

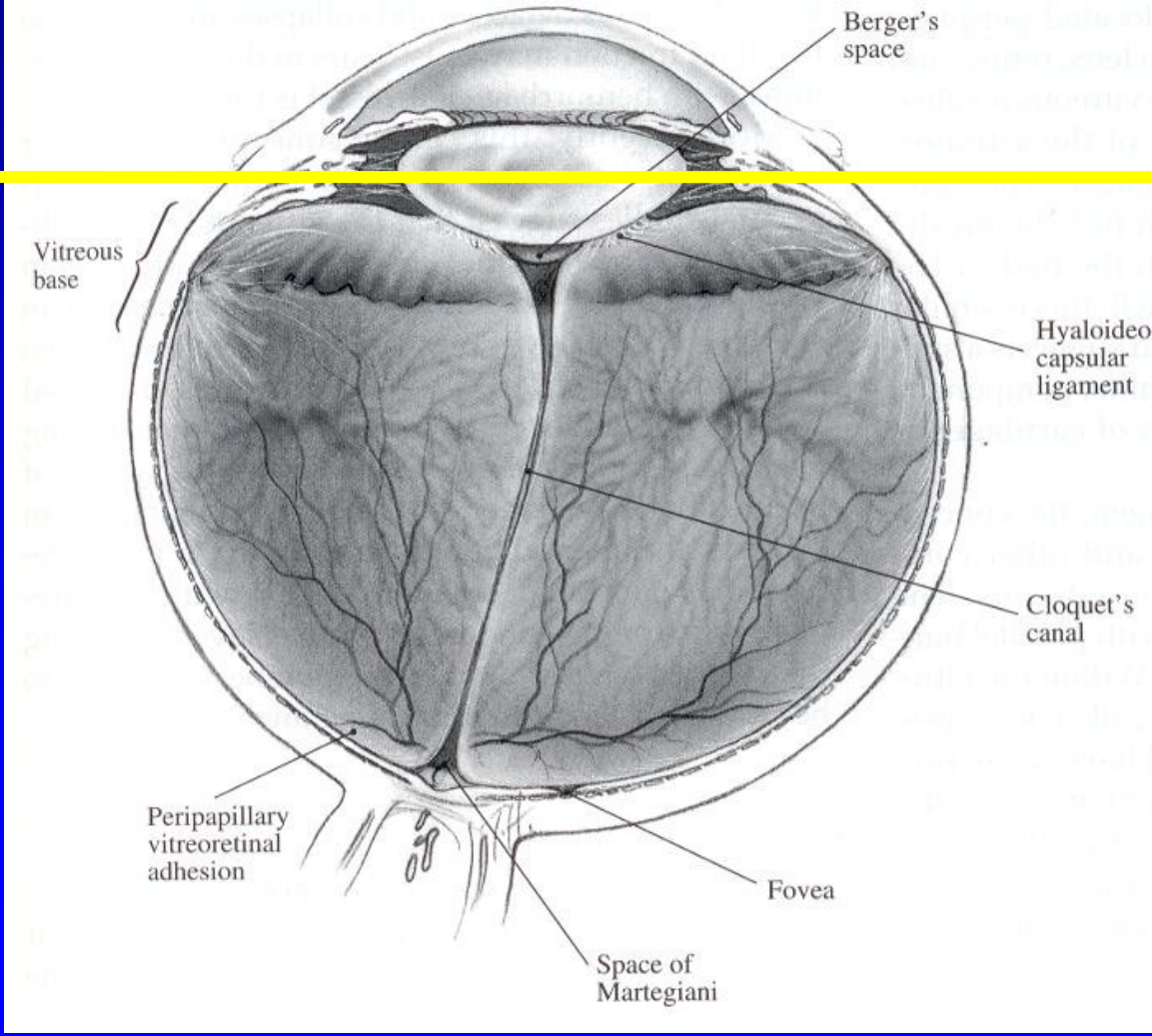
Vitreoretinal diseases

(diseases of vitreous and retina)

