Dermatology 101: Lessons for Eye Care Practitioners

Alan G. Kabat, OD, FAAO
Professor, Southern College of Optometry
Memphis, Tennessee

SPEAKER’S DISCLOSURE
All views in this talk, including off-label (non-US-FDA approved) use of medications, are solely those of the presenter. The presenter has served as consultant to, and/or received research support and/or speaking honoraria within the past 12 months from the following:

- BIO-TISSUE
- BLEPHEX
- OCULOSOFT
- SHIRE
- TEARSCIENCE
- THERMIAESTHETICS

Dermatology in a Nutshell: Categories & Etiologies

- Allergic
- Infectious
  - viral
  - bacterial
  - parasitic
- Inflammatory
- Papulosquamous
- Hyperplastic
- Neoplastic
  - benign
  - pre-malignant
  - malignant

IF YOU SEE SOMETHING, SAY SOMETHING.

The ABC’s of Suspicious Dermatologic Lesions

A = Asymmetry
B = Borders
B = bleeding
C = Color
C = circulation
D = Diameter
E = Evolving...
Squamous papilloma

- AKA: acrochordon, "skin tag" or skin polyp
- A small, benign, usually pedunculated (stalked) tissue growth, varying in size from ~2-5 mm
  - may be skin colored or hyperpigmented
  - round to oval; may be multilobular
  - non-infectious (unlike viral papillomas)
- More commonly noted in obese individuals; may be associated with pregnancy, diabetes
- Most frequently noted in skin folds—neck, axillae, eyelid canthi or adnexa
- Usually asymptomatic; painful only if inflamed or irritated

Squamous papilloma: Management

- Lesions are treated only if they display bleeding or irritation, pose a significant cosmetic concern or interfere with function (e.g. lid ptosis)
- Treatment options include:
  - Cryotherapy with liquid nitrogen
  - Surgical removal: may be removed via
    - Electrodesiccation and curettage
    - Surgical scissors or shavebox
  - Chemical cautery (trichloroacetic acid)
Seborrheic keratoses

- Most common benign tumor of the elderly
- Proliferation of epidermal cells
- Frequently occur in sunlight-exposed areas
- Presentation:
  - Well-circumscribed, rough-surfaced round or oval lesions with uneven pigmentation
  - Flat or slightly elevated in early stages
  - Later becomes dome shaped and more wart-like with a "stuck-on" quality
  - "barnacles of aging"
  - Ocular: typically affect the upper lids & adnexa

Seborrheic keratoses: Management

- Medical therapy:
  - Superficial lesions can be treated with trichloracetic acid
  - Cryotherapy carries risk of pigmentary changes & scarring
- Surgical removal is the treatment of choice; options include:
  - Shave biopsy (smaller lesions)
  - Light curettage, electrodesiccation, or a combination of the two (larger lesions)
  - Laser & dermabrasion surgery have also been used with some success

Actinic keratoses

- AKA: solar keratosis
- Most common sun-related growth
- Usually occur in fair-skinned individuals (who burn easily and tan poorly) with occupations or hobbies that expose them to excessive UV exposure
- May be a precursor of squamous cell carcinoma
- Presentation:
  - chiefly found on the sun-exposed areas of the face, ears, forearms, hands, back, chest, or shoulders
  - multiple discrete, slightly elevated, scaly reddish-brown lesions may present with central ulceration
  - usually 3-10 mm in diameter and gradually enlarge
Actinic keratoses: Management

- Patient education regarding sun exposure
- Medical therapy (FDA approved):
  - Fluorouracil 5% (Efudex®)
  - Imiquimod 5% (Aldara®)
  - Diclofenac 1% gel (Voltaren®)
  - PDT with δ-aminolevulinic acid
- Other options include chemical peels or dermabrasion
- Residual lesions treated surgically

5FU therapy

- Facial lesions: BID for 3-4 weeks
- For other body sites: BID for 6-8 weeks

Basal cell carcinoma

- Most common malignant skin tumor
- Predominant in elderly, fair-skinned individuals
- Chronic sun exposure = significant risk factor
- Slowly progressive & rarely metastatic
- Presentation:
  - translucent, raised nodule with “pearly” margins; over time, telangiectatic vessels may develop
  - ulceration may occur at the lesion’s center
  - Morpheaform variety lies under surface – very difficult to assess

