The Acute Red Eye

- Acute or chronic red eye (Oph01)
- Acute trauma to the eye (Oph02)
- Child with red swelling around one eye (Oph10)
The Acute Red Eye
What is a red eye?

- Dilation of superficial ocular vessels
  - Conjunctiva
    - Episclera
    - Sclera
Systematic Approach to Diagnosis

1. Past ocular disease/symptoms
2. Decreased vision
3. Pain and severity
4. Photophobia
5. Ocular discharge
6. Associated systemic symptoms
Systematic Approach to Diagnosis

- History
- Vision
- Discharge
- Appearance
- Pupils

1. Snellen visual acuity
2. Pinhole
Systematic Approach to Diagnosis

- **History**
- **Vision**
- **Discharge**
- **Appearance**
- **Pupils**

**Discharge**
1. Serous/watery
2. Mucoid
3. Purulent
4. Mucopurulent
Systematic Approach to Diagnosis

1. Past ocular disease/symptoms
2. Decreased vision
3. Pain and severity
4. Photophobia
5. Ocular discharge
6. Associated systemic symptoms

Systematic Approach to Diagnosis

History
Vision
Discharge
Appearance
Pupils

Image © Charles McGhee
Systematic Approach to Diagnosis

- Past ocular disease/symptoms
- Decreased vision
- Pain and severity
- Photophobia
- Ocular discharge
- Associated systemic symptoms

1. Snellen visual acuity
2. Pinhole

History

Vision

Discharge

Appearance

Pupils

1. Miosis
2. Mid-dilated
3. Sluggish/no reaction to light
Common causes of the acute red eye

1. Conjunctivitis
2. Sub-conjunctival haemorrhage
3. Keratitis
4. Episcleritis
5. Scleritis
6. Acute anterior uveitis
7. Acute angle closure crisis
8. Ocular trauma
Conjunctivitis
Conjunctivitis - Types

• **Infecitive**
  o Viral
  o Bacterial
  o Chlamydial

• **Allergic**
  o Seasonal (hayfever)/ Perennial (dust mites)
  o Vernal
  o Atopic
## Conjunctivitis

### Associated features

- **Viral:**
  - URTIs
  - Pre-auricular lymphadenopathy

- **Allergic:**
  - Atopy/hayfever
  - CL wear

- **Chlamydial:**
  - Urethritis (Reiters)
Conjunctivitis

- Generally normal unless:
  - Excessive lid swelling
  - Excessive discharge
  - Corneal involvement
Conjunctivitis

- **Viral**
  - Watery

- **Allergic:**
  - Mucoid/watery

- **Bacterial:**
  - Purulent

- **Chlamydial:**
  - Mucopurulent
Conjunctivitis

- History
- Vision
- Discharge
- Appearance
- Pupils
Conjunctivitis

History
Vision
Discharge
Appearance
Pupils

Allergic
Conjunctivitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Bacterial
 Conjunctivitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Follicles/Papillae
Conjunctivitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Normal
Conjunctivitis - Management

Swab and isolate responsible organism

- Bacterial = Topical Chloramphenicol
- Viral = Supportive Rx (compresses, lubricants)
- Chlamydia = Oral Azithromycin/doxycycline
Keratitis
Keratitis

History
- Painful (foreign body sensation)
- Photophobic
- Tearing
- Hx of CL wear/trauma

Vision

Discharge

Appearance

Pupils
Keratitis

- **Decreased**
  - Especially if involves visual axis
Keratitis

- **History**
- **Vision**
- **Discharge**
  - Watery, purulent
  - (depends on cause)
- **Appearance**
- **Pupils**
Keratitis

- Circumcorneal injection
- Corneal infiltrate/hazy cornea
- Overlying epithelial defect
Keratitis

History

Vision

Discharge

Appearance

Pupils

Bacterial

Image © Charles McGhee
Keratitis

History

Vision

Discharge

Appearance

Pupils

Bacterial

Image © Charles McGhee
Keratitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Fungal

Image © Charles McGhee
Keratitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Viral

Image © Charles McGhee
Keratitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Normal
Keratitis - Management

• **Isolate responsible organism**
  - Corneal scrape
  - Gram stain
  - Culture and sensitivity

• **Intensive treatment and close follow-up**
Acute Angle Closure Crisis
Acute angle closure crisis

- ↑ in IOP due to obstruction of aqueous outflow by complete or partial closure of the angle by peripheral iris

- Incidence
  - 1/1000 in > 40 y.o.

