Goal

• Review the common causes of non traumatic Red Eye (excluding chemical exposure, direct injury to globe)
• Recognize and treat the common form of conjunctivitis.
• Recognize the features of red eye that warrant more caution and referral
• Overview of the some of the more unusual causes of red eye.

Non Traumatic Red Eye: Etiology

Benign (treat)
- Conjunctivitis
  - Bacterial
  - Allergic
  - viral
- Minor
  - Blepharitis
  - Dry eye
  - Styes
  - Smoke, Irritation,

Vision Threatening (refer)
- Angle closure
- Keratitis
- Uveitis

Basic Examination

• Vision
• Inspection
  - Conjunctiva
  - Cornea
  - AC
  - Iris
  - Lids
  - Versions
• Pupil

Conjunctival Anatomy

Redness
### CONJUNCTIVITIS

- Vision: Normal
- Pupils: Normal
- Cornea: Normal
- Intraocular pressure: Normal.
- NO PAIN ~!!!
- Itchy (allergic); Flu like (viral); discharge (bacterial)

### CONJUNCTIVITIS: DISCHARGE

<table>
<thead>
<tr>
<th>Discharge</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purulent</td>
<td>Bacterial</td>
</tr>
<tr>
<td>Clear</td>
<td>Viruses (Preauricular lymphadenopathy signals viral infection)</td>
</tr>
<tr>
<td>Stringy, white mucus</td>
<td>Allergies</td>
</tr>
</tbody>
</table>

### BACTERIAL CONJUNCTIVITIS: COMMON CAUSES

- *Staphylococcus*
- *Streptococcus*
- *Haemophilus*

### BACTERIAL CONJUNCTIVITIS: TREATMENT

- Topical antibiotic qid x 4 days
- Warm compresses
- Refer if not markedly improved in 4 days

### VIRAL CONJUNCTIVITIS

- Watery discharge
- Highly contagious
- Palpable preauricular lymph node
- URI, sore throat, fever common

If pain, photophobia or decreased vision, refer.

### Viral conjunctivitis
ALLERGIC CONJUNCTIVITIS

- Associated conditions: hay fever, asthma, eczema
- Contact allergy: chemicals, cosmetics
- Treatment: topical antihistamines, tears to relieve itching

Refer refractory cases.

Non Traumatic Red Eye: Etiology

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Warning Signs and Symptoms

- Pain! Tenderness
- Photophobia
- Decreased vision, loss of vision
- Corneal involvement
- Pupillary involvement
- Elevated Intraocuclar pressure
- The presence of any of these warrants referral.

Anterior Segment

Corneal Layers

MRI masterfile Part 5 WM Heme Strokes.ppt
Keratitis: Symptoms and Signs

- Pain
- Photophobia
- Blurred vision
- Hazy or opacified cornea
- Epithelial defects (Fluorescein positive)

Corneal Ulcer

TOPICAL STEROIDS
TOPICAL STEROIDS: SIDE EFFECTS

1. Facilitate corneal penetration of herpesvirus.
2. Elevate IOP (steroid-induced glaucoma).
3. Potentiate fungal corneal ulcers

IRITIS: Symptoms and Signs

- Circumcorneal redness
- Pain
- Photophobia
- Floaters
- Decreased vision
- Miotic pupil; irregular or mishapen pupil
- Associated systemic disease

Uvea: iris, ciliary body, choroid

Cells and flare

Iritis

Keratic precipitates

Hypopyon
### Complications of Uveitis

#### Posterior Uveitis

- Infectious
  - Toxoplasmosis
  - Syphilis
  - Lyme
  - Viral
  - TB
  - Herpes zoster
  - Nematodes
  - CMV
  - Toxocara canis (dog roundworm)

- Autoimmune
  - Ankylosing spondylitis
  - Reiter syndrome
  - MS
  - Inflammatory bowel disease
  - Sarcoidosis
  - Vogt Koyanagi Harada
  - Vasculitis
  - Behcets

- Idiopathic
  - Masquerade syndrome
  - Lymphoma
  - Ocular ischemia
  - Retinoblastoma

### Sarcoidosis

#### Sarcoidosis

- Infectious
  - Toxoplasmosis

- Autoimmune
  - Ankylosing spondylitis
  - Reiter syndrome
  - MS
  - Inflammatory bowel disease
  - Sarcoidosis
  - Vogt Koyanagi Harada
  - Vasculitis
  - Behcets

- Idiopathic
  - Masquerade syndrome
  - Lymphoma
  - Ocular ischemia
  - Retinoblastoma

### Uveitis

#### Angle Closure Glaucoma

- Pupillary block
- Angle obstruction
- Increased pressure
- Pain, headache
- Nausea vomiting
- Corneal edema
- Fixed pupil
- Shallow chamber
Angle Closure is an Emergency!

Recognize acute glaucoma, “the great masquerader,”

EMERGENCY!

ACUTE GLAUCOMA: INITIAL TREATMENT

• Pilocarpine 2% gtt q 15 min x 2
• Acetazolamide 500 mg po or IV
• Oral glycerine or isosorbide, 1 cc/kg body weight
• IV mannitol 20% 300-500 cc

RED EYE OVERVIEW

RED EYE DISORDERS: NON-VISION-THREATENING

• Subconjunctival hemorrhage
• Hordeolum
• Chalazion
• Blepharitis
• Dry eyes
• Corneal abrasions (most)

Red Eye Gravis

• Scleritis, Orbital pseudotumor
• Dysthyroid orbitopathy
• Carotid cavernous fistula
• Orbital cellulitis
• Orbital tumors

Scleritis

• 50% with systemic disease
• Reumatoid arthritis
• Wegeners
• Polyarteritis
• Lupus
• Relapsing polychondritis.
Thyroid Orbitopathy

Carotid Cavernous Fistula

Orbital Cellulitis

Not Conjunctivitis!

- Pain ! Tenderness
- Photophobia
- Decreased vision, loss of vision
- Corneal involvement (edema, infiltrate)
- Pupillary involvement (fixed, irreg, small)
- Lid swelling, proptosis, fever
- Elevated Intraocular pressure
- The presence of any of these warrants referral.

Emergent Referrals

- NO DELAYS
  - Orbital cellulitis
  - Angle closure glaucoma
  - Corneal ulcers
- WITHIN 24 HOURS
  - Iritis
  - Scleritis, Orbital pseudotumor
- Treat, refer if it fails to clear
  - Conjunctivitis, Stye, Blepharitis, Dry Eye