The Acute Red Eye

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Question 1 – acute red eye

- 34 year old male
- Eye ‘a bit sore’
- Sensitive to light
- Vision slightly blurry

Sight threatening or self limiting?
Question 2 – acute red eye

- 78 year old female
- Sore (uncomfortable) since this morning
- Couldn’t open eyes easily first thing
- Intermittent blurring of vision

Sight threatening or self limiting?
Question 3 – acute red eye

- 29 year old male
- Concerned about red eye that appeared suddenly
- Not painful

Sight threatening or self limiting?
Sight threatening or self limiting?

Fred always hated having his eyes tested.
Acute Red Eye
Differential Diagnosis

- Conjunctivitis
- Keratitis
- Uveitis/Iritis
- Acute Angle Closure Glaucoma
- Scleritis
- Episcleritis
- Subconjunctival Haemorrhage
- Ocular Trauma
Acute Red Eye
Differential Diagnosis

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# Conjunctivitis

<table>
<thead>
<tr>
<th>History</th>
<th>Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past ocular disease ≈</td>
<td>Vision ✗</td>
</tr>
<tr>
<td>Vision ✗</td>
<td>Discharge ✓</td>
</tr>
<tr>
<td>Pain and severity ✗</td>
<td>Redness and distribution: Bulbar and palpebral</td>
</tr>
<tr>
<td>Photophobia ✗</td>
<td>Corneal clarity ✗</td>
</tr>
<tr>
<td>Ocular discharge ✓</td>
<td>Pupil size and mobility ✗</td>
</tr>
<tr>
<td>Systemic symptoms ≈</td>
<td>Intraocular pressure ✗</td>
</tr>
</tbody>
</table>

- **Vision**: ✗
- **Discharge**: ✓
- **Redness and distribution**: Bulbar and palpebral
- **Corneal clarity**: ✗
- **Pupil size and mobility**: ✗
- **Intraocular pressure**: ✗
Distribution of redness

Circum-corneal / ciliary  Bulbar / palpebral
Conjunctivitis: Management

- Largely self-limiting
- Swab and identify responsible organism
  - Bacterial
    - Chloramphenicol
    - Fucithalmic
  - Viral
    - No specific treatment
  - Chlamydial
    - Systemic tetracycline
Acute Red Eye
Differential Diagnosis

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Keratitis
# Keratitis

## History
- Past ocular disease ≈
- Vision ↓
- Pain and severity: ++ to +++
- Photophobia ✓
- Ocular discharge ✗
- Systemic symptoms ✗

## Signs
- Vision ↓
- Discharge ✗
- Redness and distribution: Ciliary
- Corneal clarity ↓
- Pupil size and mobility ✗
- Intraocular pressure ✗
Microbial keratitis

- Bacterial
- Viral
- Fungal
- Acanthamoeba (contact lenses)
Viral keratitis:
Herpes Simplex Virus
Keratitis: Management

- Corneal scrape
- Mydriatic
- Start intensive antimicrobials immediately
- Bacterial
  - Monotherapy: ciprofloxacin
  - Dual therapy: fortified Kefzol & Tobrex
- HSV
  - Acyclovir ointment 5x daily
Acute Red Eye
Differential Diagnosis

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# Anterior Uveitis

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<thead>
<tr>
<th>History</th>
<th>Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past ocular disease ✗</td>
<td>Vision ✓</td>
</tr>
<tr>
<td>Decreased vision ✓</td>
<td>Discharge ✗</td>
</tr>
<tr>
<td>Pain and severity ✓</td>
<td>Redness and distribution: Ciliary</td>
</tr>
<tr>
<td>Photophobia: +++</td>
<td>Corneal clarity ✗</td>
</tr>
<tr>
<td>Ocular discharge ✗</td>
<td>Pupil size and mobility: Small (miotic)</td>
</tr>
<tr>
<td>Systemic symptoms ≈</td>
<td>Intraocular pressure ✗</td>
</tr>
</tbody>
</table>
Acute Anterior Uveitis / Iritis
Acute Anterior Uveitis/Iritis

Posterior synechiae
Aetiology

- Idiopathic
- Ankylosing spondylitis
- Reiters syndrome
- Juvenile arthritis
- Psoriatic arthropathy
- Sarcoidosis
Anterior Uveitis: Management

