Top Ten Pathology Pitfalls

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Disclosures – Jill Autry, OD, R.Ph.

- Speaker’s Bureau/Consultant/KOL Boards
  - Allergan
  - Alcon
  - B&L
- Owner/Partner
  - Tropical CE
    - Topicalce.com
  - Eye Center of Texas Ophthalmology, Houston
- Editorial Boards
  - Primary Care Optometry News
  - Optometry Times
  - Review of Optometry

DEMOGRAPHICS DICTATE

- Use demographic data to help guide you to a diagnosis.
  - Age
  - Gender
  - Race
  - Ethnicity
  - Risk factors
  - Family history

DILATE PATIENTS

- Dilate patients.
  - Examining the peripheral retina even in asymptomatic patients can save their sight and/or their life.
  - Don’t let patient “wants” or your schedule dictate appropriate care.
  - You are the doctor.
  - Optos can find pathology HOWEVER
  - Optos captures only 80% of retina in best cases. 20% is not visible, especially superiorly and inferiorly.

LOOK AT BOTH EYES

- Look at both eyes; not just the one the patient is complaining about.
  - The normal eye often gives clues to aid you in your diagnosis.
  - The other eye may have similar or unrelated pathology.
JUST ANOTHER CORNEAL ABRASION?

- What do you need to know?
  - What is treatment protocol?
    - Cycloplegic
    - Bandage CL or patch
    - Antibiotic cover
    - Pain meds prn
    - Consider "comfort drops"
    - See in a few days

- What was the cause of the abrasion?
  - Beware of:
    - I "musta" got something in my eye....
    - Especially concerning with contact lens wearers
    - Treat the abrasion aggressively with antibiotic
    - No patching
    - No bandage CL
    - No pain meds
    - See the next day

JUST ANOTHER CORNEAL ABRASION?

HIGH IOP?
ANGLE CLOSURE, RIGHT?

- Who gets angle closure glaucoma?
  - Hyperopes
  - Older patients
  - Phakic with increasing lens size/cataract
  - Someone WITH A CLOSED ANGLE!!!

IOP in 40-60mmHg range
- Cornea cloudy; may have microcystic edema
- Pupil often mid-dilated with little reaction to light
- Conjunctival hyperemia
- Patient often with pain, nausea, vomiting, and/or headache
- Perception of halos around lights
HIGH IOP?
ANGLE CLOSURE, RIGHT?

- Can’t do gonio because:
  - Cornea is edematous
  - Eye is painful
  - What to do?

PSEUDOEXFOLIATIVE GLAUCOMA

- Exfoliative material from lens
- Abrasive action causes pigment release
- Exfoliative material and pigment decrease trabecular meshwork flow
- Unilateral or bilateral
- Zonular fibers are weakened making lens dislocation possible, especially during cataract surgery
- Iris also dilates poorly

CHARACTERISTICS

- Caucasian patients
- See exfoliative grayish-white, flaky material on anterior lens surface
- Material settles in a ring on peripheral edge of lens
- See pupillary transilluminating defects
- See loss of pupillary pigmented ruff
- Seen best with dilated lens examination

TRAUMATIC GLAUCOMA

- Aka Angle Recession Glaucoma
- Unilateral
- History of trauma in affected eye
- Blunt trauma with microhyphema/hyphema
- IOP may be elevated or decreased initially depending on a variety of factors
- Long-term risk of glaucoma is usually secondary to angle recession (may not present for 20 years)

UVEITIC GLAUCOMAS

- Inflammation can cause initial decrease in IOP
  - Reduction in aqueous secretion
  - Increase in uveoscleral outflow
- Over time, especially with recurrences, inflammatory material can obstruct the trabecular meshwork
- Trabeculitis can also increase IOP
- Increased IOP may be transient or may persist with permanent structural changes

IDIOPATHIC UVEITIS

- Pain, photophobia, decreased vision
- Cell and flare, ciliary flush, injection
- Keratic precipitates on corneal endothelium
- Initial decrease in IOP
- IOP may rise with poor TM outflow
- Posterior and/or peripheral anterior synechiae
- IOP harder to control with synechiae formation
- Also known as Glaucomatocyclitic crisis
- Uveitic glaucoma
- Unilateral
- Young to middle-aged men
- Mild uveitis in association with very high IOP
- Often found on routine exam
- Often with exacerbations and remissions

