# Ophthalmology





## Orbital cellulitis

- a systemically unwell patient
- proptosis
- peri-ocular swelling and erythema
- tenderness over the sinuses
- ocular nerve compromise (reduced vision, impaired colour vision or abnormal pupils)
- restricted and painful eye movements

In peri-orbital cellulitis, which usually follows an abrasion, there is no pain or restriction of eye movement

Treatment is with **IV cefotaxime** until afebrile, then amoxycillin/clavulanate for 7–10 days for peri-orbital cellulitis and for orbital cellulitis, IV cefotaxime + di(flu) cloxacillin together followed by amoxycillin/clavulanate (o) 10 days





### Conjunctivitis "Pink eye"

Risk factors: exposure to someone infected, rubbing eyes, contact lenses.

#### Symptoms:

- Marked, diffuse redness
- Watery, stringy, purulent discharge





#### Treatment

- Viral
  - Artificial tears, cool compresses, antihistamines
- Bacterial
  - Erythromycin ophthalmic ointment
  - Or Polytrim, Azithromycin, Ciprofloxacin
- Allergic
  - Self-limiting
  - Zyrtec, Claritin

### Scleritis and episcleritis

### Management

- Corticosteroids or





Episcleritis Salmon-pink or red discoloration

Scleritis Violaceous or purplish discoloration

### Episcleritis:

- □ /itching
- 🖞 a red and sore eye
- no discharge
- no watering
- vision normal (usually)
- often sectorial
- Usually self-limitingScleritis:
- 🛛 painful
- Ioss of vision
- urgent referral

### Corneal abrasion

#### Causes:

- Trauma
- Contact lens wear/injury
- Infection—microbial keratitis:
  - bacterial (e.g. *Pseudomonas* [contact lens])
- Neurotrophic (e.g. trigeminal nerve defect)
- Immune-related (e.g. rheumatoid arthritis)
- Spontaneous corneal erosion
- Chronic blepharitis
- Overexposure (e.g. eyelid defects)

Diagnosis is best performed with **a slit** lamp using a cobalt blue filter and flourescein staining

#### Symptoms:

- Ocular pain
- Foreign body sensation
- Watering of the eye (epiphora)
- Blepharospasm
- Blurred vision

#### Management

- Check for a foreign body
- Treat with chloramphenicol 1% ointment ± homatropine 2% (if pain due to ciliary spasm)
- Double eye pad (if not infected)
- A 6 mm defect heals in 48 hours



### Uveitis (iritis)

#### Clinical feature

- Eye redness, esp. around the edge of the iris
- Eye discomfort or pain
- Increased tearing
- Blurred vision
- Sensitivity to light
- Floaters in the field of vision
- Small pupil

Causes include autoimmune-related diseases such as the seronegative arthropathies (e.g. ankylosing spondylitis), *SLE, IBD, sarcoidosis and some infections* (e.g. toxoplasmosis and syphilis)

Diagnosis: Slit-lamp examination an increase in the protein content of the aqueous (flare) in the anterior chamber

Keratic precipitates it's when WBC display on the back surface of the conea.



#### Treatment

- pupil dilatation with atropine drops
- topical steroids to suppress inflammation
- systemic corticosteroids

### Cataract

Causes: advancing age, diabetes mellitus, smoking cigarettes, steroids (topical or oral), radiation: long exposure to UV light, TORCH organisms → congenital cataracts, trauma, uveitis, dystrophia myotonica, galactosaemia

### Symptoms:

- Blurred vision:
- reading difficulty
- difficulty in recognising faces
- problems with driving, especially at night
- difficulty with television viewing
- reduced ability to see in bright light
- may see haloes around lights





#### Diagnosis

- Reduced visual acuity (sometimes improved with pinhole)
- Diminished red reflex on ophthalmoscopy
- A change in the appearance of the lens

#### Management

The removal of the cataractous lens and optical correction to restore vision with an intraocular lens implant

### Cataract



### Hypertensive retinopathy

- Risk factors increasing age, obesity, family history, alcohol, smoking
- Systemic hypertension directly affects the retinal, choroidal and optic nerve vasculature
- Diagnosis: fundoscopic exam or digital retinal photography, findings usually bilateral
- Treatment: blood pressure control





### Retinal vessel occlusion

#### Central retinal artery occlusion

- Sudden loss of vision like a 'curtain descending' in one eye
- Vision not improved with 1 mm pinhole
- Usually no light perception

### Ophthalmoscopy

- Initially normal
- May see retinal emboli
- Classic 'red cherry spot' at macula

#### Management

- massage globe digitally through closed eyelids (use rhythmic direct digital pressure)—may dislodge embolus
- rebreathe carbon dioxide (paper bag) or inhale special CO2 mixture (carbogen)
- intravenous acetazolamide (Diamox) 500 mg
- refer urgently (less than 6 hours)—exclude temporal arteritis



### Retinal vessel occlusion

#### Central retinal vein thrombosis

- Sudden loss of central vision in one eye (if macula involved): can be gradual over days
- Vision not improved with 1 mm pinhole

Ophthalmoscopy shows swollen disc and multiple retinal haemorrhages, 'stormy sunset' appearance.