- Subdue Inflammation
  - Topical corticosteroids
- Prevent Posterior Synechiae
  - Mydriatic e.g. cyclopentolate
- Reduce IOP if elevated
  - Betablocker e.g. timolol
Acute Red Eye
Differential Diagnosis

- Conjunctivitis
- Keratitis
- Uveitis/Iritis
- Acute Angle Closure Glaucoma
- Scleritis
- Episcleritis
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- Ocular Trauma
# Acute Angle Closure

## History
- Past ocular disease: ✗
- Decreased vision: +++
- Pain and severity: +++
- Photophobia: ✗
- Ocular discharge: ✗
- Systemic symptoms: ✗

## Signs
- Vision: ↓ +++
- Discharge: ✗
- Redness and distribution: Ciliary
- Corneal clarity: ↓
- Pupil size and mobility: Fixed mid-dilated
- Intraocular pressure: ↑↑
ACAG: Anatomical predisposition

Iris bombé

pupillary block
Acute Closed Angle Glaucoma

- Red eye
- Hazy cornea
- Pupil mid-dilated
- Pupil non-reactive
- High IOP
Acute Closed Angle Glaucoma

- **Incidence**
  - 1/1000 (Caucasian) to 1/100 (Asian) > 40 yrs
  - Ratio M:F is approximately 1:4

- **Predisposition**
  - Short eye
  - Narrow angle
  - Large lens

Therefore the older female hypermetrope is at risk
ACAG: Acute Management

- Reduction of IOP (Typically > 50mmHg)
  - Topical Agents
    - Prostaglandin analogues
    - Betablockers
    - Alpha agonists
  - Systemic Agents
    - Acetazolamide
    - Mannitol
ACAG: Surgical management

Aim: to re-establish normal aqueous flow & maintain IOP reduction

- YAG laser iridotomy
- Crystalline lens extraction
- Surgical iridectomy
- Trabeculectomy
Acute Red Eye
Differential Diagnosis

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- Uveitis/iritis
- Acute Angle Closure Glaucoma
- Scleritis
- Episcleritis
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- Ocular Trauma
Scleritis

- Relatively rare
- Very severe boring pain
- Focal injection of sclera
- Can lead to blindness if untreated
- Associated with systemic disease
# Scleritis

## History
- Past ocular disease: ≈
- Vision: ✗
- Pain and severity: +++
- Photophobia: ✗
- Ocular discharge: ✗
- Systemic symptoms: ✓

## Signs
- Vision: ✗
- Discharge: ✗
- Redness and distribution: Sectorial, bluish
- Corneal clarity: ✗
- Pupil size and mobility: ✗
- Intraocular pressure: ✗
Scleritis
Scleritis: Systemic associations

- Rheumatoid arthritis
- Herpes Zoster Ophthalmicus
Acute Red Eye
Differential Diagnosis

- Conjunctivitis
- Keratitis
- Uveitis/iritis
- Acute Angle Closure Glaucoma
- Scleritis
- Episcleritis
- Subconjunctival Haemorrhage
- Ocular Trauma
Episcleritis

- Relatively common
- Mild ocular discomfort
- Mild superficial injection
- Usually requires no treatment
- Seldom associated systemic disease
Episcleritis
# Episcleritis

## History
- Past ocular disease ≈
- Vision ✗
- Pain and severity: +
- Photophobia ✗
- Ocular discharge ✗
- Systemic symptoms ✗

## Signs
- Vision ✗
- Discharge ✗
- Redness and distribution: **Sectorial, pink**
- Corneal clarity ✗
- Pupil size and mobility ✗
- Intraocular pressure ✗
Acute Red Eye
Differential Diagnosis

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- Subconjunctival Haemorrhage
- Ocular Trauma
Subconjunctival Haemorrhage

- Focal bleeding under conjunctiva
- Severe coughing
- Valsalva manoeuvre
- Rarely systemic hypertension
- Requires no treatment
### History
- Past ocular disease: ✗
- Vision: ✗
- Pain and severity: ✗
- Photophobia: ✗
- Ocular discharge: ✗
- Systemic symptoms: ✗

### Signs
- Vision: ✗
- Discharge: ✗
- Redness and distribution: Opaque red
- Corneal clarity: ✗
- Pupil size and mobility: ✗
- Intraocular pressure: ✗
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Ocular trauma!!

Beware of picking your nose ....
The Acute Red Eye

• A methodical examination will enable appropriate management / referral decisions to be made.
Quiz – acute red eye

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*Sight threatening* or *self limiting*?
THANK YOU!