The Primary Care Eye Exam:
Evaluation of Ophthalmic Complaints

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Review of Ocular Anatomy

- Tear Film
- Cornea
- Sclera
- Conjunctiva
- Anterior Chamber
  - Full of Aqueous Humor
- Iris
- Pupil
EOMs
Review of Ocular Anatomy

• Crystalline Lens
  – Transparent Body of proteins and water enclosed in an elastic capsule
  – Flexing causes focusing (accommodation)
Review of Ocular Anatomy

• Posterior Segment
  – Vitreous Humor
  – Retina
  – Choroid
  – Optic Nerve
    • 1,000,000 fibers
Posterior Pole
Whew! That was a lot!
What Tools Do You Have?

- Visual Acuity Chart or Card
- Fingers and hands
- Fluorescein and saline
- Pen Light or Transilluminator
- Direct Ophthalmoscope
- Possible Slit Lamp
- Most will have little to no magnification
- NOT FAIR!
Pupil Exam

• Critical in evaluating new onset vision changes or headaches

• Can find more ominous things as well
  – Anneurysm or Neoplasm

• Take your time! Linger!

• Test in a dark room and in normal room illumination

• The pupil was invented at Iowa
Pupil Exam

• It’s NOT the Swinger’s Club!
Pupil Exam

• Consider the Findings as they relate to:
  – Chief Complaint
  – Other Evidence
  – Other known systemic diagnoses

• If not normal, refer to Eye Specialist

• Optometrist or Ophthalmologist?
Double Vision

• How long?
• Monocular vs Binocular
• Gross Exam and Motility
• Worse or Better in various positions?
• Cover Testing
• Evaluate lid and pupil
Restrictions of Gaze
Cranial Nerve III Palsy
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Cranial Nerve III Palsy

• Loss of SR, MR, IR and IO

• Cranial Nerves IV and VI act unopposed on SO and LR.

• Pupil may be spared

• Lid Ptosis can be a blessing
Cranial Nerve III Palsy

- **Causes:**
  - Vasculopathy from DM or HTN
  - Compression by aneurysm

- **MRI?**
  - Depends on age and if complicated by other neural structures

- **Consult to Eye Care Provider**
  - Cooperative effort in monitoring patient
Migraine

- Usually gradual onset
- 20-30 minute duration
- Can be followed by headache
- Usually involves BOTH eyes – Why?
Migraine
RED EYE

• Can be quite perplexing
• EVEN WITH A SLIT LAMP!
• Case History is Everything
Red Eye Causes

- Chemical
- Contact Lens Related
- Allergy
- Exposure
- Foreign Body
- Bacterial
- Viral
- Subconjunctival Hemorrhage
- Abrasion
Chemical Conjunctivitis

- Usually diagnosed from case history
- FLUSH FLUSH FLUSH
- Refer
- Depends on substance
- White and Quiet?

*Although the eye looks “white and quiet,” this is a severe alkali burn! The eye is “white” because of diffuse ischemia and blanching of the conjunctival vessels. This picture was taken one week following injury.*
*Photograph courtesy of Dr. James Chodosh*
Chemical/Toxic Conjunctivitis

- Can be less severe and sometimes self-induced
- Eyedrops and cosmetics
- Vision usually good
- Education
- Cold Compresses
- Artificial Tears (PF)
- Referral?
Contact Lens Related

- Sleeping in Lenses
- Inappropriate Cleaning and Disinfecting
- Sharing Lenses
- Poor fit
  - Internet retail
- Overwear
- Solution Hypersensitivity
Contact Lens Related

- Pain
- Injection
  - + EAT AT JOE’S sign
- Photophobia
- FB sensation
- Stains with NaFL
- Previous stromal scars
Contact Lens Related

- Consult with their Contact Lens fitting doc – Refer!
- STOP wearing lenses
- Broad spectrum antibiotic (My favorites)
  - Vigamox (moxifloxacin) 3ml = $68
  - Quixin (levofloxacin) 5 ml = $64
  - Zymar (0.3% gatifloxacin) 5ml = $77
    - Zymaxid (0.5% gatifloxacin) 3ml = $121
  - Ocuflox (ofloxacin) 5ml = $28
  - Ciloxan (ciprofloxacin) 5ml = $41
Allergic

- Usually some external etiology
- Again, CASE Hx critical
- Usually bilateral
- May be seasonal or environmental
- Identify cause and remove
- Contact lens wear
- Papillae on palpebral conjunctiva
Allergic Exam
Allergic