Photo courtesy of Dr. Mike Dufek (Miami, FL)
PREVALENCE OF ANATOMIC LOCATION: OCULAR BCC

Sclerosing / Morpheaform BCC
- Accounts for <10% of all basal cell carcinomas
- Presents as a firm, pale, waxy yellow plaque with indistinct borders
- More aggressive and invasive despite being less obvious
- More likely to show recurrence

Basal cell carcinoma: Management
- Biopsy is CRITICAL!
- Treatment of choice is surgical:
  - Wide margin excision with frozen border section
  - Mohs micrographic surgery
  - Exenteration only in extreme cases
- Cryotherapy, radiation, or chemotherapy for those unable or unwilling to undergo surgery
  - much lower rates of success
  - Aldara® (imiquimod) has shown promise with smaller, non-aggressive BCC

BCC may also be pigmented in some cases.
Squamous cell carcinoma

- Less common than basal cell carcinoma (5-10%)
- Predominant in elderly, fair-skinned, sun-exposed individuals
- May convert from benign lesions (e.g., actinic keratosis)
- Slightly more aggressive than BCC; low rate of metastasis
- Characteristic appearance:
  - a roughened, scaly patch, mildly elevated and red
  - may have crusted and/or bloody margins
  - patients describe the lesion as “a scab that won’t heal”

Management

- Management for squamous cell carcinoma is identical to that for BCC.
  - Excisional biopsy
  - Mohs surgical technique
- Realize that SCC is somewhat more aggressive than BCC, with greater propensity for:
  - Perineural invasion
  - Metastasis
  - Recurrence
Malignant Melanoma

- 7th most common cancer in the U.S.
- Significant tendency toward growth & metastasis...
  - Melanoma is responsible for 75% of skin cancer deaths in the United States.
- Primary risk factors:
  1. Changing nevus
  2. Increased age (> 60 years)
  3. Large numbers of moles (common acquired and atypical) or history of multiple, atypical moles
  4. Fair complexion
  5. Family history of melanoma
  6. Geographic location in sunny climates

Malignant melanoma: Management

- Any suspected melanomas should be IMMEDIATELY referred for biopsy...
  - Exceedingly high incidence of metastasis and rapid rate of growth
  - Most potentially life-threatening of all skin cancers
- Management for melanoma is identical to that for BCC.
  - Excisional biopsy
  - Mohs surgical technique
INFLAMMATORY & PAPULOSQUAMOUS DISORDERS

Rosacea
- Idiopathic disorder of the sebaceous glands
  - affects forehead, cheeks, chin, nose, and eyelids
  - more common in older patients, women, those with fair skin (i.e. Northern European descent)
- Presentation:
  - General: erythema ("skin flushing"), telangiectasia, coarseness of skin (may result in rhinophyma or "WC Fields nose"), and inflammatory papulopustular eruptions resembling acne
  - Ocular: chronic, unrelenting blepharitis, thickened lid margins and meibomian stasis; may see secondary conjunctivitis, hordeola/chalazia, canalculus
Rosacea: Management

• Recognize and avoid triggers!
  • Dietary:
    – Hot drinks (coffee, tea, soup)
    – Alcohol
    – Spicy foods
  • Environmental:
    – Excessive UV or heat
    – Smoking
    – Stress

• Medical therapy:
  – Tetracycline (250-500 mg daily-tid), doxycycline (50-100 mg daily-bid) or minocycline (100 mg daily) X 2-4 mos.
  – Remember drug interactions and side effects
  – Topical metronidazole as adjuvant to systemic therapy
  – Topical and systemic corticosteroids are contraindicated
  – Courses of isotretinoin (Accutane) 0.5-1 mg/kg/d for 4 months may be helpful for recalcitrant disease

• Surgical Care: permanent telangiectasias and rhinophyma may be treated by electrocautery, laser, or dermabrasion

