James talks to Dr Jay Yohendran about the approach to the management of patients with acute red eye in the emergency department, including the most common causes of red eye.

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### About Dr Jay Yohendran

Dr Jay Yohendran is a comprehensive ophthalmologist with a subspecialty interest in glaucoma and refractive cataract surgery. Dr Jay Yohendran graduated with Honours from the University of Sydney Medical School in 2001. Prior to this he completed a Bachelor of Medical Science degree at Sydney University, and later a Masters of Public Health at NSW University. After completing ophthalmology training at the Royal Victorian Eye and Ear Hospital in Melbourne, Dr Yohendran returned to Sydney to complete his Fellowship in comprehensive ophthalmology at Royal Prince Alfred Hospital. He has also completed a twelve-month Fellowship in Glaucoma at Sydney Eye Hospital. Dr Yohendran has a special interest in refractive cataract surgery, and has completed a Graduate Diploma in Refractive Surgery at Sydney University.

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### Red eye

*With Dr Jay Yohendran, Ophthalmology VMO at Royal Prince Alfred Hospital, New South Wales, Australia*

### Case

**A patient presents to the emergency department with a red eye.**

1. **History:**

   - One or both eyes?  
   - Associated eye symptoms? (e.g. pain, discharge consistency and colour)  
   - Non-ocular symptoms? (e.g. nausea, headache, flu-like symptoms)  
   - Recent trauma?  
   - Recent intraocular surgery – within a week?  
   - History of cold sores or eye ulcers?  
   - Contact lens use?
2. General examination:

- Facial swelling
- Pre-auricular lymph nodes (often swollen in infective process)
- Pattern of redness

3. Eye examination:

- Eye movements
  - Will tell you if the orbit is affected as well as the eye (e.g. orbital cellulitis)
- Visual acuity
  - Test each eye individually with glasses on
  - NB: If the patient can read 4 of 6 letters on line 6/9, then mark this as 6/9 minus 2

4. Slit lamp examination:

- Ensure that the lamp is set up, turned on and you are both comfortable before you start
- Start with low magnification, and a thin beam of white light to get an overview of the eye
- Examine the eye lid, and check underneath for a subtarsal foreign body
- Examine the conjunctiva
- What is the pattern of redness? Is it the entirety or just a small area of conjunctiva? Is it just the conjunctiva surrounding the cornea?
- Examine the cornea
- Is there any infiltrate (area of pus or opacity) on the cornea?
- Assess the pupil size and shape (mid-dilated pupil in acute angle closure glaucoma; tear drop shape in traumatic eye injury)
- Apply fluorescein stain
- Change from white to blue light, and increase intensity to look for green staining
- Assess pattern of stain, looking for dendritic, linear or diffuse
- Examine the anterior chamber for uveitis
5. Should you use anaesthetic eye drops when examining a painful red eye?

- Yes, in an emergency department setting, to help you assess the eye
- It can help with diagnosis such as corneal ulcer or foreign body
- Never give the patient anaesthetic to go home with because it may mask worsening symptoms

6. What are the common causes of red eye?

- Conjunctivitis
  - Bacterial - usually uni-ocular with yellow discharge, infectious contacts
  - Viral - usually bilateral with preceding flu-like symptoms and watery discharge
- Dendritic ulcers
  - History of cold sores
  - Immunocompromised patients
  - Dendritic pattern on fluorescein staining
- Acute angle closure glaucoma
  - Typically older patient (60s and older)
  - More common in women
  - Severe pain
  - Mid-dilated pupil
  - Cloudy cornea
  - Increased intraocular pressure
- Microbial keratitis
  - More common in people who wear contact lenses
  - Do they swim with their contact lenses in?
  - Corneal-epithelial defect and white infiltrate seen on fluorescein stain
  - Require strong topical antibiotics and possibly admission to hospital

7. Red flags for red eye

- Decreased visual acuity
- Uni-ocular
8. When do you need to call the eye registrar?

- Red eye with decreased visual acuity
- Cloudy cornea
- Central corneal foreign body

9. General tip

- Practice using the slit lamp
- When removing corneal foreign bodies, use topical anaesthetic to ensure that the patient is comfortable and as still as possible, and ask them to fixate with their other eye on something behind you
- First start with a cotton bud to practice before you approach with a needle

Resource

- Eye Emergency Manual – An Illustrated Guide

Related Podcasts

- Acute visual loss

Tags: #acute angle closure glaucoma,#conjunctiva,#conjunctivitis,#cornea,#dendritic ulcers,#eye disease,#eye redness,#glaucoma,#microbial keratitis,#ophthalmologist,#ophthalmology,#red eye,#redness,#retina
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