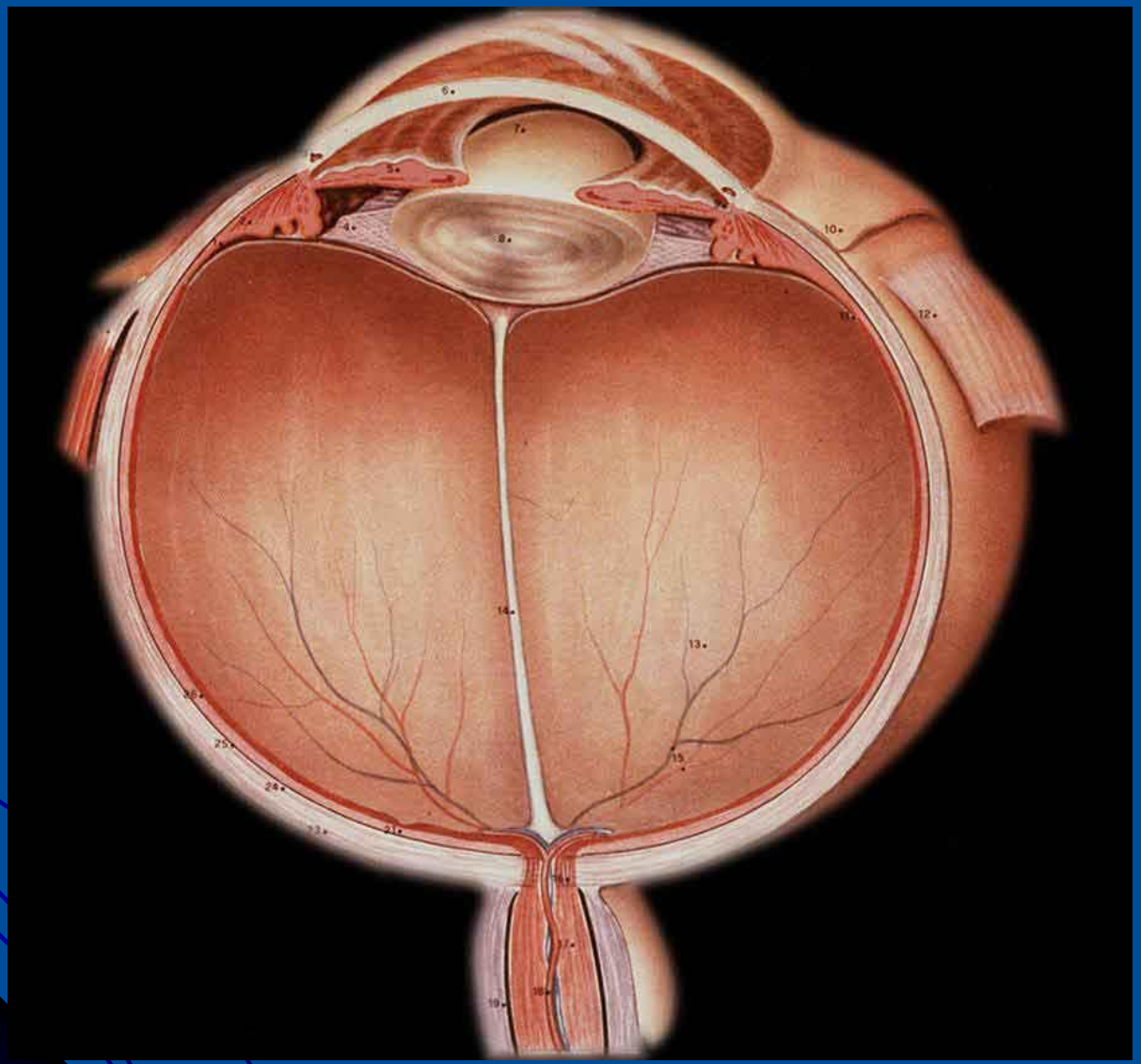
Acute Visual Loss

Marwan Abouammoh, MD



Definition

- Sudden onset of blindness.

- a disaster for most people and you should be able to evaluate such a patient and be able to recognize situations requiring urgent action.

Causes of Acute Visual Loss

Painful

- Acute A. C. glaucoma
- Uveitis
- Keratitis?

Painless

- Vitreous hem
- RD
- Retinal vascular Occlusions
- Optic neuritis +
- Ischemic optic neuropathy
- CVA
- Functional

ACUTE VISUAL LOSS

1. Media opacities
2. Retinal disease
3. Optic nerve disease
4. Visual pathway disorders
5. Functional disorders
6. Acute discovery of chronic visual loss

ACUTE VISUAL LOSS

History:

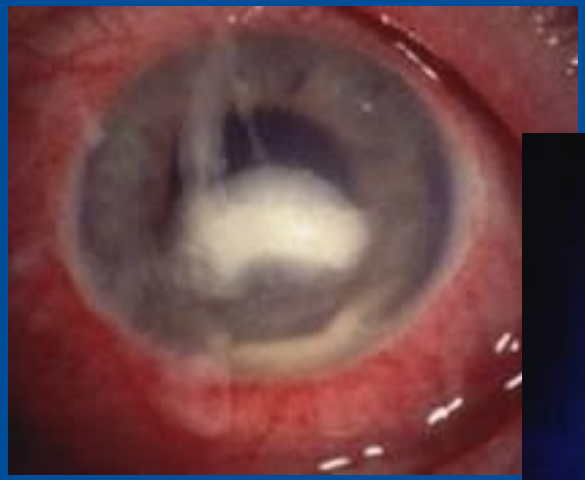
The history questions to be asked of a patient of sudden visual loss include:

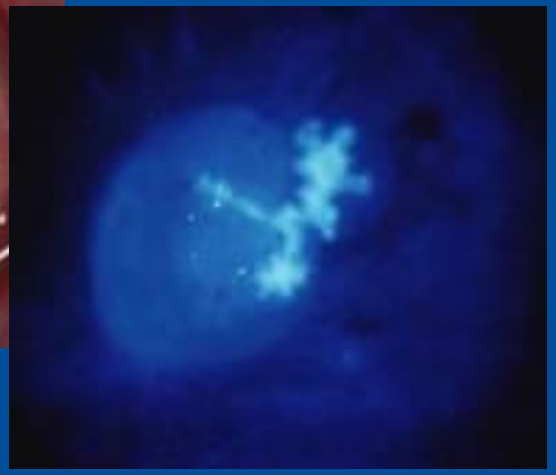
1. Is the visual loss transient, persistent, or progressive?
2. Is the visual loss monocular or binocular?
3. Did the visual loss occur suddenly or it developed over hours, days or weeks?
4. What is the patient's age and general medical condition?
5. Did the patient have normal vision in the past and when was vision last tested
6. Was pain associated with the visual loss?

ACUTE VISUAL LOSS

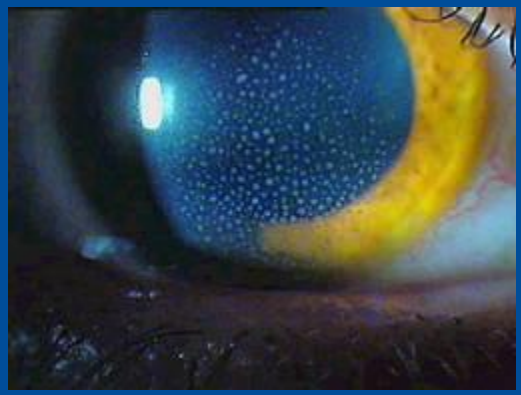
Examination:

- Visual acuity testing
- Confrontation visual fields
- Pupillary reactions
- Ophthalmoscopy
- External examination of the eye with a pen light
- Tonometry to measure the intraocular pressure





Aqueous flare as seen by beam of light through anterior chamber; blue line on left is cornea, yellow line on right is iris, in between is anterior chamber



Media opacities

Cornea

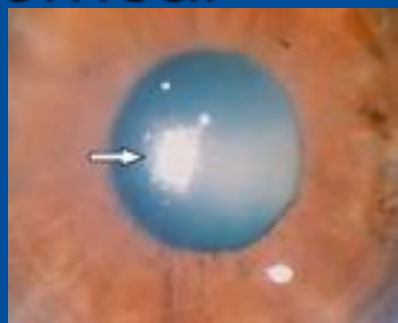
Oedema

The cornea appears like a ground glass rather than its normal clear appearance.

The most common cause of corneal edema is increased intraocular pressure and occurs typically in angle closure glaucoma.

Infection

Any acute infection of the cornea by a corneal ulcer may mimic corneal edema.



Media opacities

Hyphema

Hyphema is blood in the anterior chamber

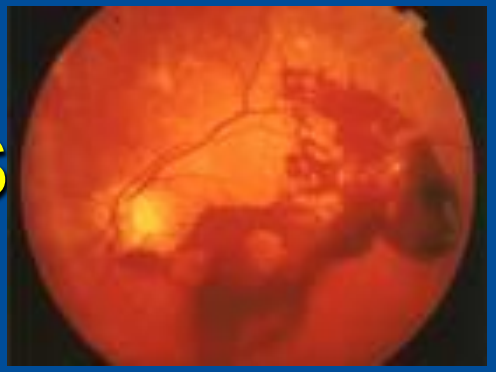
The hyphema is a direct consequence of blunt trauma to a normal eye.

However, it can occur with tumors, diabetes,intraocular surgery and chronic inflammation which all cause neovascularization.

Vitreous Hemorrhage

Not a diagnosis rather a sign of many diseases

Media opacities



Vitreous hemorrhage

Any bleeding into vitreous will also reduce the visual acuity.

after trauma, seen in diabetics or after a retinal vein occlusion and it may also accompany subarachnoid hemorrhage.

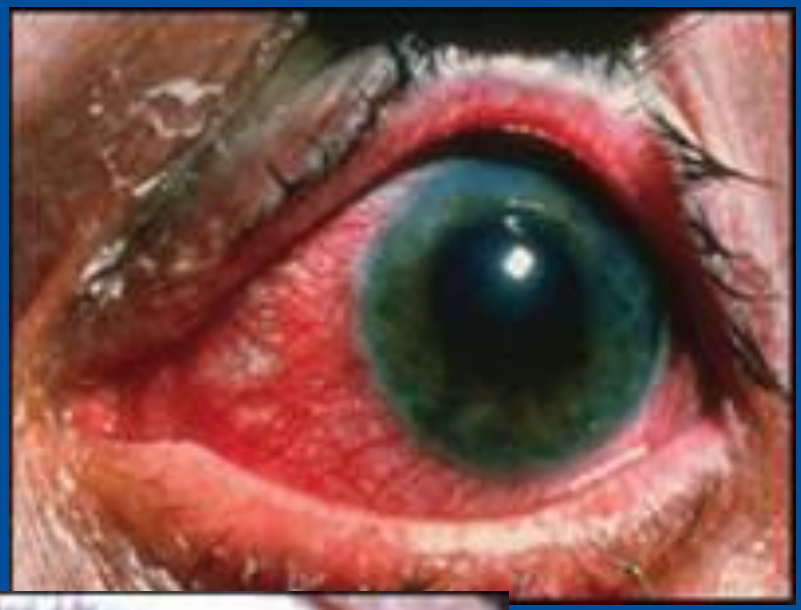
If you cannot appreciate a red reflex with an ophthalmoscope and the lens appears clear, you should suspect a vitreous hemorrhage.