- Stop Contact Lens Wear
- Treatment:
  - COLD compresses
  - Artificial Tears
  - Topical drops
    - Zaditor (ketotifen) - OTC
    - Patanol (olopatadine) – Rx only
    - Topical Steroid in severe cases – Refer for this
Exposure

- Nocturnal Lagophthalmos
- Ectropion in elderly
- Floppy Eyelid Syndrome
  - Mimics chronic allergic
  - Lax eyelid elasticity
  - Often in obese
  - Probably needs sleep study

Figure 1. Corneal epithelial staining with fluorescein in a patient with severe dry eye.
Foreign Body

• Again, case history critical.
• Size matters.
Foreign Body
Foreign Body Exam

• Fluorescein
• Referral
• Proparacaine
  – ….but don’t send the bottle with the patient
  – 2 reasons:
    • Feels better and won’t actually seek treatment
    • Toxic to cornea
• Tape eyelid
Rust Ring
Bacterial Conjunctivitis

- Actually quite rare – usually starts monocular
- Commonly Staph, Strep, Pseudomonas
- Can be hyperacute: Neisseria or Corynebacterium
Bacterial Conjunctivitis

• Treatment:
• Review infection control for household
• Fluoroquinolones q2h to qid
  – Vigamox
  – Zymar
  – Quixin
  – Ocuflox and Ciloxan still acceptable as well
Bacterial Conjunctivitis

• Avoid:
  – Sulfacetamide – bacteriostatic vs bacteriocidal
  – Gentamycin – corneal toxicity
  – Steroids

• Polytrim is okay, but.....
Viral Conjunctivitis
Viral Conjunctivitis

- Usually presents monocular
- Watering, redness, puffy lids
- No FB, possible corneal stain, possible fever
- Frequently contact with “someone else”
- Epidemic Keratoconjunctivitis vs Pharyngoconjunctival Fever
- Rule of 8’s
Viral Conjunctivitis

- Treatments:
  - Cold compresses
  - Review hygiene
  - Artificial Tears
  - Possible prophylactic antibiotic if corneal staining
    - Usually satisfies daycare
  - Review drop technique
EKC

• Subepithelial infiltrates
Herpes Simplex Keratitis

- A good reason NOT to use steroids for a red eye.
- When in doubt, refer.
Eyedrop Technique

- Lower lid pocket
- Don’t touch tip to eye
- Use bridge of nose
Sub Conj Heme
Sub Conj Heme

- Often on blood thinners
- Sometimes trauma
- + “Spouse Awareness” sign
- No vision changes or pain usually
- Cold Compresses and Artificial Tears as needed
- NO vasoconstrictors (Visine or Clear Eyes)
Episcleritis

- Often underlying cause
- IBS, RA, SLE, etc
- Tx: cold compresses
- Steroid or NSAID
- Workup if recurrent
Abrasions

- Case History
- Source
  - Kids, pets, branch
- Corneal Staining
- Pain/FB sensation
- Photophobia
- Watering
Uveitis or Iritis

• Photophobia and redness
• Usually monocular
Uveitis or Iritis

- One Freebie
- After that workup, unless injury related
- Cycloplegic drops for pain
- Steroid Drops

- Should be referred to eyecare provider
- Comanagement is likely
Abrasions

- NaFL staining
- Remove FB if suspected
- Proparacaine in office
- Refer for bandage contact lens
- Temporary pressure patch or tape eyelid shut
- Cycloplegic drops
- Antibiotic drops
- Close slitlamp exam monitoring
Direct Ophthalmoscopy
Direct Ophthalmoscopy

• FG Kicker approach
Direct Ophthalmoscopy

• Pearls:
  – Raise the patient to your level
  – Give pt a distance target
  – Start 5-6 feet away and focus then LEAVE IT
  – Take a step laterally (temporally)
  – Use crosshairs if possible
  – Reduce light in room AND on scope
  – Find vessel and track to nerve
  – Don’t forget the macula!
Direct Ophthalmoscopy
Direct Ophthalmoscopy
Direct Ophthalmoscopy
Direct Ophthalmoscopy

- What am I looking for???
- Asymmetry in appearance/color of nerve
- Blood OUTSIDE of blood vessels
- Disc margins
- Macular pathology
  - Heme or whitish exudate
- Anything else that doesn’t look “normal” or “right”
Normal Fundus
Diabetic Retinopathy
Diabetic Retinopathy
Hypertensive Retinopathy
Macular Degeneration
Glaucoma
Hands on Practice Time

- Pupil Exam
- Confrontation Fields
- Cover Testing for Pupil Reflex
- Gross Observation
- Direct Ophthalmoscopy
Thanks for your attention!

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