Ocular Rosacea: Management

• Lid hygiene – ??
• Copious lubrication (e.g. Systane™ Balance)
• Topical medications:
  – Corticosteroids – ??
  – Restasis® (cyclosporine 0.05%)**
• Remember – topical therapy is palliative; systemic treatment is warranted
• Surgical treatment for severe lid and/or corneal complications

Seborrhea / Seborrheic dermatitis

• A papulosquamous disorder of the sebum-rich areas of the scalp, face, and trunk
  – may be linked to Pityrosporum ovale (a yeast)
  – induced/aggravated by humidity, trauma, seasonal changes, emotional stress
• Intermittent, active phases with burning, scaling & itching, alternating with inactive periods
  – increased activity in winter and early spring
• Manifestations range from mild dandruff to exfoliative erythroderma; occurs as “cradle cap” in infants
Seborrheic dermatitis:

Management

- Dandruff often responds to frequent shampooing
  - Shampoos with salicylic acid, tar, selenium sulfide & zinc are beneficial; ketoconazole shampoos may help by reducing P. ovale scalp reservoirs
  - Shampoos may be used on body lesions or in beards but not the facial areas
- Medical therapy:
  - Topical 2% ketoconazole or naftifine (antifungals)
  - Alternatives include sulfur or sulfonamide combinations or propylene glycol
  - Systemic ketoconazole if severe or unresponsive
  - Topical steroids are discouraged except for short-term use, as they may hasten recurrences & foster dependence.

Seborrheic blepharitis:

Management

- Lid hygiene is paramount!
  - Lid scrubs are appropriate
  - Warm compresses and lubrication therapy may help further alleviate symptoms
- Other agents:
  - Dandruff shampoos, etc. for scalp and body should NOT be used in the eyes, but should be advised for concurrent areas of seborrhea
  - Ketoconazole for blepharitis is controversial...

Psoriasis

- Hyperproliferation of epidermal keratinocytes
  - Unknown etiology; activated T-cells identified
- Exacerbations triggered by trauma, stress, alcohol, medications, and infection
- Presentation:
  - Scaly, "silver" plaques with underlying erythema
  - Obvious on scalp, joints (elbows, wrists), extremities
  - Psoriatic arthritis: stiffness & pain in the distal joints
  - Ocular findings can include blepharitis, conjunctivitis, nodular episcleritis and even uveitis
- Symptoms: itching, generalized discomfort; painful ulcerations can result from scratching
Psoriasis: Management

- Non-invasive therapy includes daily sun exposure, sea bathing, topical moisturizers, and relaxation.

- Medical therapy:
  - Topical coal tar or salicylic acid compounds
  - Topical anthralin (Anthrafin®, Psoriatec®)
  - Topical calcipotriene (Dovonex®, a vitamin D analog)
  - Topical corticosteroids (e.g. Aristocort®, Diprosone®, Diprolene®)
  - Systemic corticosteroids are generally ineffective and may exacerbate the disease
  - Ultraviolet light treatment (PUVA)
  - In severe cases retinoids (e.g. Tazorac®), methotrexate, cyclosporine, and hydroxyurea may be used

Therapies for Plaque Psoriasis

- Four FDA-approved biologics for psoriasis:
  - Alefacept (Amevive)
  - Infliximab (Remicade)
  - Adalimumab (Humira)
  - Etanercept (Enbrel)
  - Efalizumab (Raptiva) was discontinued in 2009 due to an association with progressive multifocal leukoencephalopathy (PML), a fatal brain infection.

INFECTIOUS DISORDERS

Viral Papilloma / Verruca

- AKA: “wart”
- Benign proliferations of skin and mucosa caused by human papilloma virus (HPV)
  - transmitted by direct or indirect contact
  - can affect any area on the skin and mucous membranes; often seen on hands, feet
  - may be variably pigmented or flesh-colored with keratinized surface; “black dots” are pathognomonic
- Presentation: two main types
  - Verruca plana – round, flat-topped and slightly elevated with a granular surface appearance
  - Verruca digitata – “cauliflower” surface appearance on stalk of varying length; may have numerous finger-like projections
Verruca: Management

- Treatment is difficult, though verruca often resolve spontaneously (~65% over 2 years)
- Options include:
  - Benign neglect
  - Topical salicylic acid preparations (Compound-W®)
  - Vesicants (cantharidin®, podophyllin)
  - Other agents include imiquimod (Aldara®), cidofovir, tretinoin, and 5-fluorouracil.
  - Surgical removal:
    - Chemocautery with trichloroacetic acid
    - Cryoablation (liquid nitrogen) or photoablation
    - Electrodesication and curettage
    - Surgical paring / excision


- Another approach...?