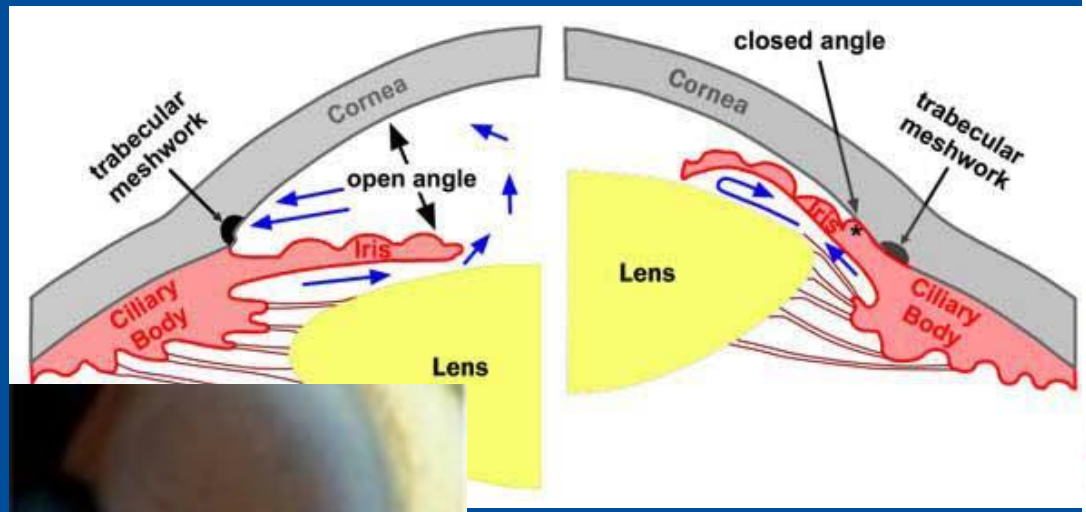
The diagnosis is confirmed with slit lamp examination through a dilated pupil.

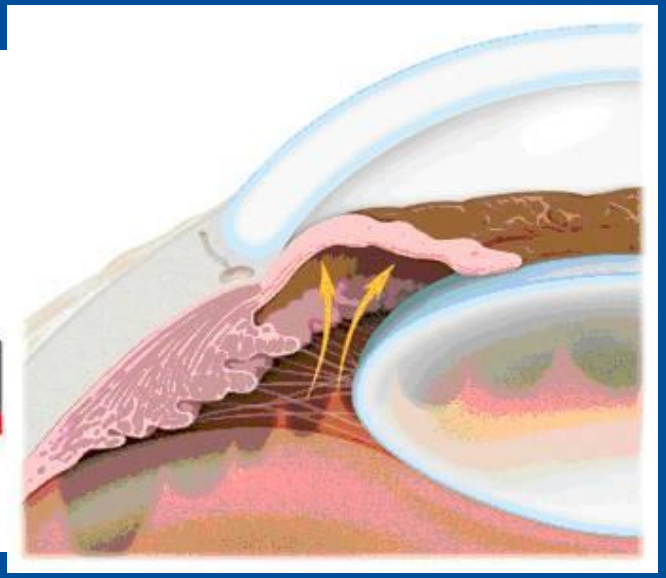
B scan is important.

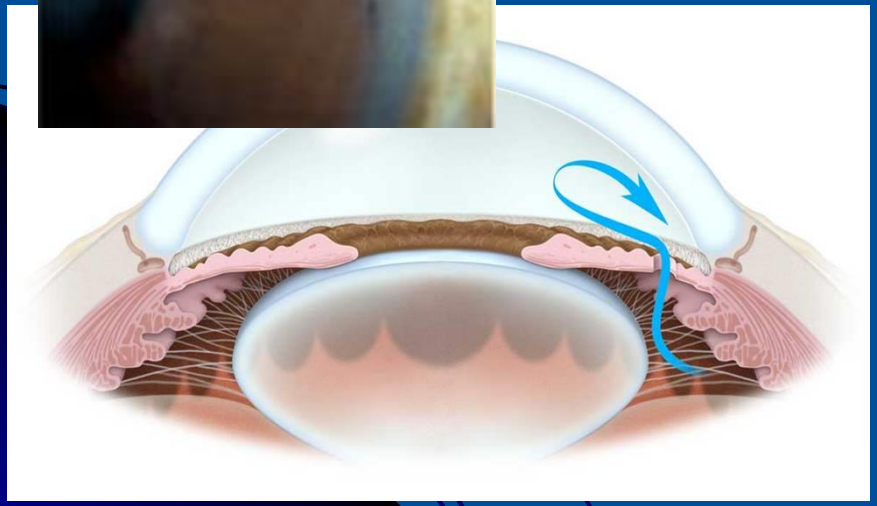
Acute Angle Closure Glaucoma

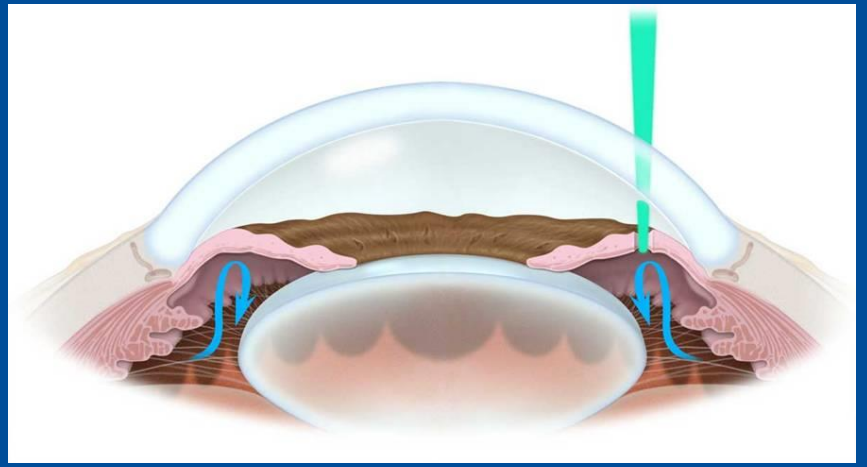
APPLANATION TONOMETRY - Precise and painless




trabecular meshwork
Cornea
open angle
Iris
Ciliary Body
Lens
closed angle
Cornea
trabecular meshwork
Iris
Lens
Ciliary Body

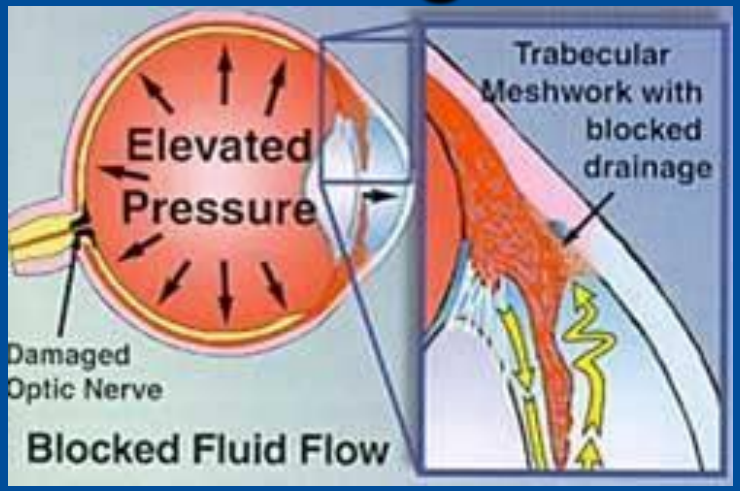






Aims of Acute ACG management :

- Decrease IOP



- Prevent future attacks in OU

Retinal Detachment (RD)

Types:

1. Rhegmatogenous RD.
2. Traction RD.
3. Exudative RD.

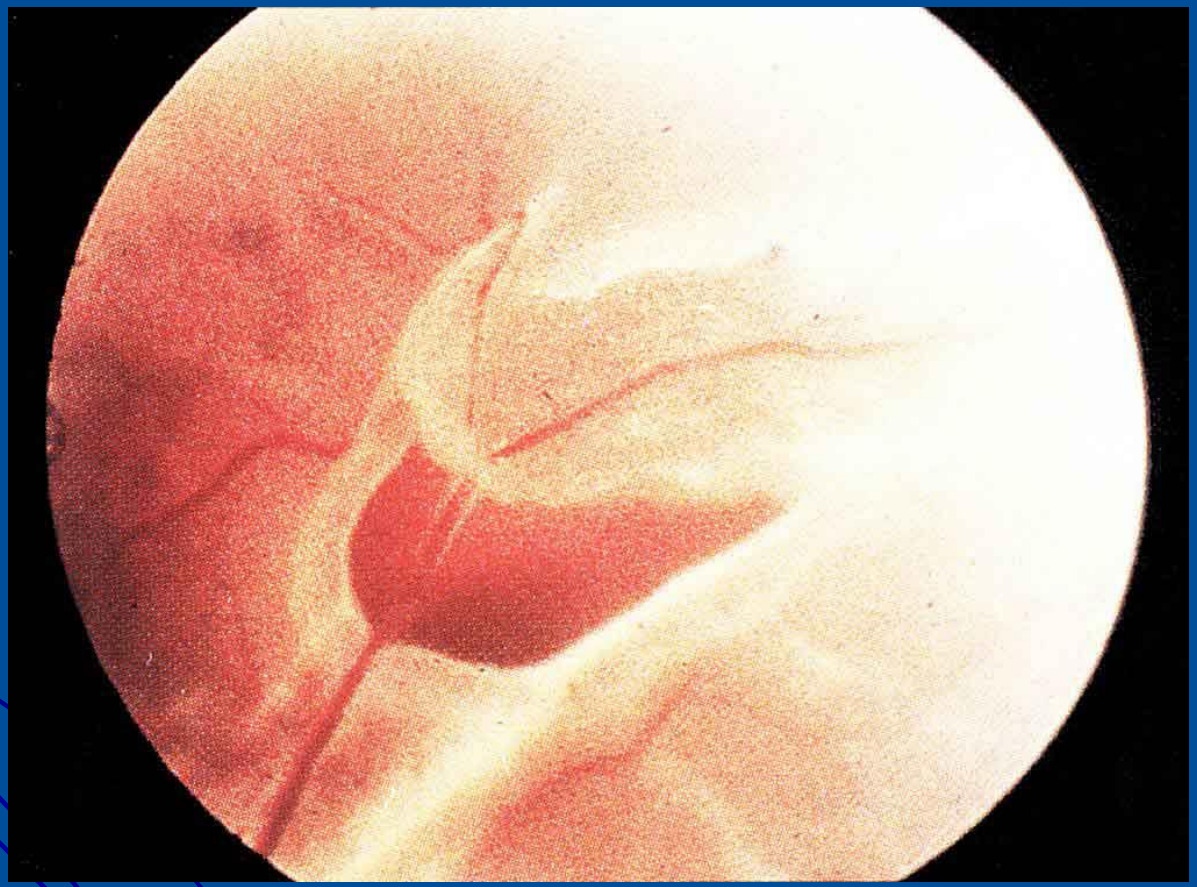
Retinal Detachment (RD)