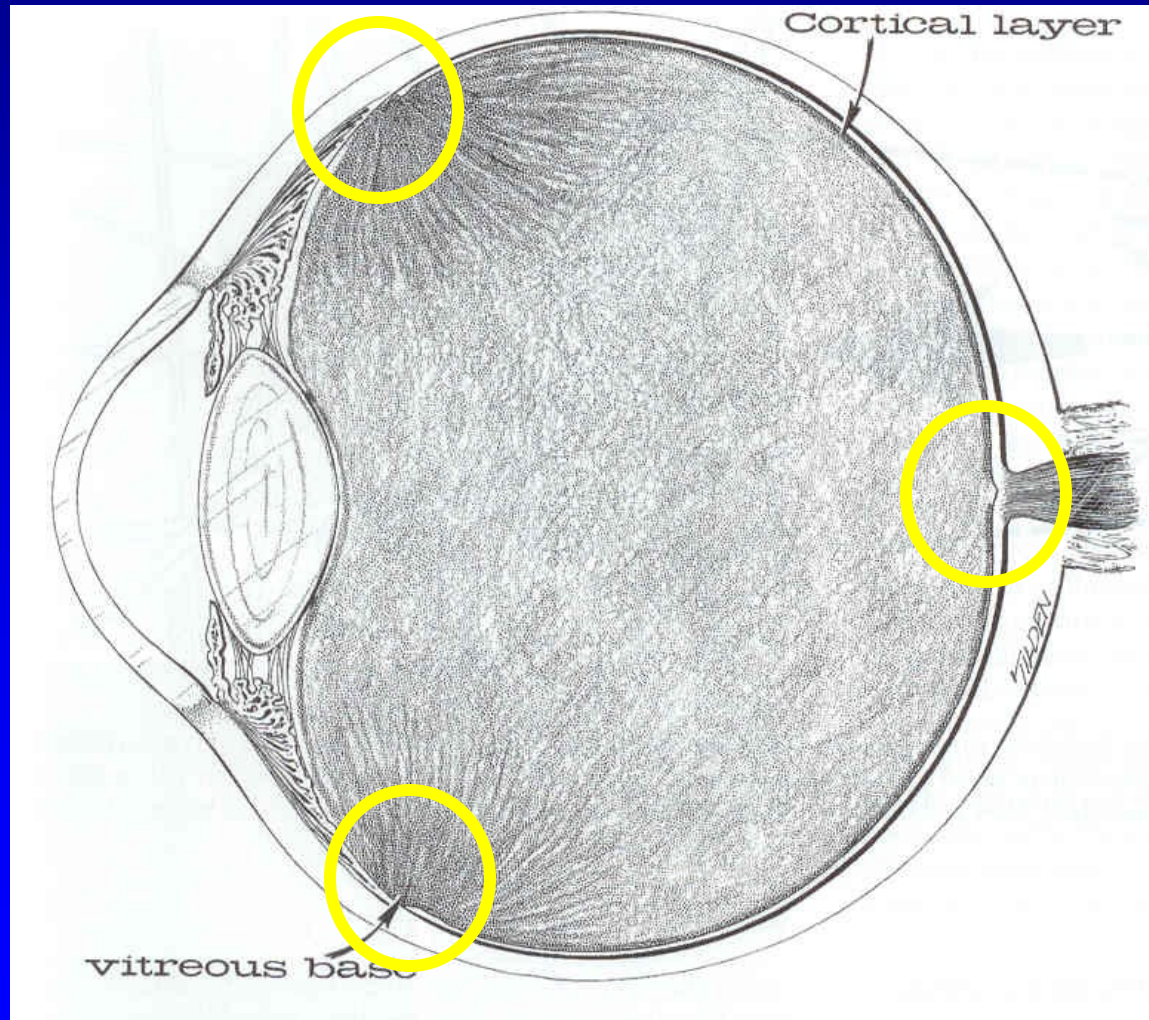
Anatomy of the EYE

anterior

