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

- Superior Oblique m.
- Superior Rectus m.
- Medial Rectus m.
- Lateral Rectus m.
- Optic n.
- Inferior Rectus m.
- Inferior Oblique m.
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
  – Aneurysm 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
Abrasion

- 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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