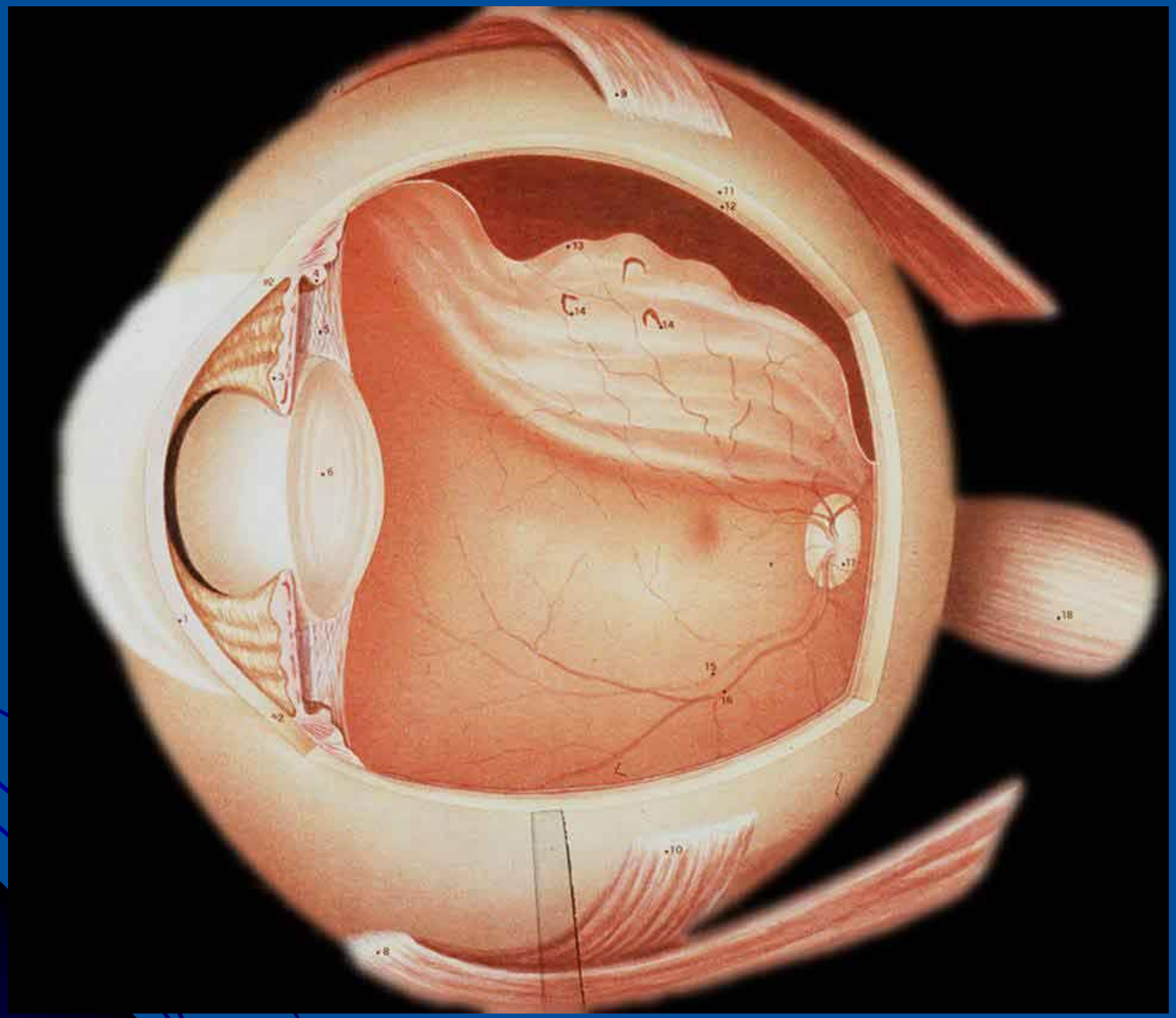
Symptoms:

A. Flashes
B. Floaters

} Prodromal

1. VF loss – curtain-like.
2. Sudden, painless loss of vision.





RD (cont.)

Risk Factors:

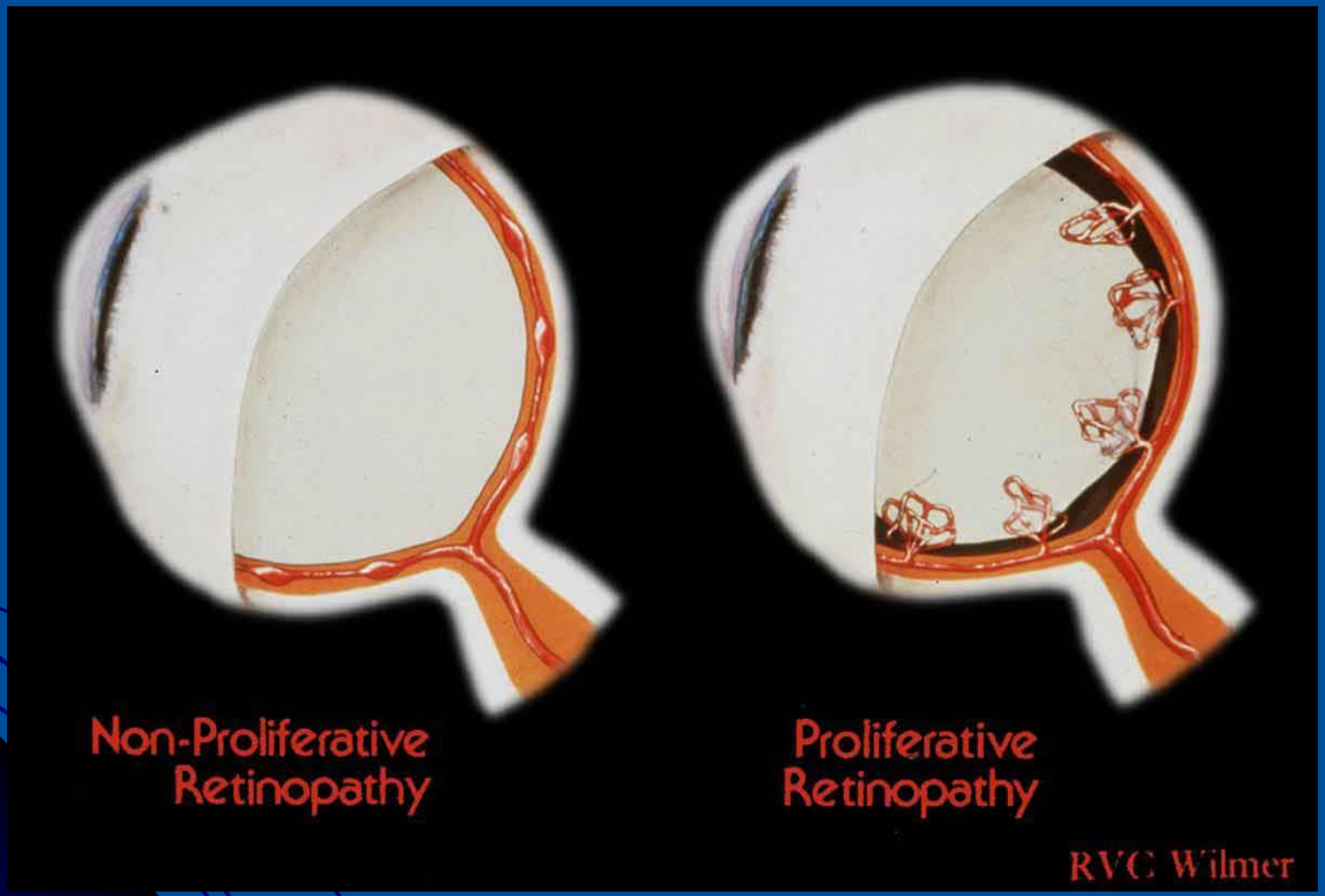
- Peripheral retinal degenerations
  - e.g. lattice degeneration, retinal tufts…etc.
- High myopia.
- Aphakia.
- Trauma.
- H/O RD.

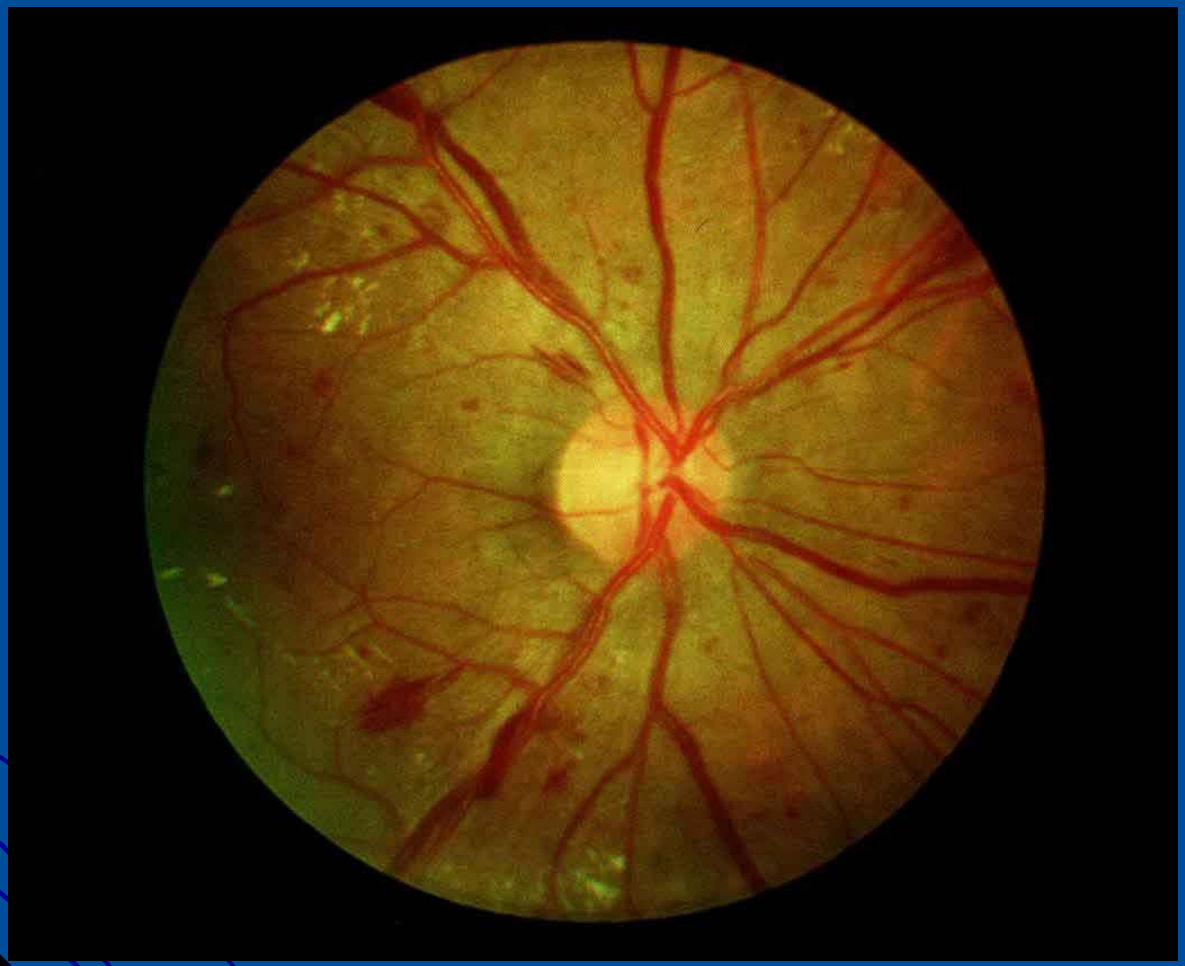
RD (cont.)

