentigo
  - Freckle
  - Mole
  - Blue nevus
  - Dermal melanocytosis = Nevus of Ota

- Plaques
  - Xanthelasma
  - Tuberous Sclerosis
  - Kaposi’s Sarcoma
Benign Lumps & Bumps

- Skin Tags
- Seborrheic Keratosis
- Squamous Papilloma
- Dermatofibroma
- Keloids
- Keratoacanthoma
- Epidermal Cyst
- Pylar Cyst
- Sebaceous Hyperplasia
- Syringoma
- Milia
- Eccrine Acrospiroma
- Xanthogranuloma

Skin Cancer

- Actinic Keratosis
- Basal Cell Carcinoma
- Squamous Cell Carcinoma
- Sebaceous Carcinoma
- Melanoma
- Merkel Cell Carcinoma

Metastatic Stats

**BASAL CELL CARCINOMA:**
90% of eyelid malignancy
0.0028-0.1% metastasis

**SQUAMOUS CELL CARCINOMA:**
5% of eyelid malignancy
0.23-2.4% metastasis

**SEBACEOUS ADENOCARCINOMA:**
1-5% of eyelid malignancy
14-25% metastasis

**MELANOMA:** MALIGNANT
less than 1% of eyelid malignancy
50-100% 5-year survival rate

Treatments

- Biopsy – Shave, Punch
- Electrosurgery
- Excision
- Curettage and Electrodesiccation
- Cryosurgery
- Medications
- Micrographic Surgery: Johns, Mohs
- Photodynamic Therapy
- Radiation
- Chemotherapy
- Eyelid Reconstruction
  - Function
  - Cosmesis

Mohs Videos

Graphic (2 min)
http://www.youtube.com/watch?v=1rfXbYRzUZIk

Actual (4 min)
http://www.youtube.com/watch?v=HCWb0zvVWHI

Diagram of Mohs

Life Lumps and Bumps – Think About This in your DDx
Environmental Factors

- Ultraviolet
- Climate
- Geography
- Toxins
  - Contact Dermatitis

Systemic

- Cutaneous: Paget’s, Acanthosis Nigricans, Cowden’s, Sweet’s, Amyloidosis, Erythema Gyrtu Repens
- Blistering: Paraneoplastic Pemphus
- Cardiovascular: LEOPARD Syndrome, Carney Complex, Pseudoxanthoma Elasticum; Ehlers-Danlos Syndrome
- Pulmonary: Sarcoid
- Rheumatic: Psoriatic Arthritis, Lupus Erythematosus, Scleroderma; Reactive Arthritis; Erythem Chronicum Migrans; Dermatomyositis
- Gastrointestinal: Dermatitis Herpetiformis; Acrodermatitis Enteropathica; Necrotic Migratory Erythema; Hep C; Gardner’s; Hemorrhagic Telangectasia; Muir-Torre Syndrome; Peutz-Jeghers Syndrome; Pyoderma Gangreosum
- Renal: Nephrogenic Systemic Fibrosis; Birt-Hogg-Dube’ Syndrome
- Endocrine and Metabolic: Porphyrias; Pseudoporphyria; DM

Nutritional

- Diet
- Hydration
- Supplements
- Tobacco
- Alcohol
- Drugs
- Nutritional Disorders
  - Vit A Deficiency
  - Vit C Deficiency
  - Scurvy

Genetics

- What roles does genes play?

Genodermatoses:
Inherited genetic skin conditions often grouped into three categories:
- chromosomal
- single gene
- polygenetic

Management & Treatment

- History
- Physical Exam
- Assessment
- Diagnosis
- Plan
  - History

- Treat Symptoms
  - Inflammation
  - Puritis
  - Pain
- Treat Findings
  - Infection
  - Edema
  - Immune Response/Reaction
- Surgical Intervention
- Genetic Testing
- EDUCATE
- Refer/Comanage

New FDA Sunscreen Guidelines

- Broad Spectrum = UVA & UVB tested
- Minimum is 15 SPF
- Maximum 50+ SPF
- Less that 15 SPF; warning & only sunburn protection
- No more waterproof, sunblock, sweatproof claims without data
  - Reapplication at either at 40 or 80 minute intervals AND after getting wet/sweating (must prove effective over 2 hours to claim)
Referral

- Primary Care Manager
- Specialists
  - Dermatologists
  - MOHS
  - Plastic Surgeons
  - Ophthalmology
    - Oculoplastics
    - Cornea Specialists

Prevention

*Impact modifying behaviors; Genetics early detection*

- Hygiene
- Diet/Nutrition
- Early Identification
- UV Protection
- Proper attire
- Environmental Awareness

Intent Met?

- Took something new home
- Something was refreshed
- Stimulate awareness and confidence
- More to still learn!!

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