Education Session Seven

Red Eye

EYE EDUCATION FOR EMERGENCY CLINICIANS
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Modules originally designed for emergency nurses as a component of the Eye Emergency Manual Project. 
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Aims and Objectives

• To have an understanding of the causes of the red eye

• Objectives
  – To be able to differentiate between common presentations of the red eye
  – To manage red eyes appropriately
Introduction

Normally the eye has a strong resistance to the damaging effects of even the most virulent of micro-organisms. Resistance is based on a number of factors:

• Normal tear production
• Stable tear film
• Normal blink reflex, full lid closure
• Corneal sensation, intact corneal epithelium
ALLERGIC CONJUNCTIVITIS

• Itchy, watery bilateral with papillary lesions on inside of eyelids. Acute or Chronic.

TREATMENT
• Identify cause
• Cool compresses
• Lubricants without preservative
• Routine referral to ophthalmologist for children or if not well controlled.
BACTERIAL CONJUNCTIVITIS

- Gritty sensation to tender inflamed conjunctiva
- No corneal or anterior chamber involvement
- Purulent discharge
- Usually bilateral
BACTERIAL CONJUNCTIVITIS (cont)

Treatment
- Antibiotic eye drops / ointment,
- no eye pad
- meticulous hygiene

Refer if
- Vision is affected
- Does not respond to treatment after 2 days
VIRAL CONJUNCTIVITIS

• Gritty, watery eye with associated lid swelling
• Recent upper respiratory tract infection or contact history
• Uni or bilateral. Common in children
• May develop late keratitis with blurred vision
VIRAL CONJUNCTIVITIS (cont)

TREATMENT

• Symptomatic, no pad
• Lubricants, cool compresses
• Never steroids
• Prevent cross infection. May take weeks to settle
• Refer if photophobic or reduced visual acuity (VA), or persistent for more than three weeks
# Conjunctivitis

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<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Bacterial</th>
<th>Viral (usually adenoviral)</th>
<th>Allergic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redness</td>
<td>Itching</td>
<td>Itchy</td>
<td></td>
</tr>
<tr>
<td>FB sensation</td>
<td>Burning</td>
<td>Watery discharge</td>
<td></td>
</tr>
<tr>
<td>Itching is less</td>
<td>May have recent URTI</td>
<td>History of allergies</td>
<td></td>
</tr>
<tr>
<td>Irritating superficially sore</td>
<td>Starts one eye</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Within 2 days fellow eye affected</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Signs</th>
<th>Bacterial</th>
<th>Viral (usually adenoviral)</th>
<th>Allergic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purulent discharge</td>
<td>Conjunctival follicles</td>
<td>Chemosis</td>
<td></td>
</tr>
<tr>
<td>Chemosis</td>
<td>Watery mucus discharge</td>
<td>Red oedematous eyelids</td>
<td></td>
</tr>
<tr>
<td>Caution: Gonococcal Conjunctivitis (sudden onset 12 – 24 hrs)</td>
<td>Red oedematous eyelids</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Bacterial</th>
<th>Viral (usually adenoviral)</th>
<th>Allergic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibiotics – swab</td>
<td>Lubricants</td>
<td>Compresses – cool</td>
<td></td>
</tr>
<tr>
<td>Lid hygiene</td>
<td>Cool compresses</td>
<td>Lubricants without preservatives</td>
<td></td>
</tr>
<tr>
<td>Highly contagious – stress importance of personal hygiene – to avoid cross infection</td>
<td>Antibiotics if required</td>
<td>Remove irritant if known</td>
<td></td>
</tr>
</tbody>
</table>

- **Antibiotics** for contagious agents.
- **Lid hygiene** to prevent irritation.
- **Compresses – cool** to reduce swelling.
- **Lubricants** for dryness.
SUBCONJUNCTIVAL HAEMORRHAGE

- Usually localised haemorrhage that appears spontaneously; unilateral. Pain free. Vision unchanged.

TREATMENT
- Reassurance
- Gradually reabsorbs
- Check BP / anticoagulant levels
- If recurrent, exclude bleeding tendency
- Refer if pain develops
- If traumatic and extends backwards may indicate orbital fracture / penetrating eye injury (PEI)
EPISCLERITIS & SCLERITIS

• Mild to severe pain. Localised redness and swelling of conjunctiva. Tender eye. No discharge. VA may decrease.

TREATMENT

Urgent referral to ophthalmologist.
HERPES SIMPLEX KERATITIS


TREATMENT

Anti-viral agents. No pad. No steroids.
Refer to ophthalmologist
CORNEAL ULCERS

• Inflamed, painful eye
• Anaesthetic drop and fluorescein staining
• Exclude foreign body - corneal or subtarsal, eye lash irritation
• Look for presence of hypopyon – indicating an intraocular infection (endophthalmitis)
• Differentiate from abrasion (ulcer deeper, often round)
• Differentiate from dendritic ulcer (Herpes Simplex Virus infection)
• May be related to contact lens
CORNEAL ULCERS (cont)

- Urgent ophthalmic referral
- Likely hospital admission
- No eye pad. Use shield prn.
- If ocular history indicative of intraocular foreign body (IOFB) – CT scan required

Dendritic ulcer
ACUTE GLAUCOMA

• Pain often severe
• Nausea / headache
• Blurred vision
• Usually unilateral
• Red eye
• Steamy cornea
• Fixed oval semi-dilated pupil
• Elevated intra ocular pressure (IOP)
• Shallow anterior chamber
GLAUCOMA (cont)

- Urgent referral to ophthalmologist
- Aim is to lower IOP as soon as possible
- Medication - oral Diamox, Glycerol, IV mannitol as ordered
- Eye drops to constrict pupil and lower IOP – i.e. Pilocarpine, Iopidine
- Will need bilateral laser / surgery
ACUTE IRITIS

• Pain, aching eye, photophobia
• Anterior chamber may appear cloudy from white cells / flare
• Ophthalmic referral
• Mydriatic drops
• Analgesia
• Steroid Eye Drops - only used after ophthalmic assessment
### Differential Diagnosis of the Red Eye

<table>
<thead>
<tr>
<th></th>
<th>Conjunctivitis</th>
<th>Iritis</th>
<th>Acute Glaucoma</th>
<th>Keratitis (foreign body abrasion)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discharge</strong></td>
<td>MARKED</td>
<td>None</td>
<td>None</td>
<td>Slight or none</td>
</tr>
<tr>
<td><strong>Photophobia</strong></td>
<td>None</td>
<td>MARKED</td>
<td>Slight</td>
<td>Slight</td>
</tr>
<tr>
<td><strong>Pain</strong></td>
<td>None</td>
<td>Slight to marked</td>
<td>MARKED</td>
<td>MARKED</td>
</tr>
<tr>
<td><strong>Visual Acuity</strong></td>
<td>Normal</td>
<td>Reduced</td>
<td>Reduced</td>
<td>Varies with site of the lesion</td>
</tr>
<tr>
<td><strong>Pupil</strong></td>
<td>Normal</td>
<td>SMALLER or same</td>
<td>LARGE OVAL and FIXED</td>
<td>Same or SMALLER</td>
</tr>
</tbody>
</table>
CONCLUSION

• Remember – beware of the red eye

• More mistakes are made from not looking, rather than not knowing

• If you’re not sure, don’t and
• If you don’t know, ask.