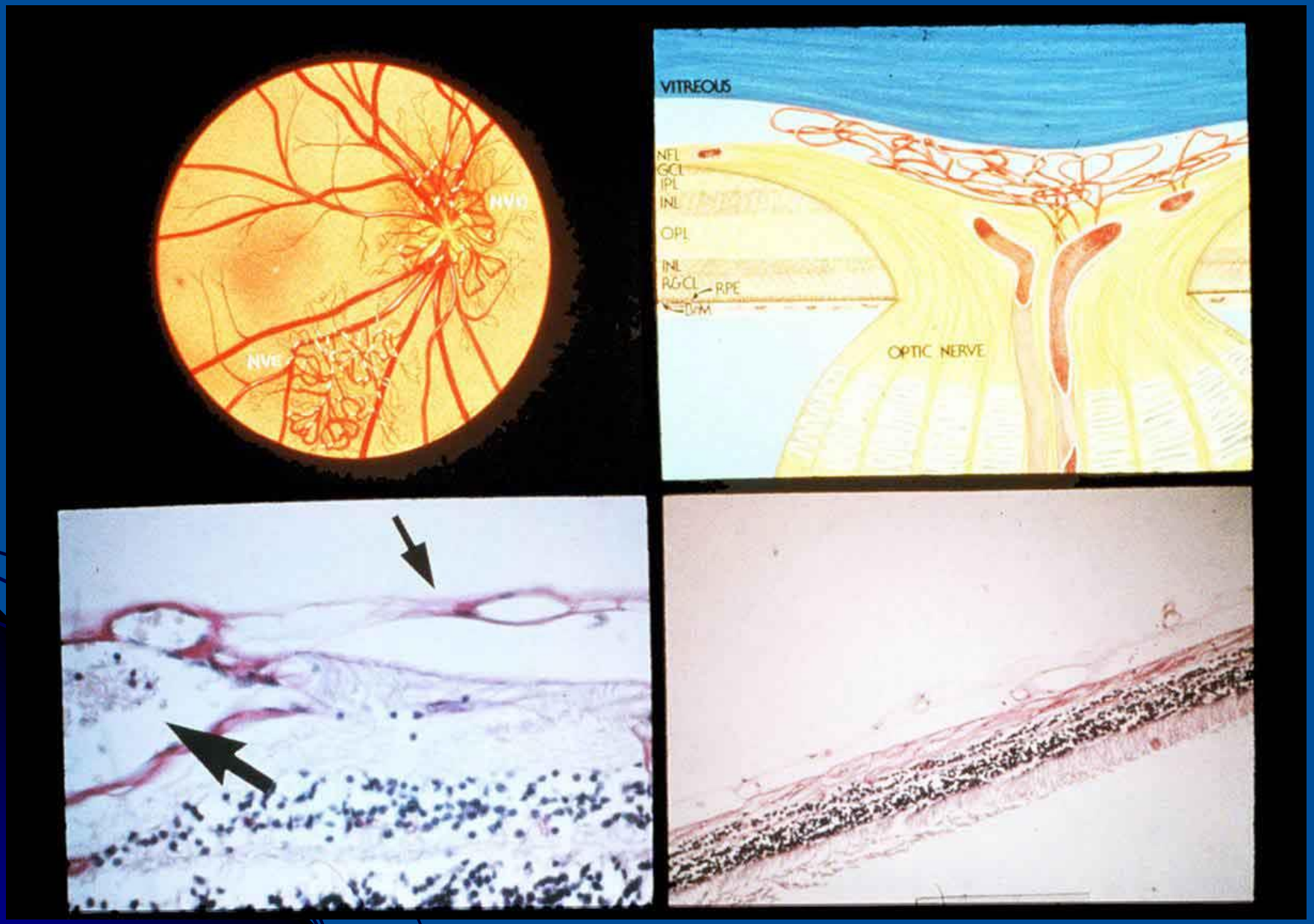
Management:

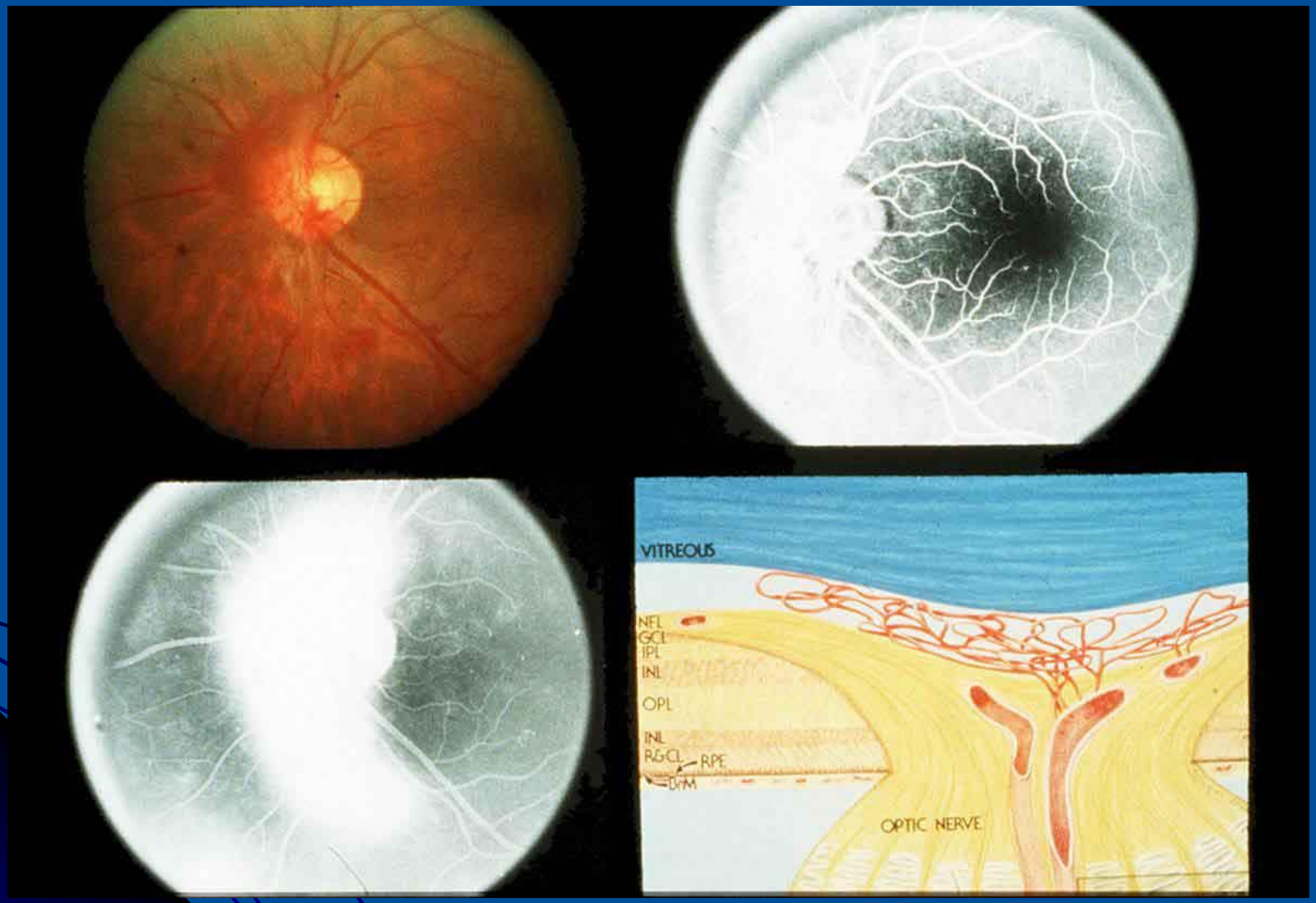
- RD is an urgent condition.
- Needs emergency surgery.
- Scleral buckle, cryotherapy, SRF drainage.
- Vitrectomy, AFX, endolaser, long-acting tamponade (Gas, Silicone oil).