Molluscum contagiosum:

- Associated with a large DNA poxvirus
- More commonly seen in children
  - In adults, disease may be sexually transmitted
- Presentation:
  - Multiple raised papules or pustules with umbilicated centers; filled with a cheese-like material
  - Typically affects the trunk, hands, face, & lid margins
  - When sexually transmitted, affects genitalia, thighs, buttocks and peri-anal regions
- Usually asymptomatic; may cause itching or tenderness in some individuals
  - Follicular response seen in extreme cases

Management

- Self-limited, typically resolving spontaneously over 3-12 months; however, to prevent autoinoculation or transmission to close contacts, therapy may be beneficial.
- Medical therapy (all are off-label):
  - Topical vesicants (e.g. cantharidin, podophyllin)
  - Topical retinoids (e.g. tretinoin [Retin-A])
  - Topical imiquimod
  - Systemic antibiotic therapy (e.g. griseofulvin)
- Surgical management:
  - Chemical cautery via trichloracetic acid, tincture of iodine, or silver nitrate
  - Cryotherapy with liquid nitrogen

ALLERGIC DISORDERS
Atopy

- Definition: a hereditary predisposition to allergy or hypersensitivity
- Affects ~3-12% of the population
- Manifestations:
  - dermatitis, urticaria
  - asthma, rhinoconjunctivitis, etc.
- Caused by inappropriate cellular immune response; **Type I** (a.k.a. IMMEDIATE) hypersensitivity reaction

Atopic dermatitis

- AKA: atopic eczema
- Focal manifestation of a systemic condition
- Presentation:
  - Erythema, scaling, pigmented changes
  - Typically affects the "skin crease areas" - antecubital & popliteal areas, corners of the mouth, neck, behind the ears, outer canthi, or eyelids
  - Ocular: blepharitis, atopic keratoconjunctivitis (AKC), papillary conjunctival reaction, Trantas dots (limbal deposits of eosinophils), atopic cataracts, and keratoconus.
- Symptoms: pruritis (itching) & discomfort
  - AKC often presents with ocular pain and lacrimation

Atopic dermatitis: Management

- Stress control!
- Avoidance of allergens (dust mites, peanuts, egg, milk, fish, soy), and irritants (chemicals, harsh soaps, high humidity, wool, and acrylic)
- Medical therapy:
  - Topical steroids are the mainstay of treatment
    - Typically used QID to start
      - Aristocort® (triamcinolone acetonide 0.1%)
      - Eisecon® (mometasone furoate 0.1%)
    - Oral antihistamines may provide symptomatic relief
  - Elidel® (pimecrolimus) & Protopic® (tacrolimus)
    - Typically used BID to start
  - Topical immunomodulatory agents
  - Both carry FDA "black box" warning (mid-2005)…
Contact dermatitis

- Results from direct skin exposure to allergens or other irritants, e.g.
  - acids, alkalis, resins, or other chemicals; dyes, plants, preservatives, cosmetics, metals; excessive moisture
- **Type IV** (a.k.a. DELAYED) hypersensitivity
- Presentation:
  - Erythema, edema, exudative vesicles; may result in crusting, eczema, or lichenification if not treated
  - Ocular: eyelid edema & induration, conjunctival edema & hyperemia, papillary response
- Symptoms: profound itching, lacrimation

Contact dermatitis: Management

- Remove the offending agent!
  - Avoid harsh soaps and detergents, irritating fabrics and chronic scratching
- Medical treatment:
  - conservative use of **topical steroids**
  - wet saline compresses to exudative lesions
  - oral antihistamines for control of itching
  - oral steroids only if control of symptoms with topical treatment is not sufficient

Questions?
Email me at: akabat@sco.edu