- Female: Male
  - 4:1
Acute angle closure crisis

Anatomical Predisposition

- Short eye
- Narrow angle
- Large lens
- OLDER HYPERMETROPE
Acute angle closure crisis

- Intense ocular pain & headache
- Nausea & vomiting
- Photophobia
- Premonitory symptoms
- Hypermetrope
Acute angle closure crisis

- **Vision**
  - Very blurred
    - Secondary to corneal oedema
Acute angle closure crisis

- **None**
Acute angle closure crisis

- Circumcorneal injection
- Cloudy cornea
- Optic nerve head swelling
  - If prolonged attack
  - Subsequent ON atrophy

History

Vision

Discharge

Appearance

Pupils
Acute angle closure crisis

- History
- Vision
- Discharge
- Appearance
- Pupils
Acute angle closure crisis

- History
- Vision
- Discharge
- Appearance
- Pupils
Acute angle closure crisis

- History
- Vision
- Discharge
- Appearance
- Pupils
Acute angle closure crisis

**History**

**Vision**

**Discharge**

**Appearance**

**Pupils**

Mid-fixed, dilated
Acute angle closure crisis

Be on the lookout!
Acute closed angle glaucoma masquerading as systemic illness

Dayan M, Turner B, McGhee CNJ
AACC - Management

Reduce IOP (often starts > 50 mmHg)

**Medical**
- Topical:
  - Alpha-agonist, Beta-blockers, Mitotics (Pilocarpine)
- Systemic:
  - Carbonic anhydrase inhibitors (Diamox), Osmotics (Mannitol)

**Surgical**
- Peripheral iridotomy
- Clear lens extraction/trabeculectomy
Peripheral Iridotomy
Acute Anterior Uveitis/ Iritis
Acute anterior uveitis - aetiology

- Idiopathic
- Ankylosing spondylitis
- Reiter’s syndrome
- Juvenile arthritis
- Psoriatic arthropathy
- Sarcoidosis
Acute anterior uveitis

**History**
- Moderate aching pain
- Photophobia
- Past history (esp if HLA-B27)
- Systemic symptoms

**Vision**

**Discharge**

**Appearance**

**Pupils**
Acute anterior uveitis

- Blurred
Acute anterior uveitis

- History
- Vision
- Discharge
- Appearance
- Pupils

• None
Acute anterior uveitis

- History
- Vision
- Discharge
- Appearance
- Pupils

- Circumcorneal injection
- Clear cornea
Acute anterior uveitis

History
Vision
Discharge
Appearance
Pupils

Image © Charles McGhee
Acute anterior uveitis

- History
- Vision
- Discharge
- Appearance
- Pupils
Acute anterior uveitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Miotic/sluggish response to light

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Acute anterior uveitis

History

Vision

Discharge

Appearance

Pupils

Posterior synechiae
AAU - Management

• **Subdue inflammation**
  o Topical corticosteroids (g.predforte)

• **Prevent posterior synechiae**
  o Mydriatics (g.cyclopentolate)

• **Watch for elevated IOP**
  o Topical ocular hypotensives (g.timolol)
Scleritis / Episcleritis
Scleritis versus episcleritis

**Scleritis**
- Relatively uncommon
- Severe boring pain
  - “wakes from sleep”

**Episcleritis**
- Relatively common
- Mild ocular discomfort
Scleritis

- Relatively uncommon
- Severe boring pain
- Focal injection of deep scleral vessels

Episcleritis

- Relatively common
- Mild ocular discomfort
- Focal injection of episcleral vessels
Scleritis

- **Systemic Associations**
  - Herpes Zoster Ophthalmicus
  - Severe Rheumatoid Arthritis
  - Can lead to blindness if untreated
    - po. prednisone

Episcleritis

- Generally no systemic associations
- Usually requires no treatment other than symptomatic relief
  - g. lubricants/g. voltaren
Subconjunctival Haemorrhage
Subconjunctival haemorrhage

- **Unilateral localised sharply extravasated blood**
  - (bleeding under conjunctiva)

- **Associations**
  - Severe coughing
  - Valsalva manoeuvre
  - Anticoagulants
  - Systemic hypertension
Blunt Ocular Trauma

- Orbital fractures

Sharp Ocular Trauma

- Lid laceration
Blunt Ocular Trauma

- Orbital fractures
- Contusion

Sharp Ocular Trauma

- Lid laceration
- Corneal abrasion/FB

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Blunt Ocular Trauma

• Orbital fractures
• Contusion
• Hyphaema
  • Rebleed 20%; Glaucoma 7%

Sharp Ocular Trauma

• Lid laceration
• Corneal abrasion/FB
• Penetrating injury/intraocular FB
Sharp Ocular Trauma

- Lid laceration
- Corneal abrasion/FB
- Penetrating injury/ intraocular FB

Sharp Ocular Trauma

- Orbital fractures
- Contusion
- Hyphaema
- Iris damage
- Lens damage
- Vitreous haemorrhage
- Retinal haemorrhage
- Retinal detachment
- Globe rupture
Protection is better than cure!

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Conclusions

• **Systematic Approach**
  • History
  • Vision
  • Discharge
  • Appearance
  • Pupils

• **BE AWARE OF SIGHT THREATENING CONDITIONS!**
The End

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