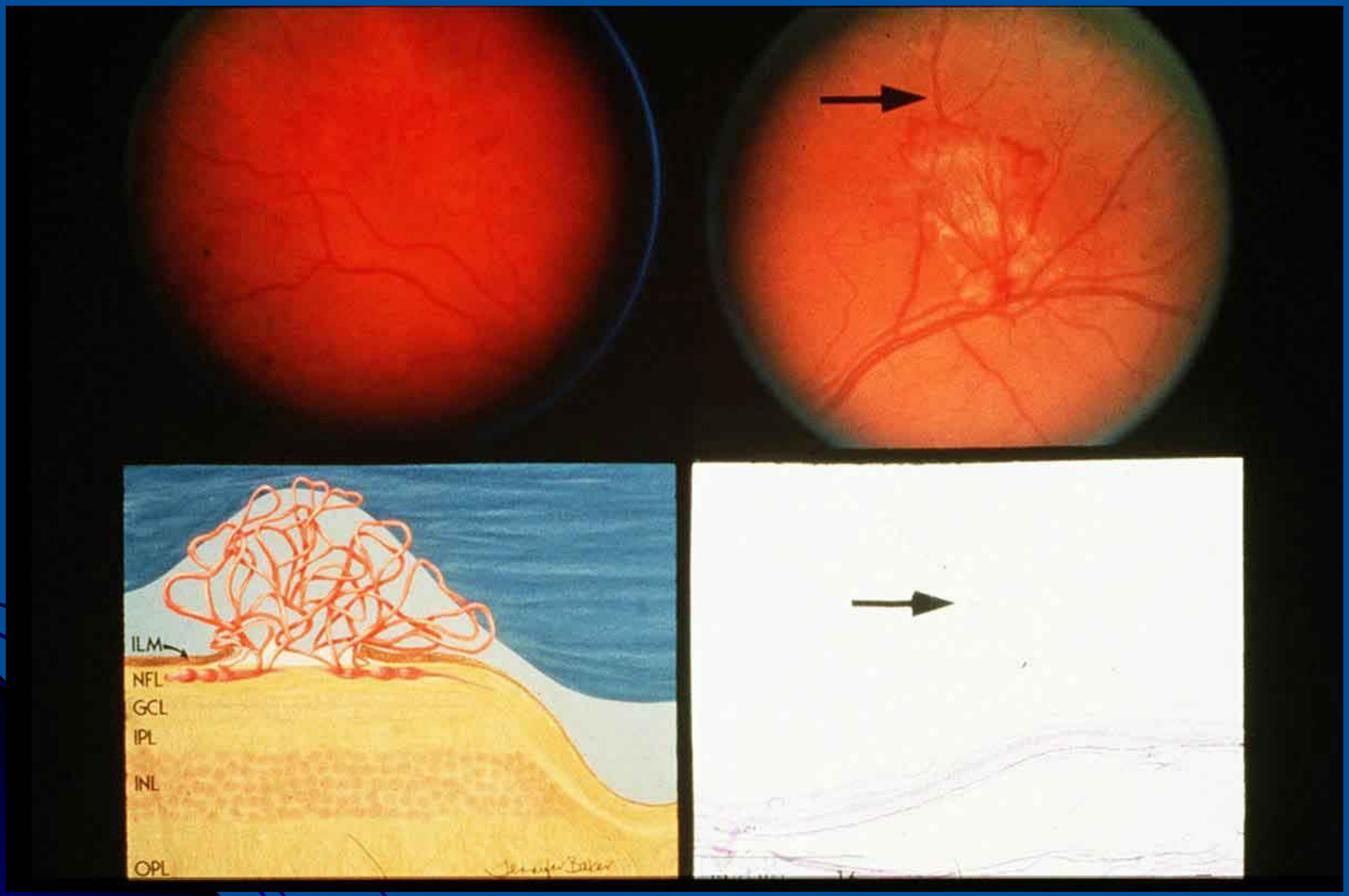
Diabetic Retinopathy

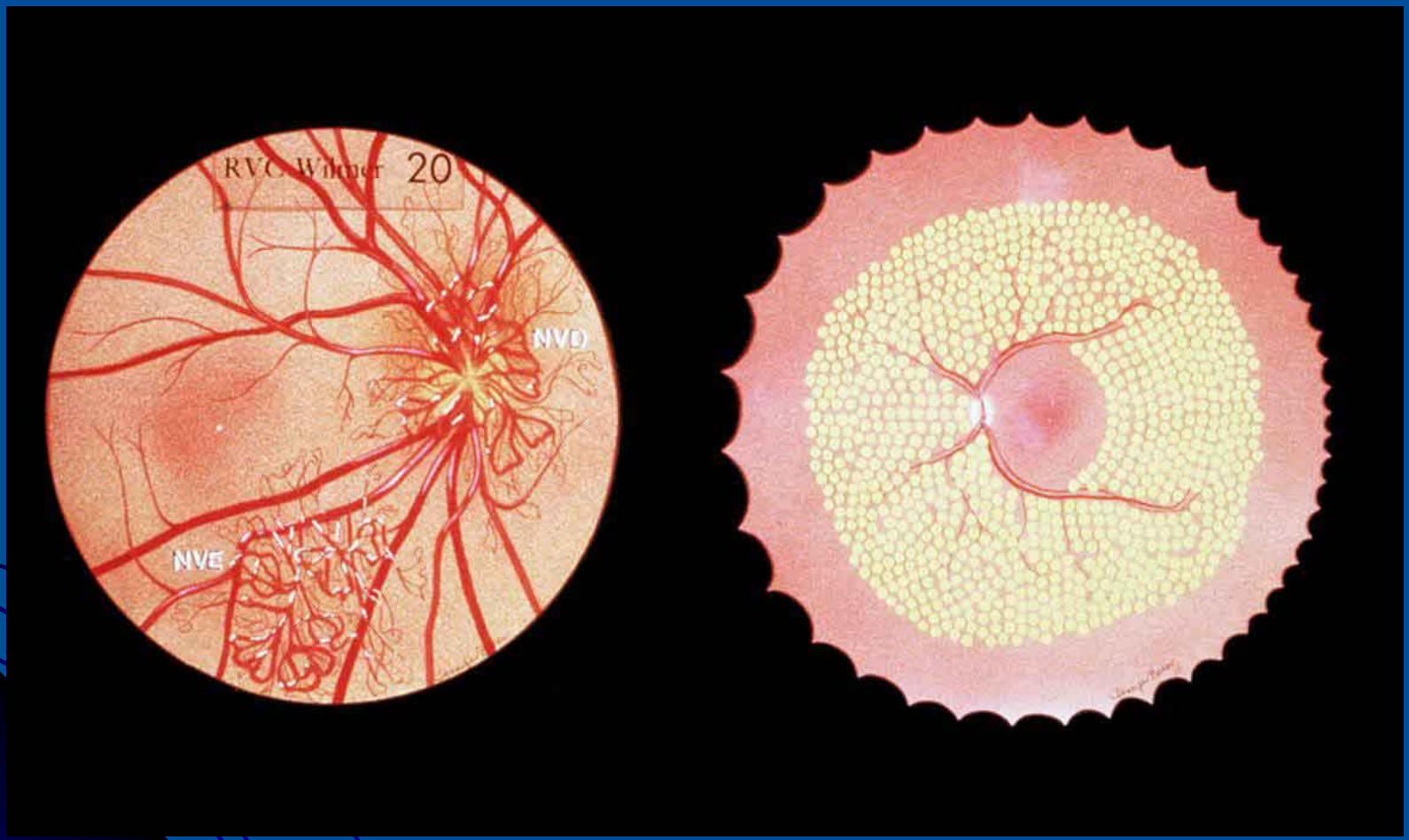

Non-Proliferative
Retinopathy
Proliferative
Retinopathy
RVC Wilmer

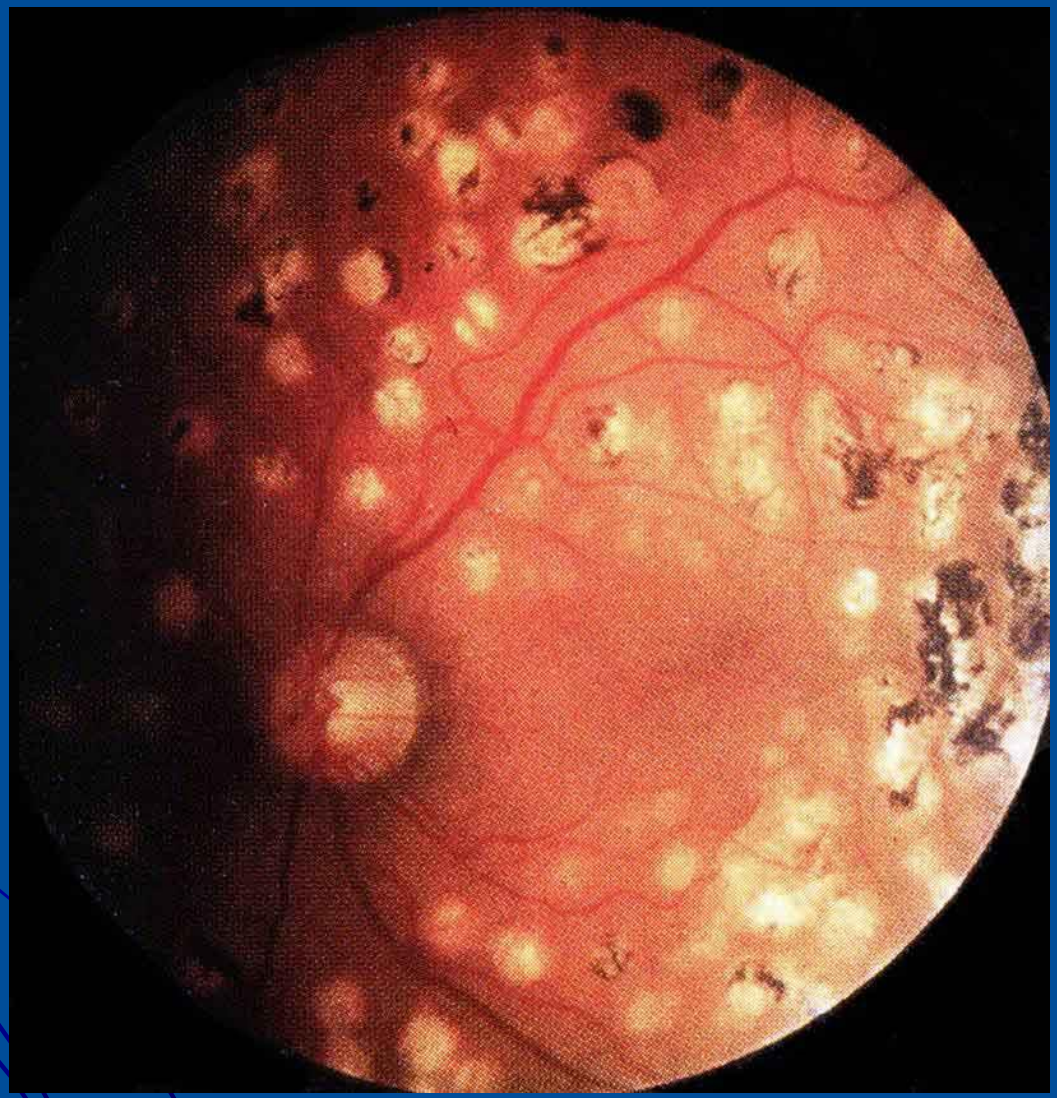


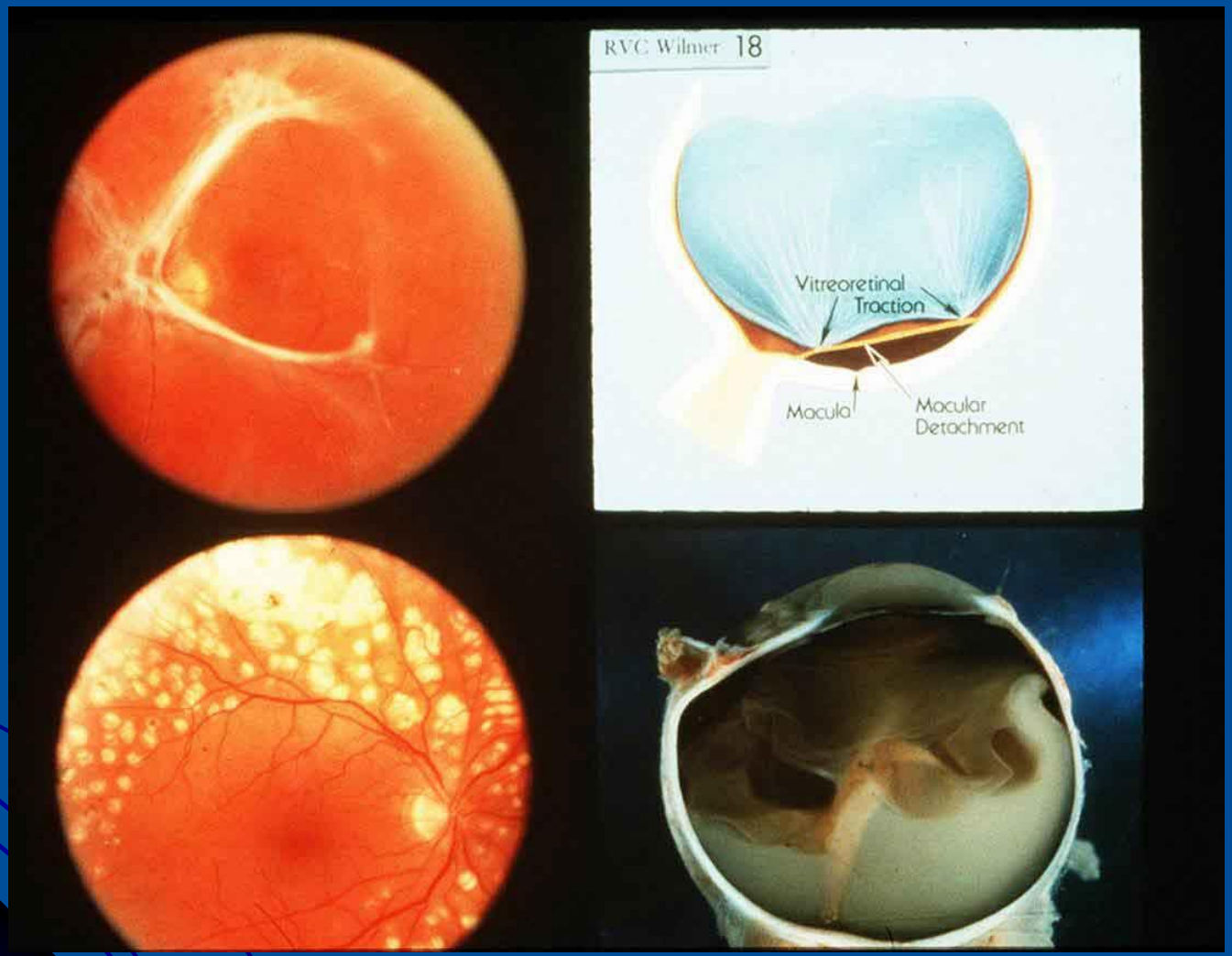

NVD
NVE
VITREOUS
NFL
GCL
IPL
INL
OPL
INL
RGCL
RPE
DrM
OPTIC NERVE

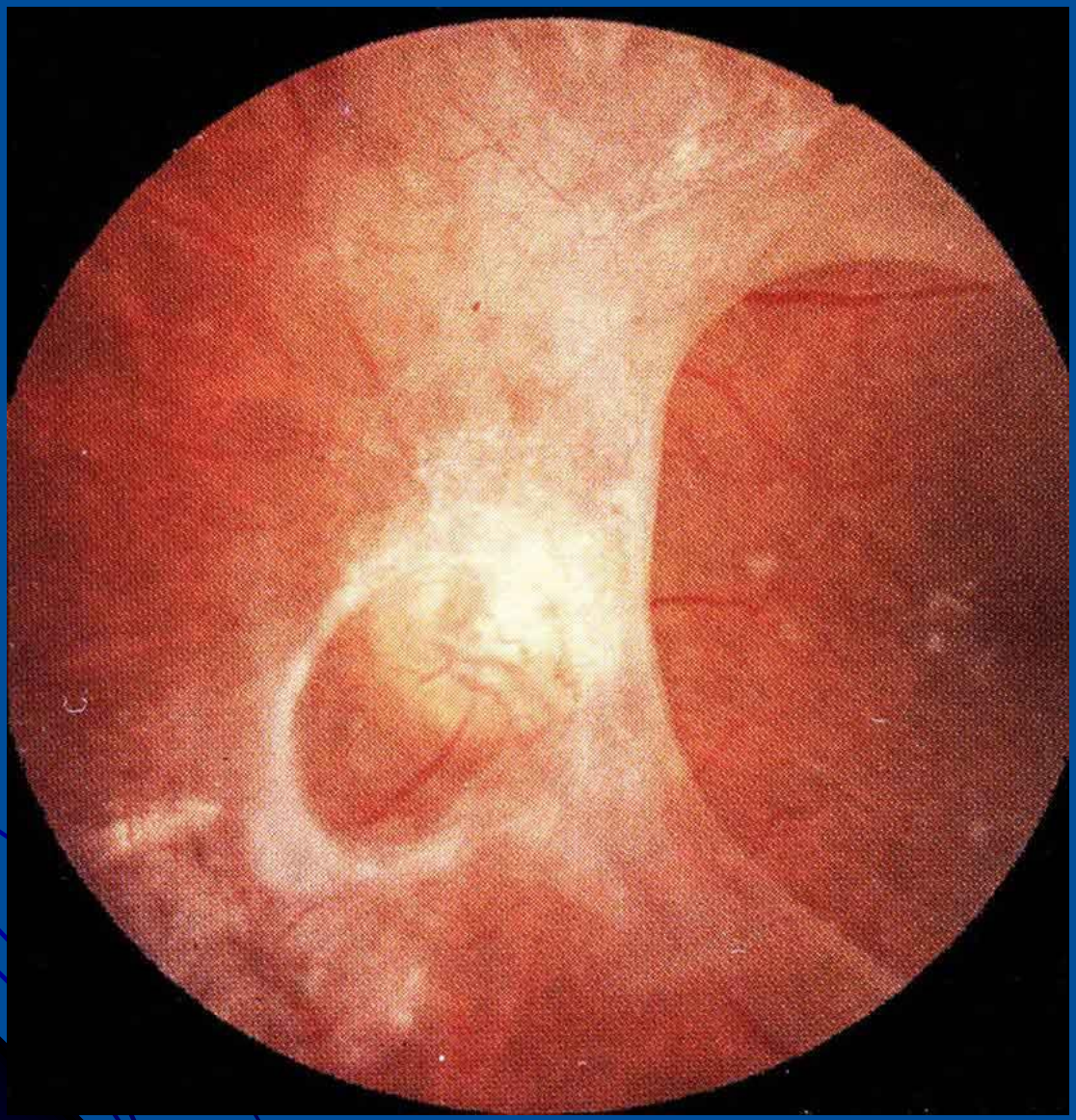

VITREOUS
NFL
GCL
IPL
INL
OPL
INL
RG-CL
RPE
B-M
OPTIC NERVE