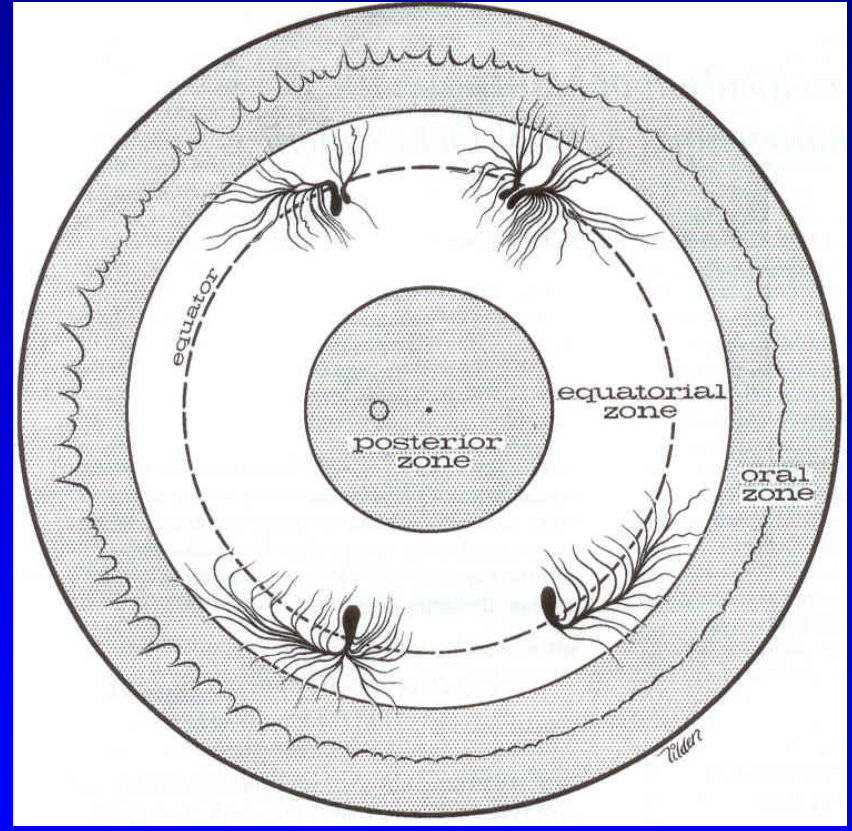
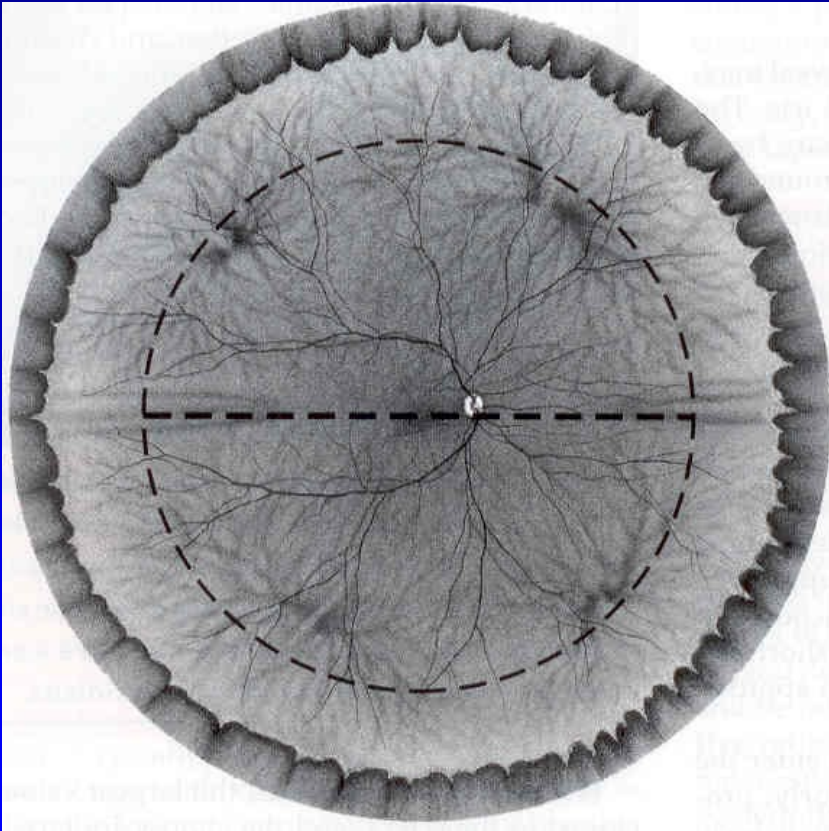
posterior
segment



