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. December 2008
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

<table>
<thead>
<tr>
<th></th>
<th>Bacterial</th>
<th>Viral (usually adenoviral)</th>
<th>Allergic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms</strong></td>
<td>• Redness • FB sensation • Itching is less • Irritating superficially sore</td>
<td>• Itching • Burning • FB sensation • May have recent URTI • Starts one eye • Within 2 days fellow eye affected</td>
<td>• Itchy • Watery discharge • History of allergies</td>
</tr>
<tr>
<td><strong>Signs</strong></td>
<td>• Purulent discharge • Chemosis • Caution: Gonococcal Conjunctivitis (sudden onset 12 – 24 hrs)</td>
<td>• Conjunctival follicles • Watery mucus discharge • Red oedematous eyelids</td>
<td>• Chemosis • Red oedematous eyelids</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td>• Antibiotics – swab • Lid hygiene • Highly contagious – stress importance of personal hygiene – to avoid cross infection</td>
<td>• Lubricants • Cool compresses • Antibiotics if required • Highly contagious Personal hygiene</td>
<td>• Compresses – cool • Lubricants without preservatives • Remove irritant if known</td>
</tr>
</tbody>
</table>
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.