**CHARACTERISTICS**
- Mild cell and flare, sometimes flare only
- Fine keratic precipitates (KP) on corneal endothelium
- No pain, eye is white
- Mild decrease in visual acuity
- IOP often 50-60 mmHg
- Patient often develops chronically elevated IOP requiring long-term treatment or surgery

**POSNER-SCHLOSSMAN**
- Uveitic glaucoma (chronic, low-grade)
- Generally asymptomatic
- Unilateral (90%), bilateral (10%)
- Characteristic triad
  - Heterochromia
  - Glaucoma
  - Cataract

**FUCH'S HETEROCHROMIC IRIDOCYCLITIS**
- Lighter iris color in involved eye
- Fine, stellate keratic precipitates on entire corneal endothelium (not just inferior)
- Posterior synechiae is not seen but may see peripheral anterior synechiae
- Frail angle vessels can cause spontaneous hyphema or surgically induced hyphema
- Pure neovascularization of iris and/or neovascular glaucoma rare

**CHARACTERISTICS**
- Ocular ischemia causes neovascularization
- Neovascularization of the anterior segment leads to increased IOP
- Direct obstruction of the trabecular meshwork by a neovascular membrane
- Seen more often with certain ischemic ocular conditions
  - CRVO
  - Proliferative diabetic retinopathy (PDR)
  - Ocular ischemic syndrome (OIS)

**HERPETIC UVEITIC GLAUCOMA**
- Uveitis and initial high IOP
- Simplex induced uveitis
  - May or may not see dendrite
  - May have other corneal irregularity
  - Ask if history of recurrent, unilateral red eye
- Zoster induced uveitis
  - Characteristic lesions on one side of upper face

**NEOVENTRUCULAR GLAUCOMA**
**CHARACTERISTICS**

- Iris neovascularization (NVI)
- Angle neovascularization (NVA)
- Spontaneous hyphema
- History of poor visual acuity in affected eye for months to years
- Older patients
- Vasculopathic conditions

**PIGMENTARY GLAUCOMA**

- Flacid, peripheral iris bows posteriorly
- Believed to rub against lens zonules
- Releases iris pigment
- Decreases trabecular meshwork function
- One-third of pigmentary dispersion patients will develop pigmentary glaucoma
- Bilateral but IOP often asymmetric

**CHARACTERISTICS**

- Demographics
  - Young
  - Male
  - Myopic
  - Caucasian
- Mid-peripheral iris transilluminating defects (TID)
- Krukenberg spindle (K spindle)
- Heavy pigment in trabecular meshwork on gonioscopy
- Acute IOP rise after exercising

**VISION IS DOWN BUT EXAM IS NORMAL...**

- Use a systematic approach to look for hidden causes of decreased VA
  - Corneal
  - Lens
  - Retina
  - Optic nerve
  - Brain

**BEFORE dilation**

- Check for an APD
- Use a B10 and not a penlight
- Use the “down/up” way to evaluate
- ALREADY DILATED?
• The "I GOTCHA" refraction
  • Especially with kids or worker's comp cases
  • Start with 20/40 or 20/50 line
  • Dial in large amounts of plus and cyl
  • Do "calculations" in front of patient
  • Keep making large changes in Rx as you "refract"
  • Discuss in front of patient the amount of "power" you are using to make them "see"
  • Make lines smaller as patient is able to correctly give answers

VISION IS DOWN BUT EXAM IS NORMAL...

• It's NOT amblyopia without an amblyogenic factor
  • High refractive error
    • High hyperopia more common
    • High myopia less common
  • Anisometropia
  • Strabismus
    • History of patching
    • Four base out prism test

VISION IS DOWN BUT EXAM IS NORMAL...

• Bacterial keratitis
• Bacterial conjunctivitis
  • But, guess what? It's probably viral...
• Corneal abrasion
• Perioperative
• Blepharitis

VISION IS DOWN BUT EXAM APPEARS NORMAL...