Vitreous anatomy



Retinal anatomy



Retinal histology

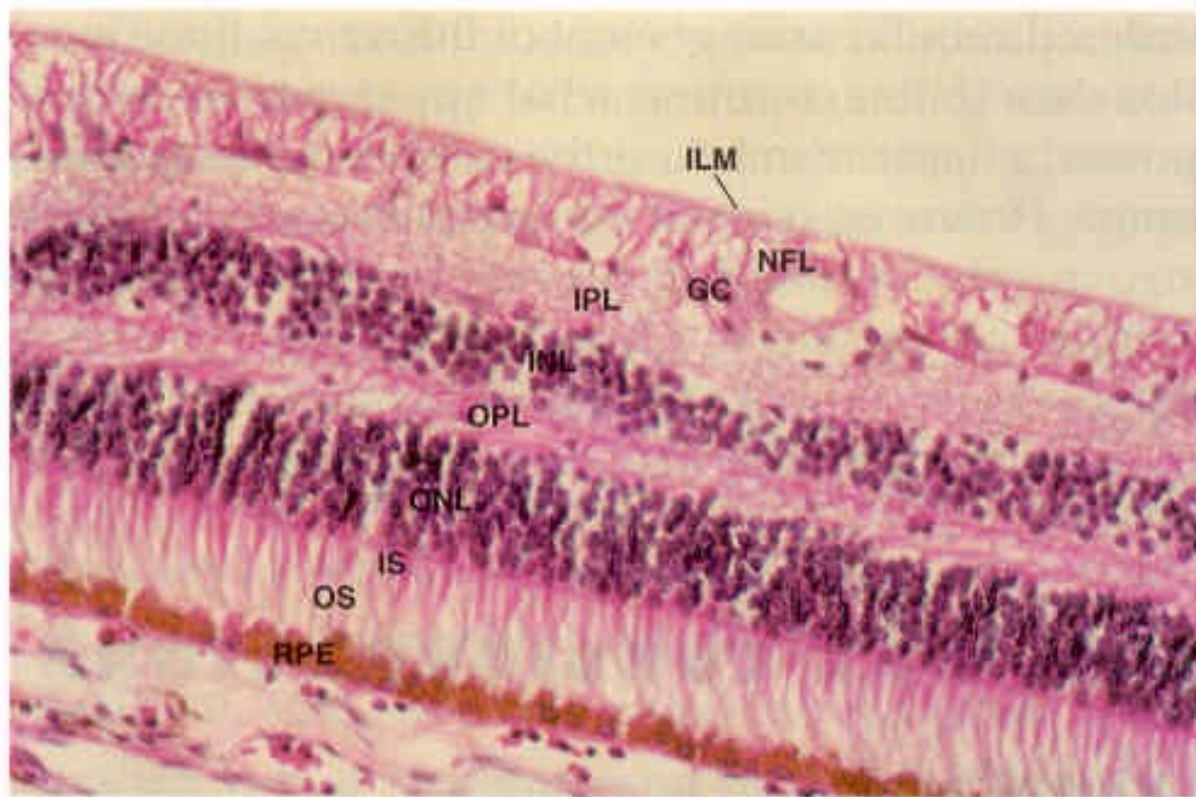


FIGURE 2-3 The sensory retina and pigment epithelium (*RPE*). The photoreceptor outer segments (*OS*) and inner segments (*IS*) have their cell nuclei within the outer nuclear layer (*ONL*). They synapse with the neurons of the inner nuclear layer (*INL*) in the outer plexiform layer (*OPL*). These neurons in turn synapse with the ganglion cells (*GC*) in the inner plexiform layer (*IPL*). Axons from the ganglion cells form the nerve fiber layer (*NFL*). The internal limiting membrane (*ILM*) is the inner margin of the sensory retina. Hematoxylin & eosin, X156.

