What’s New in Medicine

Ophthalmology

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Disclosure:
Dr. Smith has no significant financial interest in any of the products or manufacturers mentioned.
Objectives

• Emphasis on what and when to refer
• Describe preventative and treatment measures for common eye problems
• Discuss inflammatory conditions of the eye: conjunctivitis, iritis, keratitis
• Discuss an approach to the patient who reports decreased vision, floaters, and altered visual perception
Eye Exams in the Office

- **Visual Acuity**
  - Near card
  - Plus 3 reading glasses
- **Circle on the Wall**
- **Occluder with Pin Hole**
  - Monocular vs. binocular diplopia
  - Ghost images
- **Flourescein strips**
- **Pupil exams**
- **Confrontational visual fields**
- **Red cap desaturation**
  - Optic nerve dysfunction
- **Desmarre Lid Retractor**
- **Litmus Paper to check PH**
  - Chemical burns
Kids

• “Make friends” before
  Checking corneal reflexes
  2 second cross-cover test

• Toys
  1 toy, 1 look
  Light toys, singing toys invaluable

• Amblyopia
  Resisting occlusion of one eye
  Gaze preference
  Maintaining fixation through a blink

• Strabismus
  Patching vs. Atropine drops
Pseudostrabismus

- Refer when unsure
- Photographs may be helpful or misleading

Pseudostrabismus. Although the eyes appear misaligned in this photograph, the light reflection is symmetrical in both eyes.
Eye Anatomy
CREC Triage - STAT

Same day appointment

- Acute onset of severe eye pain or light sensitivity
- Sudden onset: loss of vision – complete or partial, double vision, flashes, floaters, significant change in vision, seeing red/pink in visual field
- Sudden onset: veil/curtain obscuring vision or transient vision loss
- Traumatic injuries, chemical burns
- Postoperative: pain, significant decreases or change in vision, increased redness
- ER referral from hospital, MD, OD
- Monocular patient with any type of problem
CREC Triage - Urgent

*Needs to be seen 1-2 days*

- Onset of double vision over past several days
- Subacute vision loss over days to weeks
- Droopy eyelids
- “Pink eye” or eye infections
- Flashes / floaters that occurred 1-3 weeks ago
- Change in pupil size
- Mild / moderate discomfort and acute foreign body sensation
- Blunt trauma, no vision loss
Transient Vision Loss

• 14 year old girl with 2 year history of 6 over 10 hemicranial headaches 3 times weekly with photophobia. Every 2 months she gets 8 over 10 headache with dilated right pupil. Father has migraines.

• 18 year old girl who is doing gymnastics. Acute onset of dizziness, confusion (45 minutes), 5 over 10 headache. Her left arm was numb for about an hour. Mother has migraines.

• 78 year old man with an episode of severe blurred vision in the right eye that lasted 20 minutes. It was a little bit dark. ROS always tired. Atrial fibrillation. Some headaches. SED rate 45 CRP1.

• 79 year old woman who sees Ferris wheels at night and occasionally during the day. Persists when she closes her eyes. ROS negative.

• 68 year old man who has had 5 minute episodes of blurred vision 2-3 times per day for the last few weeks. No headache. Blood pressure normal. History of migraines.
CREC Triage – Less Urgent

*Needs to be seen within 1 week*

- Nearly all the STAT and Urgent symptoms that occurred more than three weeks ago, but within a reasonable amount of time (2 months ago would not be reasonable)
- Eyelid twitching
- Intermittent, mild irritation
- Itching / tearing
Nasolacrimal Duct Obstruction

- Refer immediately newborn dacryocoele
- No probing until at least 6-7 months of age
- Success rate 80% to 90% up to one year of age
- Probing between seven to twelve months dependent upon severity of symptoms
- Always refer by one year of age
- Do not overuse topical antibiotics
- Simple probing, balloon dilation, silicon tubes
• 68 day old boy with a 2 day history of a bump and swollen lids, history of skull fracture at 1 month of age

• 8 month old with tearing, discharge
Immediate referrals

- Two month old with recent history of tearing and photophobia
- Three month old with the recent onset of nystagmus
- Four month old who “doesn’t see”
Tearing and Photophobia

<table>
<thead>
<tr>
<th>Congenital glaucoma</th>
<th>Asymmetric presentation</th>
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<tr>
<td>Ocular melanocytosis</td>
<td>Epiblepharon</td>
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Nystagmus

