

Anterior Segment Grand Rounds

(2 Hours)

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Abstract

This course covers a variety of common and interesting anterior segment cases in a grand rounds format using audience polling and interaction. Proper clinical evaluation, differential diagnoses, and appropriate treatment and management options will be discussed.

Learning Objectives

- 1) To educate the primary care optometrist about common and interesting anterior segment cases involving the eyelids, conjunctiva, cornea, sclera, and lens.
- 2) To be able to develop appropriate differentials for various anterior segment ocular diseases.
- 3) To establish appropriate treatment plans for patients with anterior segment ocular diseases.
- 4) To educate the primary care optometrist on which laboratory or supplemental testing may be helpful in managing the anterior segment condition.
- 5) To effectively educate patients regarding the course and prognosis of the presenting conditions.
- 6) To identify clinical findings that warrant specialist referral or multidisciplinary management of anterior segment disease to optimize patient outcomes.

Outline

- I. Lumps and Bumps (lid lesions) – “Cut it or keep it?”
 - a. Benign Lesions
 - i. Squamous papilloma
 1. Most common benign neoplasm of the eyelid
 2. Epidermal hyperplasia
 3. Remove for cosmetic reasons or if visual disturbance with excisional biopsy

- ii. Verrucae
 1. Human papilloma virus (50+ types)
 2. Filiform “wart” - most common on eyelid
 3. Can cause mild follicular conjunctivitis if on eyelid margin
- iii. Molluscum contagiosum
 1. Pox virus
 2. Umbilicated papules, often with red base
 3. Immunocompromised patients
 4. May be associated with follicular conjunctivitis, SPK, hyperemia
- iv. Sebaceous cyst
 1. Retained sebum gives yellow color
- v. Sudoriferous cyst (apocrine hidrocystoma)
 1. Sweat gland cyst
 2. Serous contents – can be transilluminated
- vi. Pyogenic granuloma
 1. Often arises on mucous membranes after trauma or surgery
 2. Pedunculated or sessile shaped
 3. Rapid growth
 4. No malignant potential
 5. Responds well to topical steroids, surgical excision
 6. New research: topical timolol for ocular pyogenic granulomas
- b. Premalignant Lesions
 - i. Actinic keratosis
 1. Most common premalignant skin lesion
 2. Aka solar keratosis
 3. Face, scalp, hands most common – “felt before seen”
 4. Development of SCC in untreated lesions as high as 20%
 - ii. Lentigo maligna
 1. Sun induced, dark patch with irregular pigment & borders
 2. 30-50% become a malignant melanoma
- c. Malignant Lesions
 - i. Basal cell carcinoma
 1. Most common malignant lesion of eyelids (80-90%)
 2. Areas of chronic sun exposure
 3. Metastasis unlikely
 4. Local invasion common
 5. Management: biopsy and excision (Mohs’ procedure)
 - ii. Squamous cell carcinoma

1. Erythematous, indurated hyperkeratotic plaque or nodule with irregular margins
 - a. No typical appearance
 2. Usually in lighter-skinned, older individuals
 3. Higher potential than Basal Cell for metastatic spread (5-10%)
 4. Management: biopsy and excision (Mohs procedure)
 - iii. Malignant melanoma
 1. Low incidence but high mortality
 2. Can grow radially and vertically
 3. Most common – superficial spreading melanoma
 4. Management: biopsy and excision/reconstruction; typing and staging of tumor; frequent follow up
 - iv. Merkel cell carcinoma
 1. Often begins as a painless firm bump that can be red or purple colored
- II. Eyelids and Eyelashes
 - a. Anterior lid disease
 - i. Bacterial (*staphylococcal aureus*)
 - ii. Seborrheic (dandruff)
 - iii. Mixed
 - iv. Demodex
 1. Strong association with ocular rosacea
 2. Slit lamp tips and tricks to diagnose demodex
 - a. have patients look down, observe for sleeve-like cuffing or cylindrical collarettes at base of lashes
 3. Clinical studies involving lotilaner 0.25%
 - b. Angular blepharitis (most often due to *Staph* or *Moraxella*)
 - c. Posterior lid disease
 - i. Meibomian Gland Dysfunction
 - d. Treatment and management options for eyelid margin disease
 - i. Eyelid hygiene
 - ii. In-office eyelid hygiene procedures
 - iii. Photobiomodulation therapy for inflammatory eyelid disease
 - iv. Therapeutic options
 - v. Pipeline therapies