Retinal histology

Anatomy of the Retina

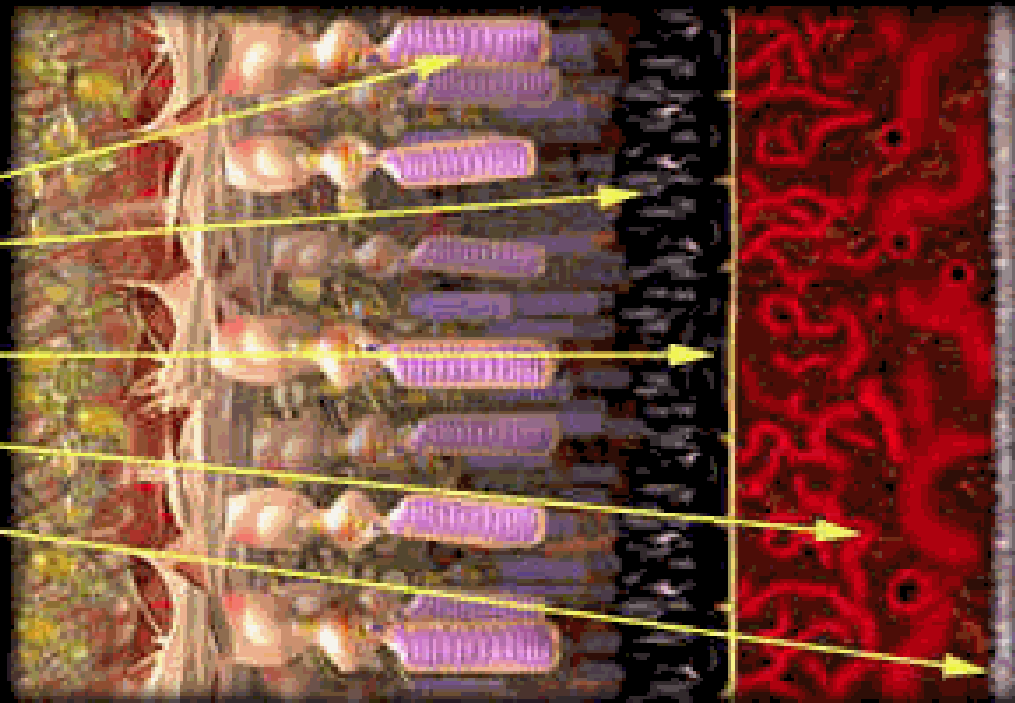
photoreceptors

RPE

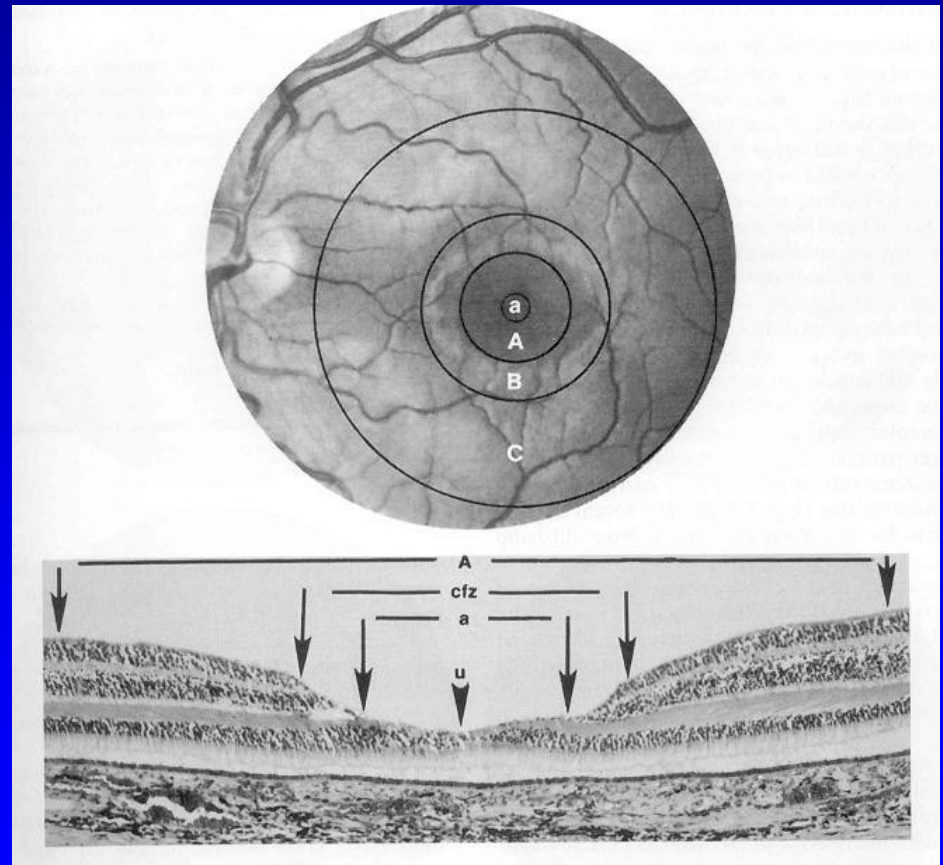
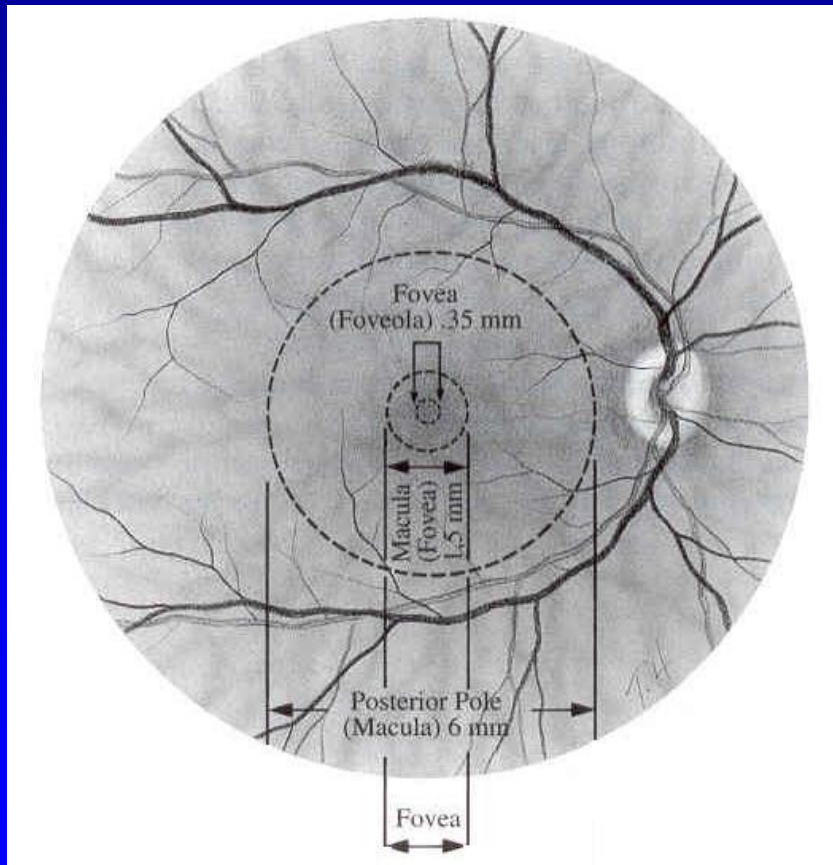
Bruch's membrane

