ATOPIC DERMATITIS: MORE THAN SKIN DEEP

OCULAR MANIFESTATIONS - SEEING BEYOND THE SKIN

Grace Sun, MD
Dermatology Medical Group of Oxnard and Camarillo
Ventura County Medical Center
Blepharitis
Conjunctivitis
Keratitis
Tear dysfunction
Herpes simplex virus infection
Keratoconus
Cataracts
Steroid-induced glaucoma
Basic Eye Anatomy
Tear Production

Structures Involved in Tear Production:

- Lipid Layer (Meibomian glands)
- Aqueous Layer (Lacrimal glands)
- Mucin Layer (Epithelial cells)
- Lacrimal gland
- Meibomian glands
- Goblet cells ( Conjunctiva )
Atopic keratoconjunctivitis

• 20%-43% of patient with atopic dermatitis have ocular involvement
• Usually starts in the teens and continues into the 5th decade of life.
• Increased IL-4, IL-5, IL-8, IL-33, in the tears
• Increased eosinophil activity in the conjunctiva
The eyelids - Blepharitis

- Dermatitis, edema, pruritus and foreign body sensation
- Periorbital hyperpigmentation and lichenification – Dennie-Morgan lines
- May be associated with *S. aureus* and seborrheic dermatitis
- Meibomian glands become obstructed causing tear dysfunction, excessive tearing leads to maceration of the eyelid skin
Blepharitis Management

- Eyelid hygiene regimen – warm compresses, eyelid scrubs BID
- Ophthalmic antibiotic ointments (bacitracin, azithromycin, erythromycin)
- Aggressive lubrication with artificial tears and ointment
- Calcineurin inhibitors - tacrolimus 0.03% or 0.1% ointment
- PDE 4 inhibitor - crisaborole 2% ointment
- Oral doxycycline 20 mg BID for 1-2 months
  (for children azithromycin 10mg/kg max 250 mg, 3 days a week for 4 weeks)
Conjunctivitis

- Bilateral painful, itchy conjunctivae with hyperemia and watery clear discharge
- Artificial tears
- Topical cromone (mast cell stabilizers) and antihistamine eyedrops
- Aggressive treatment with topical corticosteroid eyedrops or systemic corticosteroids for exacerbations
The Cornea - Keratitis

• Pain, punctate or frank corneal erosions and ulcers
• Neovascularization and corneal scarring can lead to decreased visual acuity and blindness
• Refer to a cornea specialist
Tear Dysfunction

- Decreased tear film break-up time
- Dry, irritated eyes
- Goblet cell loss
- Meibomian gland dysfunction

- Liberal use of artificial tears, ophthalmic lubrication ointment, cyclosporine A 0.05% emulsion BID
Herpes Simplex Virus Infection

• Red, painful eye
• Blisters on the eyelid margin
• May affect the cornea
• Oral acyclovir 400 mg 5 times a day
• Oral valacyclovir 1 gm 3 times a day
• Referral to an ophthalmologist for evaluation of the cornea
Keratoconus

• Associated with habitual eye rubbing
• Cornea thins inferiorly and bulges
• Blurry vision
• Spectacles prescription changing quickly
• Will need rigid gas permeable contact lenses
• Cornea transplant
• Cornea crosslinking
• Refer to cornea specialist
Cataracts

- AKC-associated cataracts are uniquely anterior subcapsular, with rapid progression to complete opacification
- Steroid-induced cataracts are posterior subcapsular
- Treatment – cataract surgery
Steroid-induced Glaucoma

- Refer to an ophthalmologist
- Increased intraocular pressure
- Stop topical and oral steroids
- Use steroid-sparing therapies, such as cromones and calcineurin inhibitors, PDE4 inhibitor
Atopic keratoconjunctivitis Summary

- Treat atopic dermatitis of the eyelids
- Caution against eye rubbing
- Refer to an ophthalmologist for screening and management of
  - Cataracts
  - Keratoconus
  - Glaucoma
  - Keratoconjunctivitis
  - Dry Eye