Sudden Visual Loss

Sudden Painless Visual Loss

A sudden onset of visual loss is alarming to the patient. Only a few diagnoses require immediate ophthalmic referrals for management:

- Central or branch retinal artery occlusion <6h
- Giant cell arteritis
- Any sudden visual loss <6h and the cause can not be established

All other causes of visual loss can be referred within 24 hours.

Most common causes seen in ED:

- Central or branch retinal artery occlusion
- Central or branch retinal vein occlusion
- Vitreous haemorrhage
- Retinal detachment
- Ischaemic optic neuropathy including giant cell arteritis
- Optic neuritis

History

- Transient visual loss like a curtain coming down (suggestive of amourosis fugax)
- Visual loss or field loss preceded by sudden onset floaters and flashing light (photopsia), this is suggestive of retinal detachment
- History of poorly controlled DM and laser treatment to the retina (vitreous haemorrhage)
- Headache +/- jaw claudication in the elderly (giant cell arteritis)
- Pain on eye movement in young patients (optic neuritis)

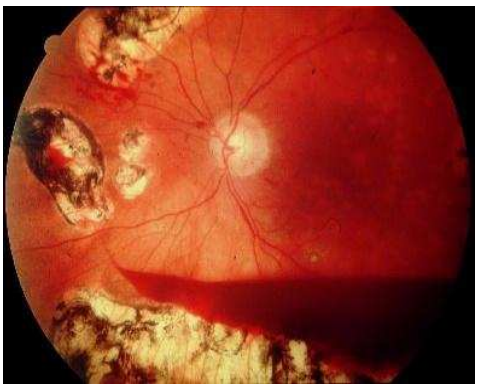
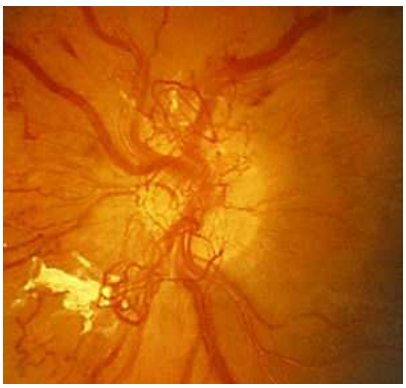
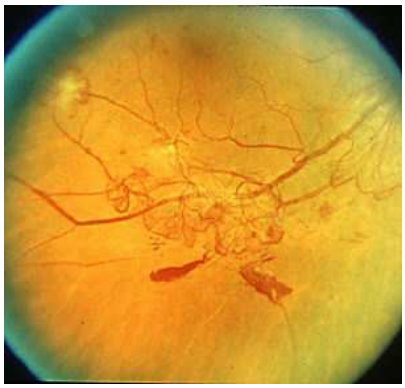
Examination:

- Visual acuity
- Assess the visual field by confrontation some patients may have homonymous hemianopia and yet complain of uniocular visual loss.
- Full ocular examination which should include:
    - pupil reaction for afferent papillary defect (this occurs in optic nerve disorder and extensive retinal pathology.)
    - retinal examination for any obvious signs

Differential Diagnosis

- Central/Branch Retinal Artery Occlusion, TIA
- Central/Branch Retinal Vein Occlusion
- Endophthalmitis
- Episcleritis/Scleritis
- Intraocular Foreign Body
- Giant Cell Arteritis
- Headache/Migraine
- Hyphema
- Optic Neuritis
- Ischemic/Compressive Optic Neuropathy
- Papilloedema
- Retinal Detachment
- Sickle Cell Disease
- Corneal Abrasion/Ulcer
- Occipital lobe ischaemia, infarction or trauma
- Rapidly progressive chiasmal compression
- Methanol poisoning
- Hysteria

Vitreous haemorrhage

May occur post-trauma or spontaneously (posterior vitreous detachment ± retinal breaks, proliferative diabetic retinopathy, central retinal vein occlusion and subretinal neovascular membrane in age-related macular degeneration with breakthrough bleeding).