• Rarely start less than q2h
• Use only the “big dogs” for all non-dry eye inflammatory states
  • Pred Forte®
    • BRAND NAME ONLY PREFERRED
    • If must use generic—keep bottle upside down.
  • Durezol®

TOO MUCH, NOT ENOUGH

TOO MUCH, NOT ENOUGH

TOO MUCH ANTIBIOTIC, NOT ENOUGH STEROID
**TWO MUCH, NOT ENOUGH**

- Wimping out on the dosage can prolong treatment of the disease
- Don’t undertreat with a steroid just b/c the pressure COULD go up
  - Treat any rise in IOP with glaucoma medication
  - Remember only 5% of the general population are steroid responders
  - 95% of glaucoma patients are steroid responders
  - Steroid response usually take 2 to 4 weeks with topical use

**TRAUMATIC HYPERHEMA**

- What caused the trauma?
- Is the anterior chamber deep?
- What is the IOP?
- What is the vision?
- Dilate the patient to view the retina.

**INITIAL TREATMENT**

- Start steroid q2h
- Homatropine 5% tid
- Refer for B-scan prn or if Seidel’s sign found
- Control IOP if elevated
  - Alphagan P, beta-blockers, CAIs
  - Avoid prostaglandins if possible
- Limit activities, keep HOB elevated, no ASA or IB products

**LONG TERM EVALUATION**

- Signs of previous trauma
  - Poor pupillary constriction secondary to sphincter tear
  - Iridodialysis
  - Cycloidalysis
  - Angle recession on gonioscopy
  - Compare with gonio of unaffected eye
  - Increased IOP
  - Weak or torn zonules
  - Cataract

**SIMPLEX VS ZOSTER**
Herpes
- Both caused by herpes virus
- Both unilateral conditions
- If you see the same problem in both eyes it will not be herpetic
- IOP may be high with simplex or zoster

SIMPLEX VS ZOSTER

Simplex
- Pinpoint areas of negative staining which can coalesce into dendrites
- History of same sided eye infections in past
- May or may not have history of cold sores/other herpetic lesions
- May see old corneal scarring
- May have high IOP

SIMPLEX

Zoster
- Unilateral
- Older patient
- With same-sided, vesicular facial lesions
- Lesions on tip of nose suggestive of impending or current ocular involvement
- Conjunctivitis/iritis/corneal pseudodendrites
- May appear before skin lesions

SIMPLEX TREATMENT
- In place of Viroptic or Zirgan topically
  - Acyclovir 400mg 5x day x 10 days
  - Famvir® 250mg tid x 7 days
  - Valtrex® 500mg tid x 7 days
- For prevention of recurrences or to cover steroid
  - Acyclovir 400mg qd-bid
  - Famvir® 250mg qd
  - Valtrex® 500 qd

ZOSTER

Treatment of epithelial simplex
- Consider debridement
- Consider betadine wash
- Viroptic 9X day or
- Zirgan 5X day
- Or Orals

Treatment of stromal disease
- Treat stromal disease with Pred Forte® 1% or Durezol
- Cover steroid with Viroptic®/Zirgan® or oral antiviral
- Usually do steroid 2:1 ratio of topical antiviral
ZOSTER TREATMENT
- Viroptic NOT used in Herpes zoster
- Make sure oral antivirals on board
- If severe keratitis or moderate to severe AC reaction
  - Start PF or Durezol q2h to qid
- If mild AC reaction/hyperemia only
  - Consider watching with cycloplegic only
- Watch IOP!! Avoid prostaglandins

For Herpes Zoster (shingles) treatment
- Must start within 72 hrs for best effect; preferably within 24 hrs
- Acyclovir 800mg 5X day
- Famvir 500mg tid
- Valtrex 1 gram tid

PAPILLEDEMA SIGNS
- Bilateral ONH swelling caused by increased intracranial pressure
- Peripapillary swollen NFL
- Blurring of disc margins
- Blurring of ONH vasculature
- Peripapillary flame shaped hemorrhages
- Enlarged blind spots on VF testing
- No RAPD

PAPILLEDEMA SYMPTOMS
- Transient obscurations of vision lasting seconds (usually bilateral)
- Headaches worse upon wakening
- Diplopia secondary to 6th nerve palsy
- Little or no vision loss
  *unless chronic
- Color vision intact
  *unless chronic

PSEUDOPAPILLEDEMA
- Blurred disc margins
- No blurring of vasculature
- Little or no cupping
- No NFL swelling
  - OCT often with segmental loss of NFL

Papilledema vs pseudopapilledema
THANK YOU!