Onset 6 weeks to 3 months of age

- Congenital motor nystagmus
- Optic nerve hypoplasia
- Retinal or optic nerve coloboma
- Albinism
- Leber’s Congenital Amaurosis
- Anterior visual pathway abnormality
- Posterior visual pathway abnormality usually no nystagmus
Optic Nerve Hypoplasia
Treatment Protocol of Chalazions

• Treat prior to referral
• Hot compresses 3-5 minutes with digital massage 10-15 seconds several times daily
• Antibiotic or antibiotic/steroid ointments 1-2 weeks
  Erythromycin ointment – cheap
  Tobramycin/dexamethasone – expensive?
  Neomycin/polymyxin/dexamethasone – cheap
  Sulfacetamide and prednisolone ointment
• Consider oral antibiotics if severe lid edema
• Occasionally use oral antibiotics for 1 - 2 months if frequent recurrences
Posterior chalazion

Anterior chalazion

Pyogenic granuloma
Blepharitis

• Most common cause of recurrent conjunctivitis
• Always makes dry eye symptoms worse
• Symptoms usually worse in mornings
• 3 forms
  - Crustly lids only
  - Red eyes
  - Very painful, sterile, peripheral corneal ulcers
• Treatment
  - Hot compresses/massage
  - Antibiotic or antibiotic/steroid ointment
  - Antibiotic/steroid drops (refer)
Blepharitis
Blepharitis and Dry Eyes
Prescribing artificial tears

• Low viscosity, shorter duration
• High viscosity, may blur vision
• Preservative free if using more than 4-5 times daily
• Even preservative free tears may burn and cause corneal toxicity
Prescribing Antibiotic Drops

- Only prescribe 1 drop at each dose
- Always have the patient close eyes for 1 minute
- May be helpful to put the bottle in the refrigerator
- If drop burns more than 30-60 seconds, stop it
- Almost all antibiotic and glaucoma drops have benzalkonium chloride as a preservative
- Treat conjunctivitis for 5 days
- Do not treat the other eye if normal
- Resist giving a second antibiotic
Conjunctival / Corneal FBs
Conjunctival Lesions
Conjunctival Lesions
Conjunctival / Corneal Lesions
HSV Conjunctivitis/Keratitis

Refer immediately if the eye is red or lesions on the eyelid margins

- May not treat mild conjunctivitis

- Herpes dendritic keratitis treatment
  - Acyclovir or Valacyclovir orally
  - Trifluoridine drops – more corneal toxic
  - Ganciclovir drops – less corneal toxic, expensive

- Herpes Stromal Keratitis
  - Steroids

Correct diagnosis?
Abrasión vs. Infiltrar
Marginal Corneal Ulcers

- Usually caused by blepharitis
- “Sterile ulcers”
- Requires antibiotic steroid drops/close observation

Action: Refer immediately
Corneal Opacities
Adenoviral conjunctivitis
Molluscum and HSV
Episcleritis vs. Scleritis
Anterior Iritis

- Symptoms: red, painful eye
- No laboratory work up if review of systems is negative
Posterior Uveitis

- Symptoms: floaters, blurred vision
- Usually not painful
- Usually laboratory work up with first episode
- Labs: CBC, ESR, CRP, HLA-B 27, ACE, ANA, RF, RPR, chest Xray, toxoplasmosis, serology
Glaucoma
Optic nerves
Optic nerves
Disc Edema / Optic Nerve Atrophy
Monofocal, Multifocal, Toric IOLs
Anatomy of the Apodized Diffractive IOL

Step heights decrease peripherally from 1.3 – 0.2 microns

Central 3.6 mm diffractive structure

A +4.0 add at lens plane equaling +3.2 at spectacle plane
Dysphotopsias

- Glare, halos, flickering
- Monofocal IOLs 1% - 2%
- Multifocal IOLs 5% - 6%
- Careful patient selection
Anti-VEGF Drugs

• Drugs

Bevacizumab (Avastin)
Not FDA approved for wet AMD
Most used, $50 per injection

Ranibizumab (Lucentis)
FDA approved for AMD & Diabetic Retinopathy
$2,000 per injection

Afliibercept (Eylea)
May last an additional month longer
$1,800 per injection

• AREDS 2 vitamins

Lutein and Zeaxanthin
Anti-VEGF Drugs
BRVO, CRVO, BDR, PDR