III. Eyelid Infections

- a. Hordeola (internal – infection of Meibomian Gland vs. external – infection of Gland of Zeis or Moll) vs. Preseptal vs. Orbital cellulitis
 - i. Clinical presentation
 - ii. Red flags of orbital cellulitis
 - iii. Treatment/management options
 1. External hordeolum
 - a. Warm compresses
 - b. Lash epilation? drainage
 - c. Topical antibiotics - *Staph aureus*
 2. Internal hordeolum, preseptal cellulitis
 - a. Oral antibiotics - review
 - i. Consider gm + and gm – coverage, especially for preseptal
 - b. Close follow up for preseptal → risk of orbital
 3. Orbital cellulitis
 - a. Referral for IV antibiotics
- b. Dacryocystitis
 - i. Infection of the lacrimal sac
 - ii. Common causes: *staph aureus*, *staph epidermidis*, *strep*, *pseudomonas*
 - iii. Treatment/management options
 1. Dilation and irrigation is contraindicated
 2. Hot compresses, oral antibiotic, topical antibiotic (if drainage)
 3. Daily follow up

Clinical Finding	Preseptal	Orbital
Visual Acuity	Normal	Reduced
Proptosis	Absent	Marked
Chemosis	Rare/mild	Common
Hyperemia	Rare/mild	Marked
Pupils	Normal	Possible RAPD
Motility	Normal	Restricted
Pain on EOMs	Absent	Present
IOP	Normal	May be ↑
Temperature	Normal/mildly ↑	102-104°
Headache	Absent/mild	Common
Sick (N/V)	Absent	Common

IV. Ptosis

- a. Case presentation – Myotonic dystrophy
 - i. Clinical features: ptosis, polychromatic cataract, lagophthalmos, hypotony, macular pigment disruption
 - ii. Evaluation of the patient with Ptosis
 1. Rule out pseudoptosis – i.e., dermatochalasis, reduced vertical fissure height (lack of volume in the eye), contralateral lid retraction, ipsilateral hypotropia
 2. Ptosis measurements
 - a. MRD: normal is 4-4.5mm
 - b. Levator function/Upper lid excursion (normal (≥12mm)-aponeurotic ptosis; poor (≤5mm)-congenital ptosis
 - c. Upper lid crease – more likely congenital ptosis if absent

- d. Interpalpebral fissure: normal in females 8-12mm; normal in males 7-10mm
 - i. causes for error/"false" normal readings
 - iii. Differential diagnosis of acquired ptosis
 - 1. Neurogenic
 - 2. Aponeurotic
 - 3. Mechanical
 - 4. Traumatic
 - 5. Myogenic
- V. Superior Limbic Keratoconjunctivitis
 - a. Case presentation
 - b. Superior bulbar conjunctival laxity, papillary hypertrophy of upper lid, may have superior keratitis and filamentary keratitis associated with condition
 - c. Cyclical
 - d. Etiologies:
 - i. Strong link to thyroid disease (consider thyroid labs including TSI, TRAb, TPOAb)
 - ii. Dry eye
 - iii. Sjogren's syndrome
 - iv. Rheumatoid arthritis
- VI. Anterior Scleritis
 - a. Case presentation
 - b. Types: diffuse, nodular, necrotizing (with or without inflammation)
 - c. ~50% have underlying systemic association - lab testing is important
 - i. Most common associated systemic disorder – rheumatoid arthritis
 - d. Differential diagnosis
 - e. Treatment/management – unlike episcleritis, typically does not respond well to topical steroids or NSAIDs as sole treatment
 - i. Oral NSAIDs → Oral steroids → Immunosuppressive agents
 - ii. Reduced pain is a good indicator of response to treatment despite persistent hyperemia
- VII. Cornea
 - a. Recurrent corneal erosion
 - i. Etiologies, including trauma, corneal dystrophies
 - ii. Management options
 - 1. Lubrication, punctal plugs, prophylactic antibiotic
 - 2. Debridement
 - 3. Bandage contact lens

4. Amniotic membranes
 5. MMP9 inhibition
 6. Anterior stromal puncture
 7. Superficial keratectomy
- b. Review of corneal dystrophies (those marked with ** do not typically result in RCE)
- i. Epithelial/Subepithelial
 1. Epithelial Basement Membrane Dystrophy
 - a. Most common corneal dystrophy
 - b. 10%+ will have RCE
 2. Meesmann Corneal Dystrophy
 - ii. Bowman's Layer
 1. Reis-Bucklers' Corneal Dystrophy
 2. Thiel-Behnke Corneal Dystrophy
 - iii. Stromal
 1. Lattice Corneal Dystrophy
 - a. Most common stromal dystrophy
 2. Granular Corneal Dystrophy
 3. Macular Corneal Dystrophy
 - a. Most severe stromal dystrophy
 4. Schnyder Corneal Dystrophy**
 - a. May be associated with hyperlipidemia
 - iv. Descemet Membrane/Endothelial
 1. Fuchs Endothelial Corneal Dystrophy
 2. Posterior Polymorphous Corneal Dystrophy**
 - a. Risk of glaucoma