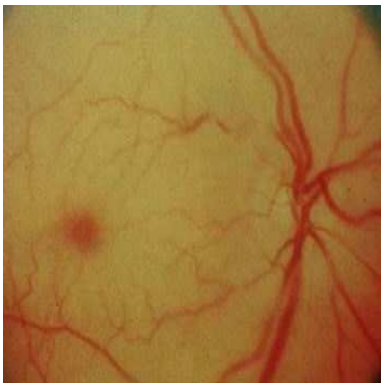
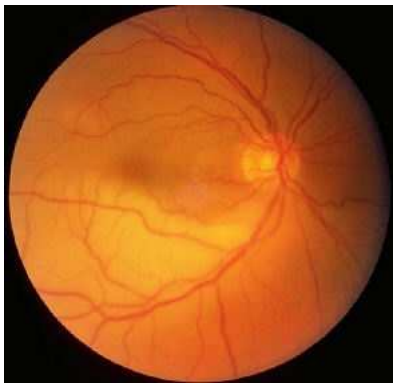
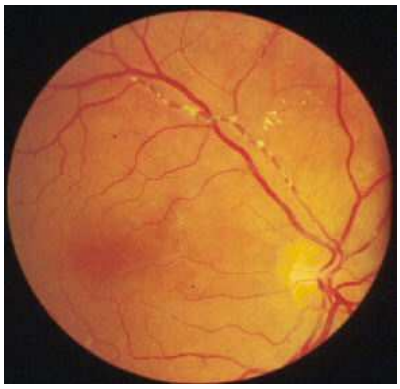
Features:

- Sudden onset of floaters causing impaired vision
- If severe, may obscure all the retina on fundoscopy. So examine other eye for clues

Management:

- Refer within 24 hours
- Bed rest. Check for DM, ±USS to exclude retinal detachment if view obscured.

Central or branch retinal artery occlusion

Caused by arteriosclerotic changes, emboli, (from heart or carotids) or occ inflammation (temporal arteritis)

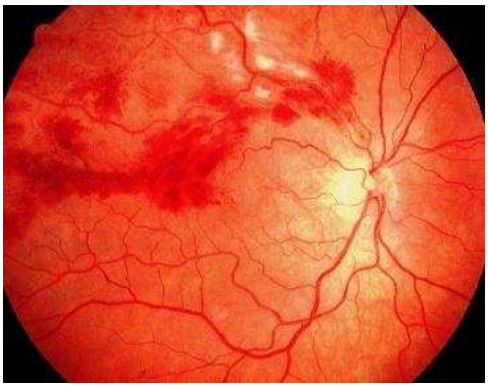
Features:

- Sudden painless unilateral visual loss: complete (central artery) or partial (branch artery)
- May be transient (a form of TIA – amaurosis fugax) with return of normal vision.
- Patient usually have a history of hypertension or heart disease
- Relative afferent pupillary defect is present in central retinal artery occlusion
- The retinal arteries are narrow or collapsed and emboli may be seen.
- In CRAO, the fovea shows a cherry-red spot against the white infarcted retina.

Management:

- Immediate referral if the visual loss <3h as Rx may restore some or most of the function.
- Rx: globe massage, IV **acetazolamide**, TOP beta-blockers, aqueous humour paracentesis to ↓IOP, or rebreathe CO_2 to dilate vessels and hopefully re-establish the arterial flow.
- Further management aim to uncover any underlying diseases such as hypertension, cardiac or carotid thrombus.
- Inv: BSL, FBC, EUC, Lipids, ESR, Thrombophilia screen, ECG, ECHO, carotid Doppler.
- Long term low dose **aspirin** is advised to reduce the risk of occurrence.

Central or branch retinal vein occlusion



Retinal vein occlusion is relatively common with infarction (not ischaemia) caused by impaired venous blood flow. Seen mainly in elderly, DM & HT.

It is second only to diabetes mellitus as a vascular cause of impaired vision.

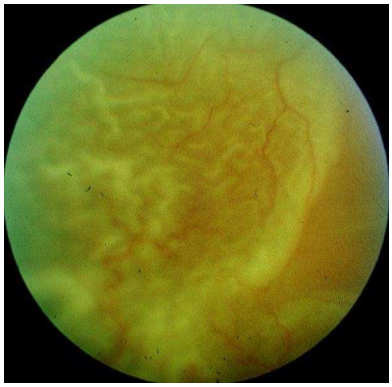
Features:

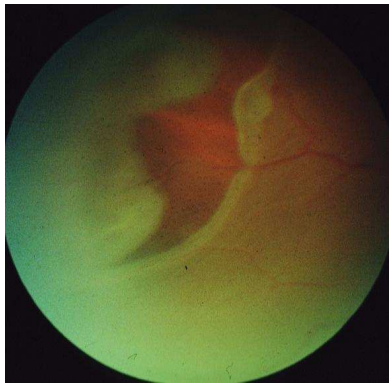
- Sudden onset painless blurred vision
- Less commonly painful red eye due to neovascular glaucoma as a result of recent CRVO.
- ↓Visual acuity dependent on the severity of the occlusion. May be normal in branch retinal vein occlusion, if the fovea is not involved.
- Relative afferent pupillary defect if severe CRVO
- Ophthalmoscopy reveals extensive intraretinal and pre-retinal haemorrhage with distended retinal veins.

Management:

- Check for hyperviscosity, DM, hypertension and glaucoma
- Inv: BSL, BP, IOP, FBC, ESR and in young patients auto-immune screening.
- Refer within 24 hours & follow-up in eye clinic to monitor for neovascular glaucoma

Retinal detachment





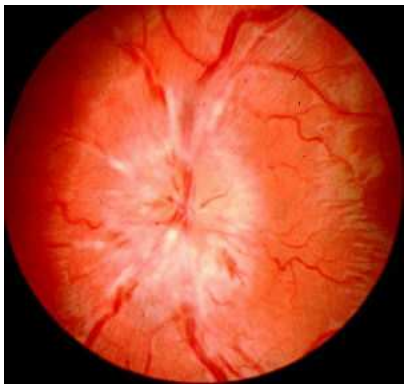
Features:

- Commonly, a recent history of floaters and flashes of light
- Curtain coming across the vision
- Assoc with myopia, cataract removal, ocular trauma & vitreous diseases
- Visual acuity variable depending if the macula is involved. Visual field defect
- Ophthalmic examination in a dilated pupil shows greyish retina. A tear may be seen or wrinkled retina. Loss of red reflex.

Management:

- Bed rest. Pad eye
- Refer the patient the same day for surgical management + laser photo-coagulation.

Ischaemic optic neuropathy



In ischaemic optic neuropathy, there is occlusion of the small arteries around the optic disc. Arteritic ischaemic optic neuropathy is caused by giant cell arteritis and prompt systemic steroids can prevent involvement of the contralateral eye. Patients usually >50y.

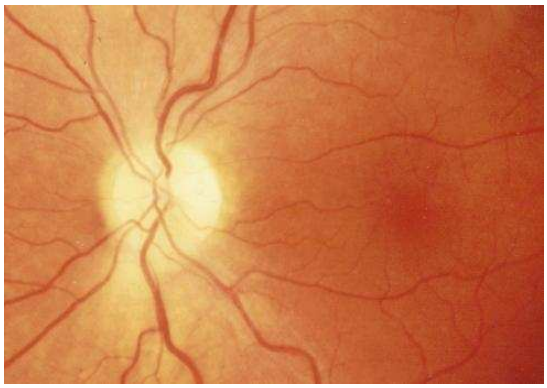
Features:

- Sudden visual loss in a patient with a history of temporal headache or jaw claudication suggests giant cell arteritis
- In giant cell arteritis there is tenderness & pulsation over the affected temporal artery.
- Profound visual loss usually in giant cell arteritis and less severe if non-arteritic.
- Commonly an afferent pupillary defect.
- Fundoscopy: swollen optic disc caused by occlusion of the arteries around the optic disc.

Management:

- ESR and CRP
- Refer to ophthalmology for review, steroids & temporal artery biopsy.

Optic neuritis



This condition typically affects patients in the 20 – 45y age range and may be associated with demyelination (most often MS) or not (infection, autoimmune).

Features:

- Impaired vision over hours – days. Usually unilateral.
- Central field defect
- Visual acuity may be as poor as perception of light
- Central scotoma is typical
- Impaired colour discrimination (esp red object)
- Relative afferent pupillary defect of the affected eye
- Pain on eye movement especially on adduction.
- Fundoscopy is normal (retrobulbar neuritis) or swollen. Other disc may look pale.

Management:

- Refer for review, ESR, MRI (r/o demyelination) or CXR (TB, sarcoid).
- Normal or near-normal vision usually returns within 6wk
- No specific therapy though IV steroids may slow onset of MS.