ILM
NFL
GCL
IPL
INL
OPL


RVO Wilmer 20
NVD
NVE




RVC Wilmer 18
Vitreoretinal
Traction
Macula
Macular
Detachment



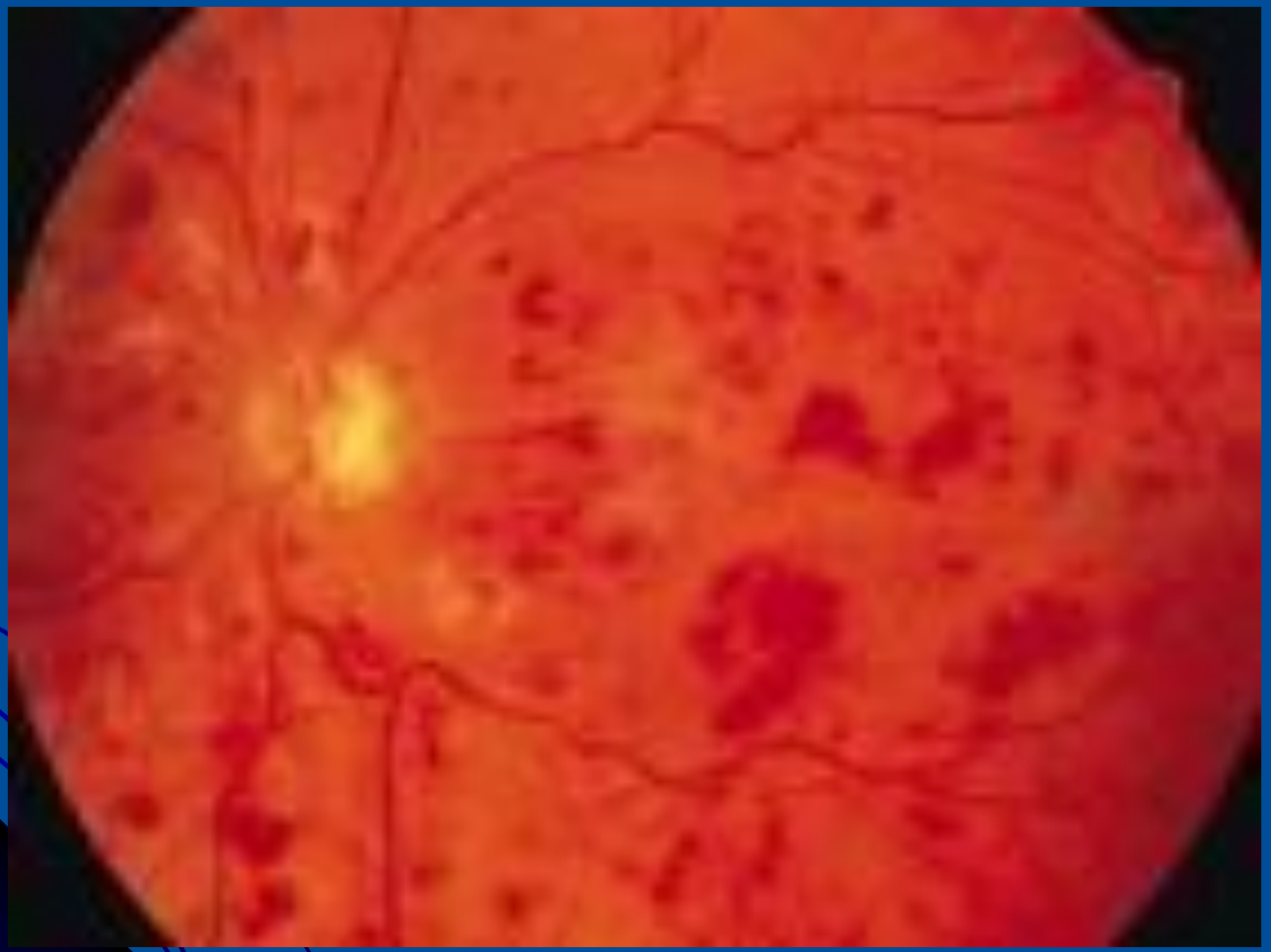
Retinal vascular occlusion

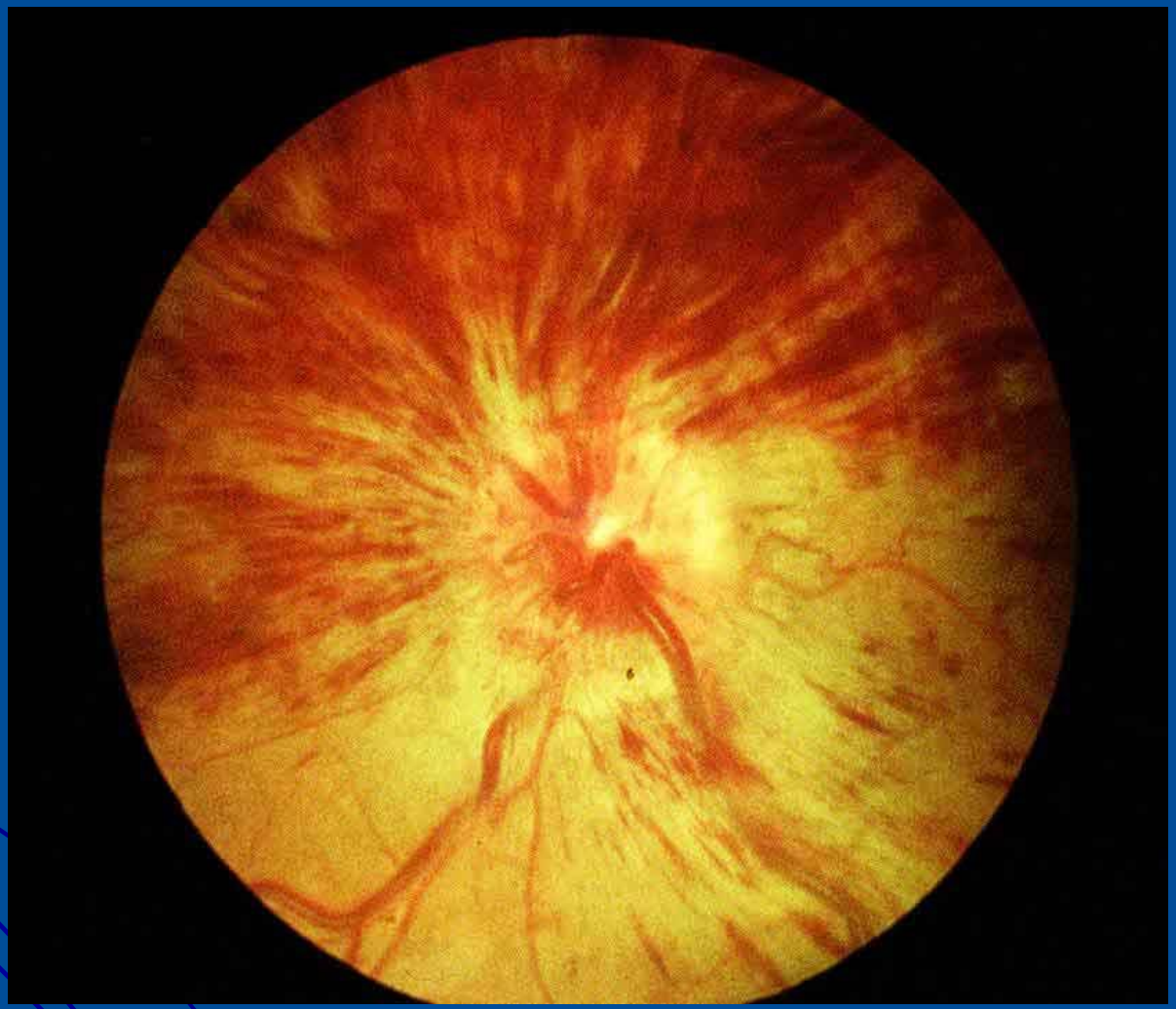
Retinal vein occlusion

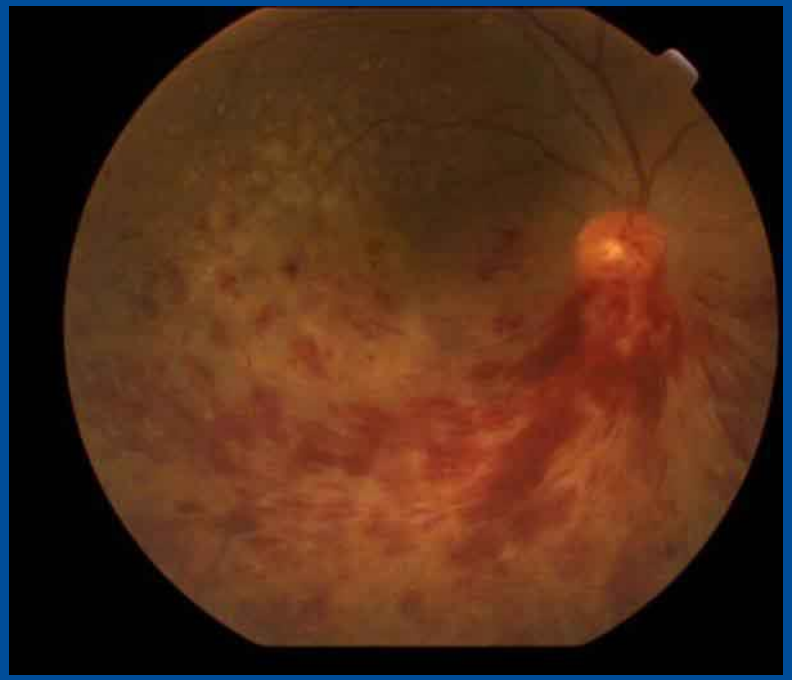
ophthalmoscopes picture of disc swelling, venous engorgement, cotton wool spots and diffuse retinal hemorrhages like blood and thunder.

