Red Eyes: A Guide to Differential Diagnosis

Shaista Vally, OD
Basic Anatomy

Location: what is red?

- Eyelids vs eyelid margin
- Eyelid vs palpebral conjunctiva
- Palpebral vs bulbar conjunctiva
- Sectoral vs limbal injection
- Scleral vs episcleral
Severity: How red is it?

- Pinpoint or diffuse?
- Deep purple red vs blood red?
- Faint vs dark (grade 1-4)
Cause: 4 Categories

- Irritation (trauma)
- Inflammation (immune, think “bruise”)
- Infection (viral, bacterial, fungal)
- Ischemia (lack of oxygen)
History: paints the picture!

- FOLDARS
- Frequency, Onset, location, duration,
- Associated factors, relieving factors, severity
Case 1:

- Sudden onset
- Partial/sectoral blood red
- One eye only
- Painless
- Coughing, sneezing, heavy lifting
- Questionable blood thinner use
Case 1: Subconjunctival hemorrhage
Case 1: Subconjunctival hemorrhage

Case 1: PEARLS

• Trauma?
• Meds?
• Double vision?
• Pain?
• Reduced vision?
Case 1a:

- Sudden onset
- Partial/sectoral diffuse red
- One eye only
- Painless
- Maybe some mild discomfort
Case 1a: episcleritis

http://www.tanner-eyes.co.uk/images/eye/episc1.gif
Case 1b:

- Sudden onset
- Partial/sectoral diffuse red
- One eye only
- Painful
- FBS
Case 1b:

[Image of an eye with a pinkish area near the pupil]
Case 2:

- Comes and goes x months
- Diffuse redness
-Blurry vision
- Sandy, gritty, burning feeling
- Blinking helps
- Some mild light sensitivity
- One or both eyes
Case 2: Dry Eyes

Case 2: Dry Eyes; 2* MGD

Case 2: Dry Eyes; 2*blepharitis
Case 2: Dry Eyes; 2* exposure
Case 2: PEARLS

- Using tears? How often?
- Brand of tears? Preservative-free?
- Ointments?
- Other eye drops (Visine? GL drops?)
- Warm compresses/lid scrubs? How often?
- New oral medications?
Case 3:

- Burning/irritation with contacts
- No improvement when removing contacts
- Blurry vision
- Sandy, gritty, burning feeling
- No improvement with tears
- Some mild light sensitivity
- One or both eyes
Case 3: C.L.A.R.E (contact lens associated red eye)

http://pediatriccare.solutions.aap.org/data/Books/1017/chp215_F014.jpeg
Case 3: C.L.A.R.E (contact lens associated red eye)

http://www.reviewofcontactlenses.com/CMSImagesContent/2015/4/Anti-VEGF.jpg
Case 3: C.L.A.R.E 2* GPC
Case 3: C.L.A.R.E 2* solution sensitivity
Case 3: PEARLS

- Brand of lens/solution?
- Wearing schedule? Max wear time?
- Sleeping? Showering?
- Rubbing lens when cleaning?
Case 4:

- Itching, burning, FBS OU
- Comes and goes, both eyes
- Associated swelling of eyelids
- Mild mucoid or watery discharge
- Changes with seasons
- Takes oral antihistamines/allergy meds
Case 4: Allergic Conjunctivitis

http://www.newhealthguide.org/images/10420176/Allergic-Conjunctivitis.jpg
Case 4: PEARLS

- Looks and acts like dry eyes
- **Itching and swelling** is key difference
- If previous episodes, unlikely viral
- However, if starts in one eye, then goes to the next... think viral!
Case 5:

- **Watery eyes**, (clear tear like)
- Diffuse faint redness
- FBS, burning, blurry vision
- Starts in one eye moves to the next
- Associated with URI
Case 5: EKC, epidemic keratoconjunctivitis
Case 5: EKC, epidemic keratoconjunctivitis

http://www.hindawi.com/journals/joph/2010/423672.fig.004.jpg
Case 5: Viral

- EKC is blood red (sometimes bloody tears)
- EKC swollen eyelids with membrane
- If unsure, **WEAR GLOVES**!
- Virus has waxy coat:
  need to rub when cleaning
Case 6:

- Red eyes with lashes matted in the am
- One or both (kids usually both)
- **Yellow crust on lashes**
- Eyes feel like they are “gooping wet”
- Mild discomfort, FBS
Case 6: bacterial conjunctivitis

Case 6: Bacterial

• Direct transfer to be contagious
• Easier to disinfect surfaces
• Ok to RTS/RTW with Tx
• Look at lashes **BEFORE FL!**
Case 7:

- Very painful red eye
- Sensitive to light
- Wears contacts
- White opacity on cornea
Case 7:

- Very painful red eye
- Sensitive to light
- Wears contacts
- Blurry vision
- White opacity on cornea
Case 7: bacterial corneal ulcer

Case 7a:

- Very painful red eye
- Sensitive to light
- Wears contacts or felt something in eye
- Blurry vision
Case 7a: corneal abrasion
Case 8:

- **painless red eye** (mild discomfort)
- Sensitive to light
- White opacity on cornea
- Blurry vision
- May or may not have h/o fever blisters
Case 7: herpes simplex keratitis

http://www.oculist.net/downaton502/prof/ebook/duanes/graphics/figures/v9/0090/018f.jpg
Case 9:

- Painful red eye
- “dull headache/pressure behind eye”
- Very sensitive to light
- Probably wearing sunglasses
- Blurry vision
- May have increase in tearing
Case 8: uveitis

Chlamydial conjunctivitis
Gonococcal conjunctivitis
Carotid Cavernous Fistula
scleritis
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THANK YOU!