GP Handbook v8.2

Ophthalmology

BLURRED VISION

ALWAYS REFER

- patients complaining of multiple floaters, especially if associated with flashing lights (they may have a posterior vitreous detachment, which carries a 5% chance of causing a retinal tear)
- those who report appearance of a single large blob, which then fragments (they may have a vitreous haemorrhage)
- if there is a field loss
- if the vision is deteriorating

Be more ready to refer if:

- there is a family history or a personal history of retinal tear or detachment
- the patient has high myopia
- there is a history of cataract surgery

Cataract

- Exclude retinal pathology. If in doubt, refer so that co-existing eye diseases can be detected before the cataract obscures the fundus.
- Assess visual acuity.
- Exclude diabetes.
- Refer when loss of vision is interfering with the quality of life (NOT when the cataract is ripe). For most people this occurs when the visual acuity in the better eye is less than 6/18. Glare will result in a visual acuity worse than that tested in the clinic. Those who wish to continue driving, or who are engaged in work or hobbies which involve fine work, will need surgery earlier.
- Be aware that 20% of patients develop opacification of the posterior capsule within 2 years of operation. These patients need laser treatment.

Age-Related Macular Degeneration

This occurs in elderly patients who present with progressive loss of central vision and, frequently, distortion effects. The vision is best in dim light. The eye appears normal except for the macular changes.

All patients need proper ophthalmological assessment to confirm the diagnosis and to assess suitability for laser photocoagulation. This must be done early to be of benefit.

Refer urgently those with sudden deterioration.

Chronic Simple Glaucoma

Chronic simple glaucoma (open angle glaucoma) results when the trabeculum becomes blocked over several years, leading to gradual increase in intraocular pressure and worsening of vision. Affecting 2% of people over the age of 40, chronic simple glaucoma is often asymptomatic in the early stages. By the time loss of visual acuity occurs, disc cupping and field loss are likely to be advanced.

Visual field testing should be included in the eye examination during our daily practice.

Fundoscopy for early glaucomatous cupping is a better diagnostic indicator but requires more skills.

Risk factors

- old age
- positive family history
- high myopia
- diabetes mellitus
- steroid treatment (topical or systemic)
- poorly controlled hypertension
- eye injury
- migraine and vasospasm

Treatment

- Early detection and referral of suspected cases to ophthalmologists will help preserve vision, prevent blindness and improve quality of life.
- GPs can help in promoting the importance of good drug compliance, regular general and eye follow-up visits and good control of systemic factors eg blood pressure and sugar level.
- Eye drops: to lower the intraocular pressure by increasing the flow of aqueous out through the trabeculum, or by reducing the production of aqueous. A beta-blocker (eg timolol or pilocarpine) is often tried first. Beta-blockers can cause itching and dry eyes.
- Other types of drugs are available in drop and tablet forms.
- Laser treatment: to open holes in the trabeculum.
- Surgery: trabeculectomy in case of failed medical and laser treatment.
- Some patients still require medical treatment even after laser treatment or surgery.

Common causes of chronic visual loss in the elderly

- cataract
- glaucoma
- age-related macular degeneration
- diabetic retinopathy

CONJUNCTIVITIS

Management of conjunctivitis can be improved by practising the following:

- Specify in the notes what you think is the aetiology – is it allergic, or bacterial, or viral?
- Do NOT prescribe ANY eye drop preparations 3 or 4 times a day – they probably do not work at this dose frequency
- Always ask the patient to block the tear duct by compressing on the area right medial to the medial angle of the affected eye for about 1 minute after instilling the eye drop onto the eye.
- Artificial tears and normal saline eyedrops have no place in treating conjunctivitis.

Acute Conjunctivitis

- Patients usually do not complain of pain; they complain about 'sandy sensation'.
- Infective and allergic conjunctivitis are the 2 most common causes.
- Presentation: redness and mucopurulent discharge.

Bacterial conjunctivitis
Chloramphenicol 0.5% eye drop q1h for 1/7, then q2h for 1/7, then qid for1/7, together with Cloramphenicol eye ointment hs for 3/7
Follow-up the patient in 48hrs. Steroid-containing eye drop (eg Dextracin drops 2 qid) may help in the first 48hrs in the severely inflamed cases.

Viral conjunctivitis
Same as above to prevent supra-infection by bacteria, but steroid-containing eyedrops are contraindicated.

Allergic Conjunctivitis

- Oral antihistamine(s)
- Symptomatic eye drop
- Avoid wearing contact lenses until the redness subsides
- Dextracin drops 2 qid for 3 days in more severe cases
- Patanol (olopatadine) eye drop 1 bd for adults and children 3 years and older
- Refer in resistant cases

NON-PENETRATING EYE INJURY

Corneal Abrasion / Ulcer

A history of injury can usually be obtained. Iatrogenic corneal abrasion can occur without an obvious cause, and can happen during sleep when the patient is waken up by the pain. This may be related to involuntary eyeball movements during REM sleep.