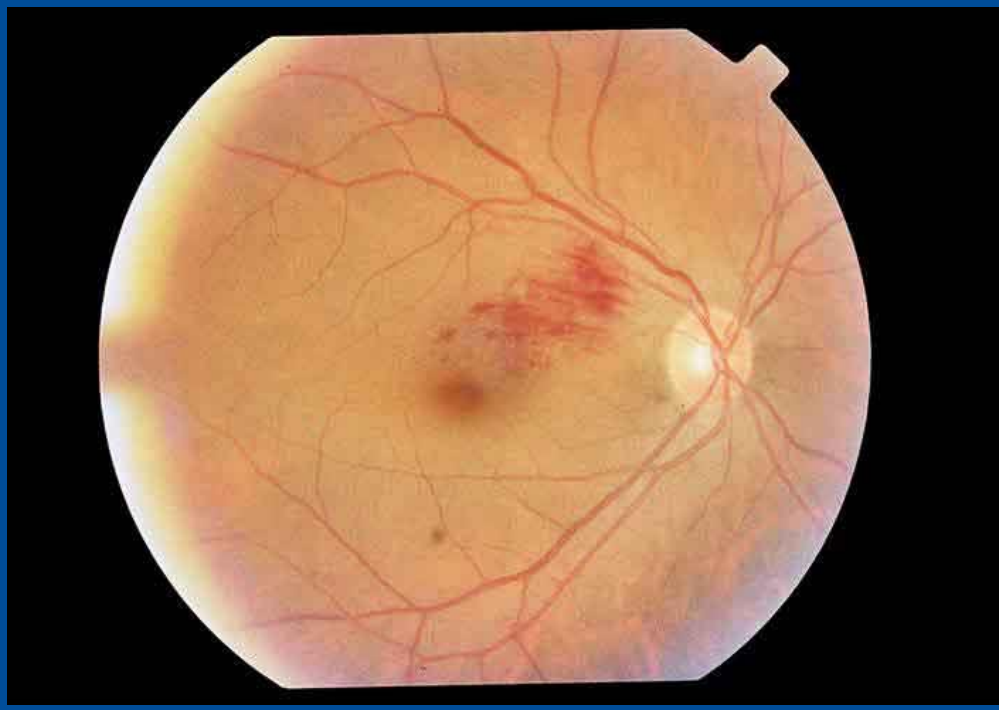
Loss of vision may be severe.

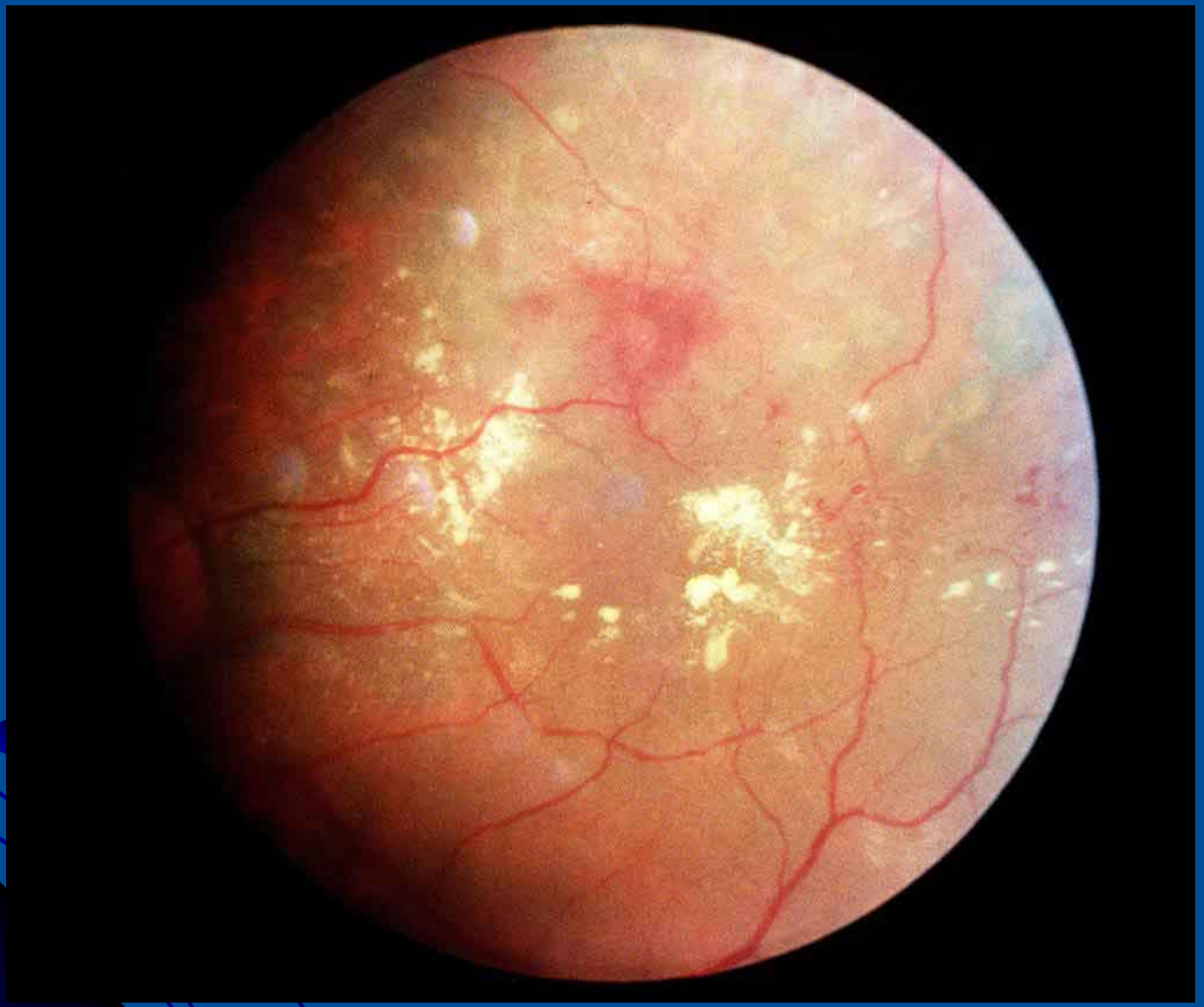
There is no generally accepted acute management. Central retinal vein occlusion is not a true ophthalmic emergency