#### Management

No immediate treatment is effective.

- fibrinolysin treatment
- Laser photocoagulation may be necessary in later stages





### Glaucoma

Normal IOP 10-21mmHG

### Opén-angle glaucoma

- Gradual increases resistance through the trabecular meshwork
- Risk factors: advancing age, family history, black ethnic origin, myopia
- Symptoms: asymptomatic, loss of peripheral vision, fluctuating pain, blurred vision, halos surrounding lights (worse at night)

### Closed-angle glaucoma

- The iris bulges forward and seals off the trabecular meshwork from the anterior chamber
- Risk factors: increasing age, female, family history, Chinese/east Asian ethnic origin, shallow anterior chamber, medications (Noradrenalin, oxybutynin, amitriptyline)
- Symptoms: severe painful red eye, blurred vision, patient >50 years, hazy cornea, fixed semidilated pupil, eye feels hard, halos around lights, associated headache, nausea and vomiting

### Glaucoma

Open-angle glaucoma

### Management

- **timolol or betaxolol** (beta blockers)
- Iatanoprost (or other prostaglandin analogue) drops, once daily
  - pilocarpine drops
- dipivefrine drops
- brimonidine drops
- acetazolamide (oral diuretics)
- Surgery or laser therapy for failed medication

### Closed-angle glaucoma

- Urgent ophthalmic referral
- Initial management: acetazolamide (Diamox) 500 mg IV and pilocarpine 4% drops to constrict the pupil or pressure-lowering drops
- Surgery: laser iridotomy



### Glaucoma

### **Investigations**

- Tonometry (Goldmann applanation tonometry)
  - Upper limit of normal is 22 mmHg
- Ophthalmoscopy
  - Optic disc cupping >30% of total disc area
- Visual fields
  - peripheral visual loss





### Keratitis

- 7 Keratitis is inflammation of the cornea
- pain, impaired eyesight, photophobia (light sensitivity), red eye and a 'gritty' sensation
  - Causes: viral (HSV, Herpes zoster keratitis), bacterial (staph), fungal, amoebic (Acanthamoebic keratitis), parasitic (Onchocercal keratitis,)



- Treatment
- depends on the cause of the keratitis
- antibacterial, antifungal, or antiviral therapyantibacterial, antifungal, or antiviral therapy

## Blepharitis

Associated with secondary ocular effects such as styes, chalazia and conjunctival or corneal ulceration

#### The two types are:

- Anterior around the skin, eyelashes, and lash follicles
- Posterior blepharitis involves the meibomian gland orifices, meibomian glands, tarsal plate, and blepharo-conjunctival junction
  - anterior blepharitis—staphylococcal
  - posterior blepharitis—seborrhoeic and rosacea

#### **Clinical features**

- Persistent sore eyes or eyelids
- Irritation, grittiness, burning, dryness and 'something in the eye' sensation
- Lid or conjunctival swelling and redness
- Crusts or scales around the base of the eyelids
- Discharge or stickiness, especially in morning
- Inflammation and crusting of the lid margins

### Blepharitis

#### Management

#### Anterior blepharitis

- A systematic and long-term commitment to a program of eyelid margin hygiene
- Or apply chloromycetin 1% ointment once or twice daily for 4 weeks and review Posterior blepharitis
- Eyelid hygiene
- Ocular lubricants
- short-term use of a mild topical corticosteroid ointment
- antibiotic ointment tetracycline hydrochloride 1% or framycetin 0.5% or chloramphenicol 1% ointment to lid margins 3–6-hourly
- systemic antibiotics: doxycycline 50 mg daily for at least 8 weeks (erythromycin for children
- <8 years), or flucloxacillin may be required for lid abscess.</p>

## Subconjunctival hemorrhage

- A beefy red localised haemorrhage with a definite posterior margin, it is pain free.
- Usually causes by sudden increase in intrathoracic pressure such as coughing and sneezing
- No local therapy is necessary. The haemorrhage absorbs over 2 weeks.



June 25







### Hypopyon and hyphema





inflammatory cells in the anterior chamber of the eye. The most common cause of hypopyon is endophthalmitis. Blood within the aqueous fluid of the anterior chamber. The most common cause of hyphema is trauma