Diagnosis: Positive staining with fluorescein strips.

Treatment

- Short acting cycloplegic (stat only).
- Antibiotics eyedrops/ointment.
- Eye packing.

Notes

- Superficial ulcers usually heal within 24-48 hours.
- Local anaesthetics eyedrops delay re-epithelization.
- Steroid eye drops may predispose to infection.

Foreign Bodies

Management

- Irrigation with normal saline.
- Remove with a moist cotton tip under local anaesthesia (LA eyedrop).
- If the foreign is adherent, carefully remove it with a hypodermic needle.
- Central foreign body over the visual axis should better be managed by ophthalmologist.

Refer to an ophthalmologist

- if the lesion is too deep into the cornea
- if there is a rust ring
- if the injury is more than a few days old with re-epithelialization already underway

PAINFUL EYES

Common Diagnoses

- Trauma
- Foreign body
- Corneal abrasions and ulceration
- Conjunctivitis (most commonly viral)
- Acute glaucoma
- Dry eye symdrome
- Blepharitis
- Episcleritis

History & Physical Examination

- Ask about: injury, vision, discomfort, discharge and photophobia.
- Both eyes should be examined.
- Evert both the upper and lower eye lids for proper inspection.
- Preauricular lymph node is typically present in viral conjunctivitis.
- Conjunctivitis in a patient less than 1 month old is usually caused by Chamydia trachomatis (50%).
- Wash hands thoroughly after examination.

When Prescribing Eye Drop

Always ask the patient to block the tear duct by compressing on the area just medial to the medial angle of the affected eye for about 1 minute after instilling the eyedrop onto the eye. This way the eye drop will stay inside the eye to be treated longer and in a higher concentration.

Acute Conjunctivitis

Please refer to the chapter "Conjunctivitis".

Acute Glaucoma

Please cross refer to the chapter "Blurred Vision".

- Patient >50 years old
- Pain in one eye
- Impaired vision
- Increased intraocular pressure
- Fixed semi-dilated pupil
- **URGENT OPHTHALMOLOGICAL REFERRAL IS REQUIRED**

Stye & Chalazion

- **THE MOST EFFECTIVE TREATMENT IS HOT-COMPRESS**, with heat as much as the patient can tolerate, for a duration as long as the patient can continue.
- An oral antibiotic effective against *Staphylococcus aureus* is usually given.
- Analgesia can be provided by paracetamol and/or an NSAID.
- Antibiotic eye drops and eye gel are usually of little, if any, value.
- The patient is followed up in 48 hours and if the "abscess" persists, surgical intervention (incision and curettage under LA) should be considered.

RED EYES

Differential Diagnoses

- Conjunctivitis: infectious / non-infectious
- Keratitis: infectious / non-infectious
- Uveitis
- Episcleritis / scleritis
- Acute glaucoma
- Eyelid abnormalities
- Orbital disorders: preseptal and orbital cellulites

History

Non-specific symptoms

- Acute / subacute / chronic / recurrent
- Environmental or work-related
- Tearing/irritation/burning
- Atopy: allergic rhinitis

Specific symptoms

- Itching: allergic conjunctivitis
- Discharge:
- Serous: viral /allergic ocular conditions
- Mucoid: allergy
- Purulent with morning crusting: bacterial
- Copiously purulent: *Neisseria gonorrhoeae*
- Unilateral or bilateral: cross infection / allergy
- Pain, photophobia and blurred vision: consider more serious ocular or orbital disease (uveitis / keratitis /acute glaucoma / orbital cellulitis) where referrals are necessary

Examination

Don't forget

- Pupilary reflex
- Eyelid should be everted properly for examination

Management

If there are no alarming symptoms and signs (pain / photophobia / blurred vision), empirical topical antibiotics may be considered. Antibiotic eye drops are useful even in viral conjunctivitis because it can decrease the risk of bacterial suprainfection.

Please refer to the section 'Acute Conjunctivitis' for more details.

RETINAL TEAR & DETACHMENT

Patients who present to the family practitioner with symptoms of flashes and floaters should be promptly evaluated. A detailed medical history including the following should be sought:

- the onset and duration of the flashes and floaters
- the amount of floaters
- the presence of visual field loss

The patient's visual acuity and confrontation visual field should be obtained and performed. If the flashes or floaters have subsided or if the floaters have not increased in amount, along with an apparently normal eye examination, the patient should be reassured and followed up in a week or 2. These patients should also be warned of the symptoms of a retinal tear and detachment and instructed to seek ophthalmologic help immediately should these symptoms develop.