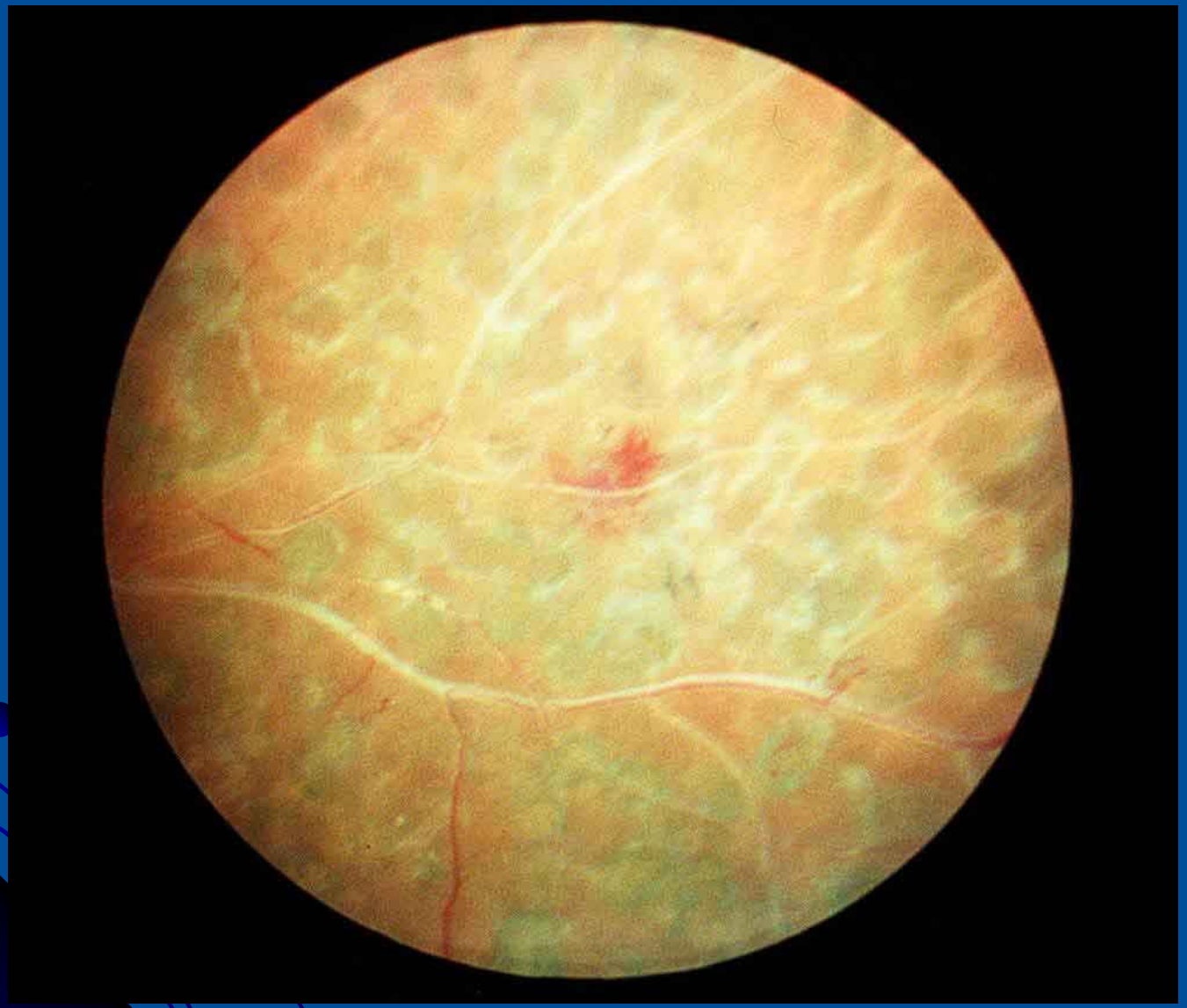


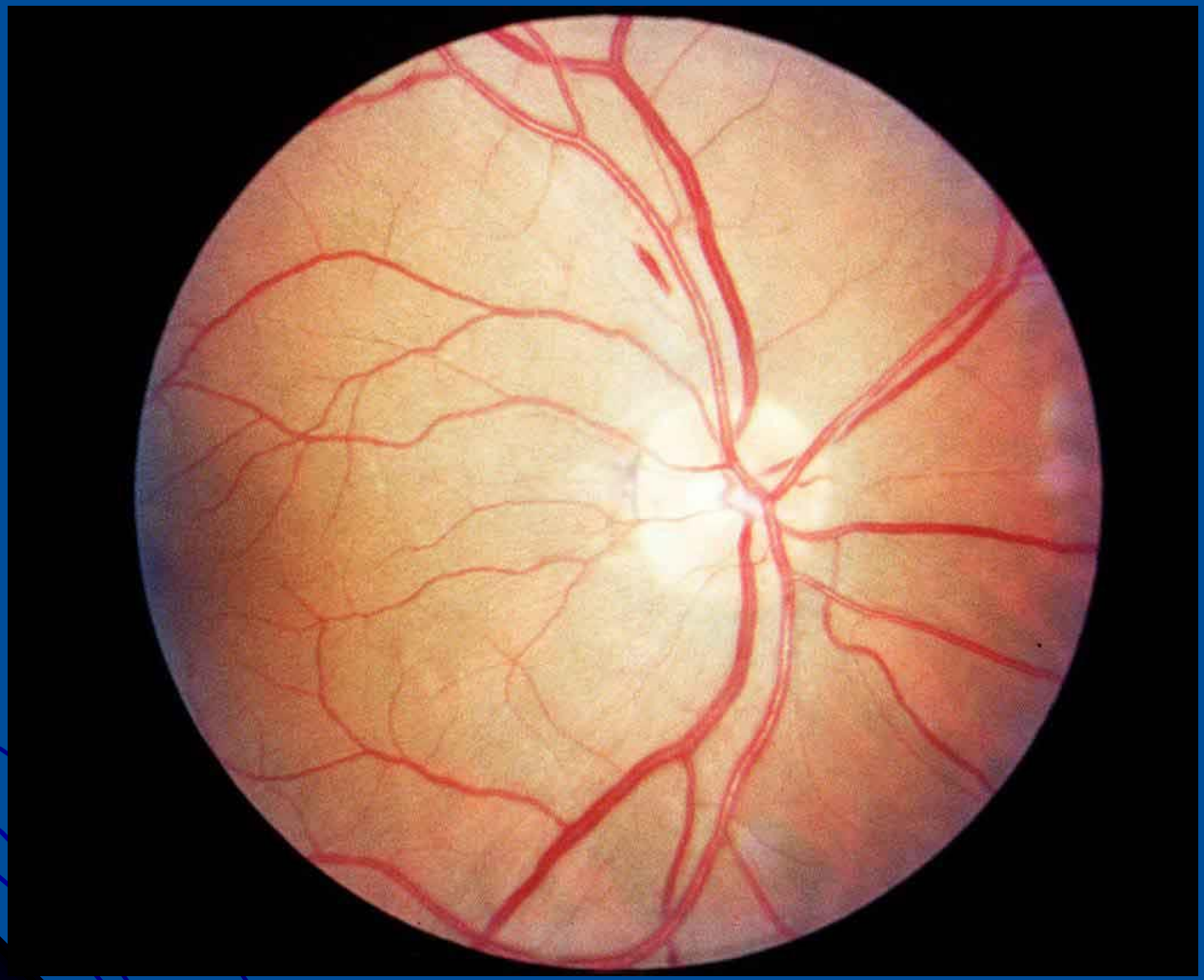












Retinal vascular occlusion

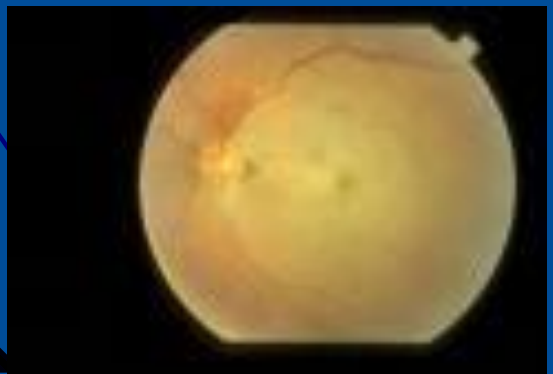
Central Retinal artery occlusion –

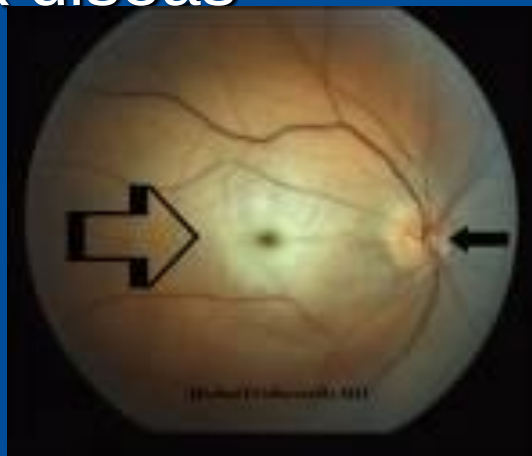
A sudden, painless and often complete visual loss may indicate central retinal artery occlusion.

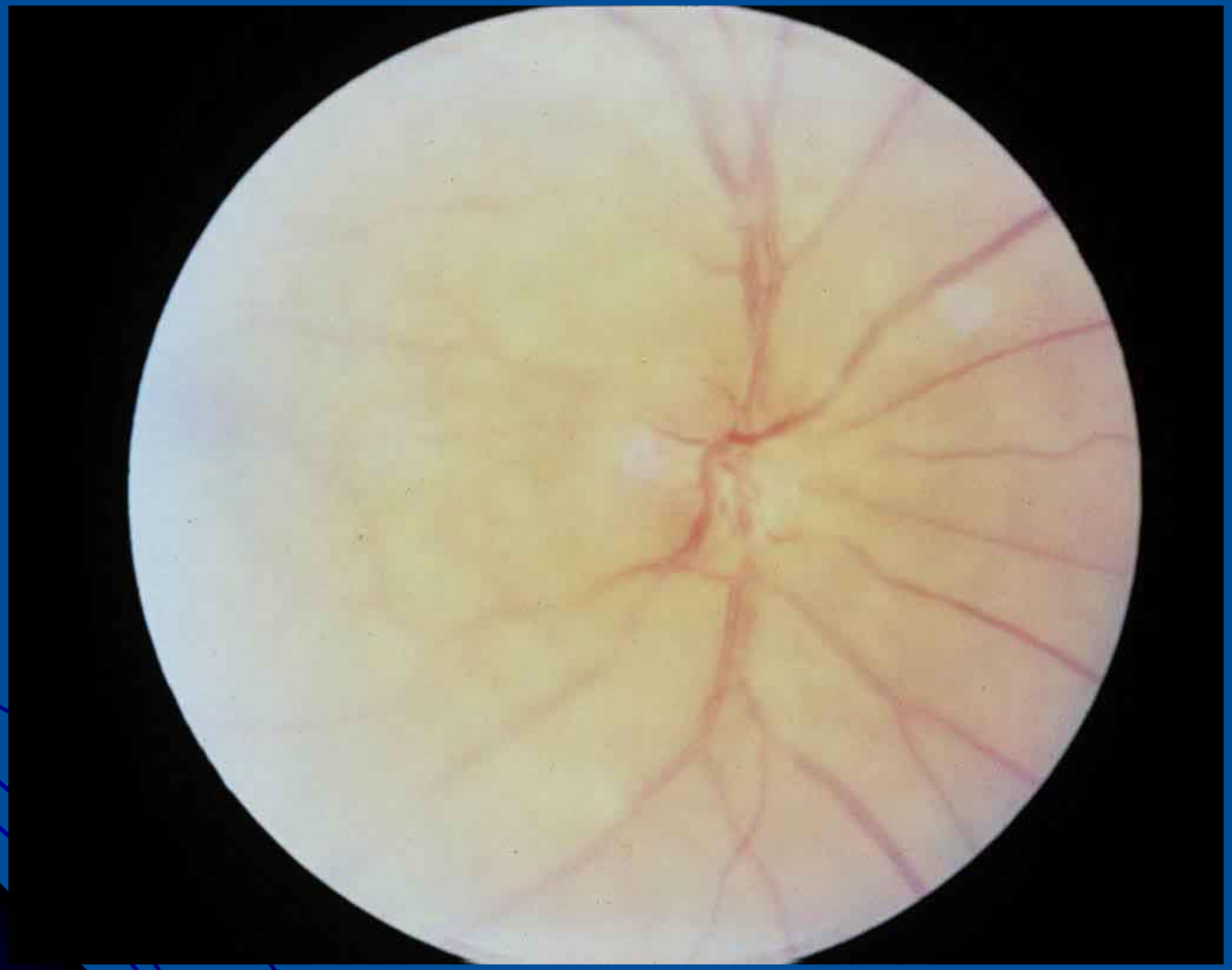
Several hours after a central retinal artery occlusion, the inner layer of the retina becomes opalescent.

A cherry red spot is seen due to the pallor of the perifoveal retina in contrast to the normal color of the fovea.

A chronic cherry red spot is also a feature of the storage diseases such as Tay-Sachs Pick diseas disease and Niemann-Pick disease.







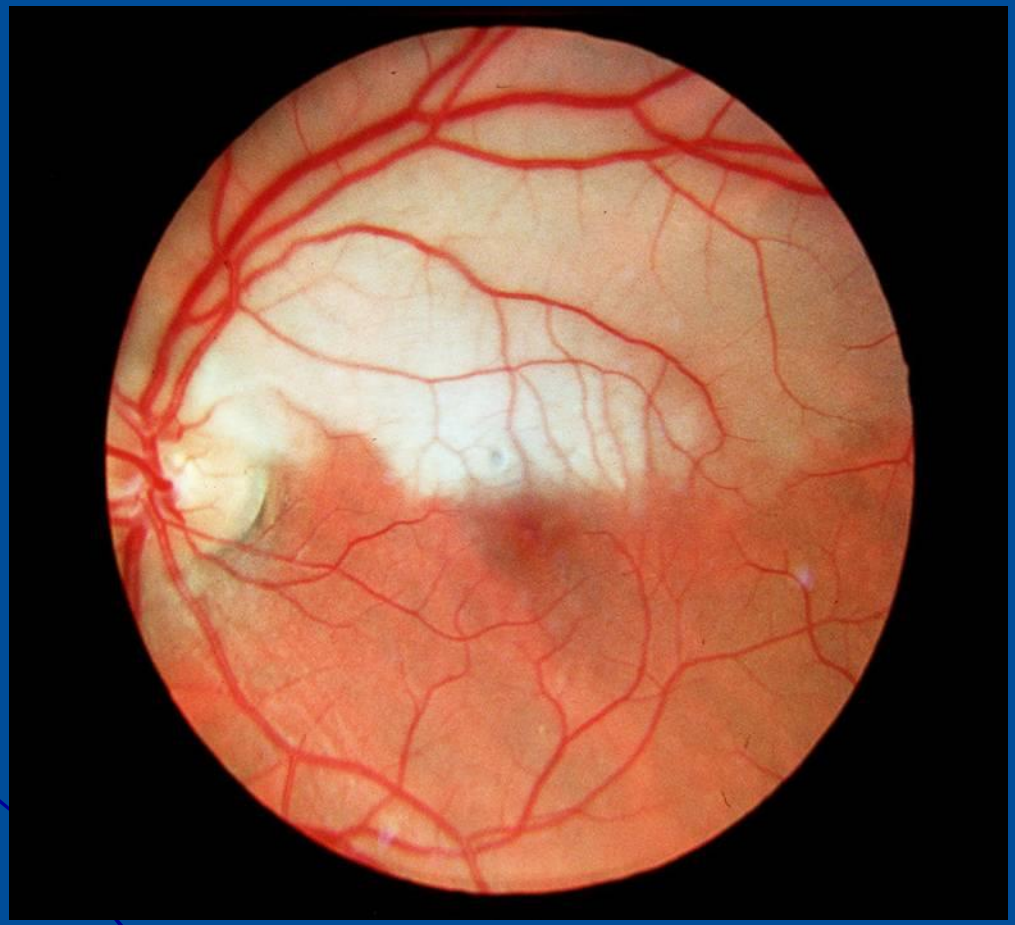
Retinal vascular occlusion

Branch Retinal Artery Occlusion

when only a branch of the central retinal artery is occluded, vision is only partially lost.

This is more likely to be the result of an emboli and the source of the emboli should be sought.

If the visual acuity is affected, attempts should be made to dislodge the emboli by ocular massage.



Optic Nerve Disease

Optic Neuritis:

Optic Neuritis is inflammation of the optic nerve and is usually idiopathic but maybe associated with multiple sclerosis in a significant number of cases.

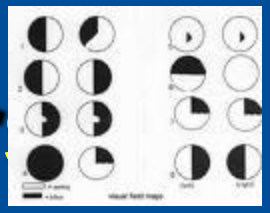
The visual acuity is markedly reduced and an afferent pupillary defect is present.

The optic disc initially appears hyperemic and swollen.

The visual acuity usually recovers;

however, repeated episodes of optic neuritis may lead to permanent loss of vision.

Visual Pathway Disorders



Homonymous hemianopia - is loss of vision on one side of both visual fields

and may result from occlusion of one of the posterior cerebral arteries with infarction of the occipital lobe.

Other vascular abnormalities occurring in the

middle cerebral artery distribution may produce a hemianopia, but usually other neurological signs are prominent.

Any patient with a hemianopia needs at CT or

MRI to localize and identify the cause.

Cortical Blindness

Cortical Blindness: A rare extensive bilateral damage to the cerebral visual pathways results in complete loss of Vision.

This condition is referred to as cortical, central or cerebral blindness.

As the pathways serving the pupillary lights reflex separate from those carrying visual information at the level of the optic tracts, a patient who is cortically blind has normal pupillary reactions.

Thus a patient with normal fundus examination along with normal pupillary reactions,most likely has cortical blindness..

Functional Disorders

A functional disorder is used in preference to hysterical or malingering to describe visual loss without organic basis.

A patient may report complete blindness in one eye and normal vision in the other eye,

and no relative afferent pupillary defect

Thank you

Questions?