The Acute Red Eye

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Case Scenario Links

The Acute Red Eye

• Acute or chronic red eye (Oph01)
• Acute trauma to the eye (Oph02)
• Child with red swelling around one eye (Oph10)
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

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

History

Vision

Discharge

Appearance

Pupils

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

- History
- Vision
- Discharge
- Appearance
- Pupils
Systematic Approach to Diagnosis

1. History
2. Vision
3. Discharge
4. Appearance
5. Pupils

- 1. Miosis
- 2. Mid-dilated
- 3. Sluggish/no reaction to light
Causes

• Conjunctivitis
• Subconjunctival haemorrhage
• Keratitis
• Episcleritis
• Scleritis
• Acute anterior uveitis
• Acute angle closure crisis
• Ocular trauma
CONJUNCTIVITIS
Conjunctivitis - Types

• Infective
  – Viral
  – Bacterial
  – Chlamydial

• Allergic
  – Seasonal (hayfever) / Perennial (dust mites)
  – Vernal
  – Atopic
Conjunctivitis

Associated features

- Viral:
  - URTIs
  - Pre-auricular lymphadenopathy

- Allergic:
  - Atopy/hay fever
  - 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

Viral
Conjunctivitis

History
Vision
Discharge
Appearance
Pupils

Allergic
Conjunctivitis

History

Vision

Discharge

Appearance

Pupils

Bacterial
Conjunctivitis

- History
- Vision
- Discharge
- Appearance
- Pupils
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

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

- Decreased
  - Especially if involves visual axis
Keratitis

- Watery, purulent
  - (depends on cause)
Keratitis

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

- History
- Vision
- Discharge
- Appearance
- Pupils

Bacterial
Keratitis

History
Vision
Discharge
Appearance
Pupils

Fungal
Keratitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Viral
Keratitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Normal
Keratitis- Management

• Isolate responsible organism
  – Corneal scrape

• Intensive treatment and close followup
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

History

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

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

- None
Acute angle closure crisis

**History**

**Vision**

**Discharge**

**Appearance**

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

**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

(Visual representation of an eye with a focus on the optic disc and retinal vessels.)
Acute angle closure crisis

- History
- Vision
- Discharge
- Appearance
- Pupils

Mid-fixed, dilated
Acute angle closure crisis

Lesson of the Week

Acute glaucoma presenting with abdominal symptoms

N J Watson, G R Kirkby

Acute angle closure glaucoma is a rare condition that affects 0.1% of the population aged over 50 years. Patients usually present with sudden onset of severe pain in or over the affected eye and reduced vision. They may have had prodromal attacks of aching, blurred vision, and haloes round lights, particularly at night. The eye is red, with oedema of the cornea and a fixed semidilated pupil, and is hard when palpated.

Rarely patients present not with severe eye pain but with abdominal symptoms predominating that result from effects of an appreciable rise in intraocular pressure. The symptoms are prostration, nausea, vomiting, and pain. Patients and their doctors may therefore ignore serious eye disease.

We describe two patients who illustrate this unusual presentation of the disease.

The patient with abdominal pain and a red eye may have glaucoma

frequency of micturition. Urinary tract infection was diagnosed at her day hospital and by her general practitioner. Her right eye was uncomfortable and conjunctivitis suspected. She was prescribed systemic antibiotics and chloramphenicol eye drops. Two days later the left eye became red, and it was assumed that the conjunctivitis had spread. Chloramphenicol was then prescribed for both eyes. A midstream urine specimen contained no cells and grew no organisms.

Two days later she fell and broke her arm, and it was established that this was the result of poor eyesight. An opinion was sought from an ophthalmologist. Her visual acuities were hand movements right and count fingers left. She had oedema of the cornea with fixed semidilated pupils in both eyes. The intraocular pressures were 9.6 kPa right and 7.9 kPa left. The fundus was not visible. Bilateral acute angle closure glaucoma was diagnosed.
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

- Moderate aching pain
- Photophobia
- Past history (esp if HLA-B27)
- Systemic symptoms
Acute anterior uveitis

- Blurred
Acute anterior uveitis

History

Vision

Discharge

Appearance

Pupils

• None
Acute anterior uveitis

- Circumcorneal injection
- Clear cornea
Acute anterior uveitis

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

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

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

Miotic/sluggish response to light
Acute anterior uveitis

- History
- Vision
- Discharge
- Appearance
- Pupils

Posterior synechiae
AAU - Management

• Subdue inflammation
  – Topical corticosteroids (g.predforte)

• Prevent posterior synechiae
  – Mydriatics (g.cyclopentolate)

• Watch for elevated IOP
  – Topical ocular hypotensives (g.timolol)
SCLERITIS/EPISCLERITIS
Scleritis

• Relatively uncommon

Episcleritis

• Relatively common
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

• Associations
  – Herpes Zoster Ophthalmicus
  – Severe Rheumatoid Arthritis

Episcleritis

• Generally no associations
Scleritis

- Associations
  - Herpes Zoster Ophthalmicus
  - Severe Rheumatoid Arthritis

- Can lead to blindness if untreated
  - po.prednisone

Episcleritis

- Generally no associations

- Usually requires no treatment
  - g.lubricants/g.voltaren
SUBCONJUNCTIVAL HAEMORRHAGE
Subconjunctival haemorrhage

- Unilateral localised sharply extravasated blood
  - (bleeding under conj)
- Associations
  - Severe coughing
  - Valsalva manoeuvre
  - Anticoagulants
  - Systemic hypertension
OCULAR TRAUMA
Blunt Ocular Trauma

- Orbital fractures

Sharp Ocular Trauma

- Lid laceration
Blunt Ocular Trauma

- Orbital fractures
- Contusion

Sharp Ocular Trauma

- Lid laceration
- Corneal abrasion/FB
**Blunt Ocular Trauma**

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

**Sharp Ocular Trauma**

- Lid laceration
- Corneal abrasion/FB
- Penetrating injury/ intraocular FB
Blunt Ocular Trauma

- Orbital fractures
- Contusion
- Hyphaema
- Iris damage
- Lens damage
- Vitreous haemorrhage
- Retinal haemorrhage
- Retinal detachment
- Globe rupture

Sharp Ocular Trauma

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

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

• BE AWARE OF SIGHT THREATENING CONDITIONS!
The End

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