Red flags (for immediate referral to rule out retinal detachment)

- flashes not improving or getting worse
- sudden and a large amount of floaters
- decrease in vision or visual field loss,

Flashes & Floaters

Flashes

Flashes, or "photopsia", are entoptic phenomenon: sensation of light that is not due to stimulation by light. Flashes may be the result of the vitreous pulling on the retina. Since the photoreceptor cells in the retina are not capable of perceiving pressure, pain, or temperature, the retina responds to the stimulus by sending a signal to the brain in the form of disorganized light. The latter is perceived by the brain as a flash. Flashes may be more noticeable in a dark room and during eye movements.

Flashes may also be the result of migraine. Patients with the condition may experience flashes of light in the form of jagged lines, or "zigzags" (scintillations), in the centre of their field of vision, before the throbbing headache develops. Within the lines, there may be visual field defects or "scotoma". These shimmering lights may last for about 15 minutes. Ocular migraine is the experience of the visual aura of classic migraine but without the subsequent headache.

Floaters

Floaters are commonly referred by patients to as “flying mosquito disease”, and can range from being merely annoying to visually disturbing. They are best perceived when one looks at a bright background, such as a diffusely illuminated wall or the blue sky. Floaters may appear as black lines, specks, or cobwebs.

We should let the patient know that floaters is a symptom rather than a disease, and it is the underlying cause of floaters that determines how serious the clinical situation is:-

(1) Vitreous syneresis: With aging, the vitreous may undergo liquefaction or "syneresis". The collagen fibres in the vitreous coalesce and form pockets of fluid within the vitreous. These aggregated collagen fibrils and other debris are often noted by the patient as floaters. Myopia, previous intraocular surgery and traumatic ocular haemorrhage may result in or exacerbate vitreous syneresis.

(2) Posterior vitreous detachment: With increasing vitreous syneresis, pockets or lacunae form within the vitreous gel. When enough of the lacunae accumulate, the gel collapses and the vitreous

separates from the retina, a condition known as posterior vitreous detachment. The collapse of the vitreous may result in traction to the retina, and the patient may experience the sensation of flashing light. Glial tissue surrounding the optic nerve margin may be avulsed and appears as a large vitreous floater or a Weiss ring. Patients who develop posterior vitreous detachment are at an increased risk of retinal detachments. Acute posterior vitreous detachment is the cause of many retinal tears, which in turn, can result in retinal detachment.

(3) Retinal tear/detachment: When the retina is torn, the torn tissue along with pigmented cells, red blood cells, or aggregated collagen fibrils may be liberated into the vitreous, causing the patient to develop the sensation of floaters.

(4) Vitreous haemorrhage: Vitreous haemorrhage may develop spontaneously or as a result of trauma. The most frequent causes of spontaneous vitreous haemorrhage include proliferative diabetic retinopathy, retinal breaks with or without retinal detachment, posterior vitreous detachment, and retinal neovascularization due to retinal venous occlusion.

(5) Inflammation: A variety of conditions may result in invasion of the vitreous by inflammatory cells. Infections, both exogenous and endogenous, and inflammation such as uveitis, may result in symptoms of floaters.

(6) Others: remnants of the hyaloid artery, asteroid hyalosis, amyloidosis

Flashes, Floaters & Retinal Detachment

Flashes are likely to disappear over a few days or weeks, unless they are associated with a retinal detachment. Most floaters are benign, especially those that one has had for a number of years. They tend to last longer than flashes. However, the brain may learn to ignore the floaters over time, or they may get better on their own.

It is the sudden onset or increase in number of floaters often accompanied by flashes that may be serious. Sometimes there are so many floaters that the patient describes them as “rain”. are so These symptoms suggest a retinal tear or detachment. Patients may also complain of loss of part of their field of vision or a curtain blocking their vision. These patients should be referred to an ophthalmologist as soon as possible for evaluation.

Treatment

A retinal tear without an associated retinal detachment is usually treated by either laser photocoagulation or cryotherapy around the tear. The goal is to cause chorioretinal adhesion around the tear to prevent the retina from detaching beyond the tear. Various surgical techniques including scleral buckling, pars plana vitrectomy, and pneumatic retinopexy are available today for repairing a retinal detachment.

Recognizing the symptoms associated with a retinal tear and retinal detachment allows prompt referral to the ophthalmologist. Today, more than 95% of retinal detachments can be successfully treated, although more than one procedure may be required. Prevention or early diagnosis is important because the rate of successful repair is higher and the visual results are better if the retinal detachment spares the macula.