choroid

sclera



Macular anatomy



Retinal detachment- history

- Gonin (1920) – primary role of retinal tear in retinal detachment

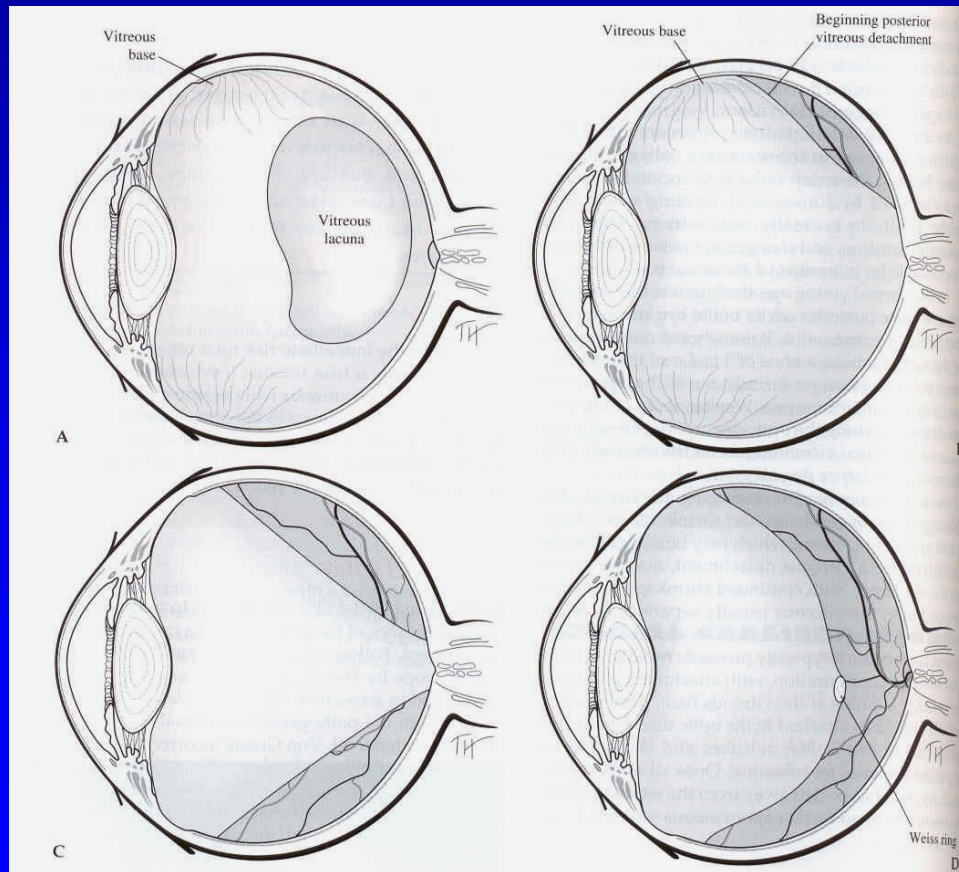


Retinal detachment- classification

- rhegmatogenous
- tractional
- serose

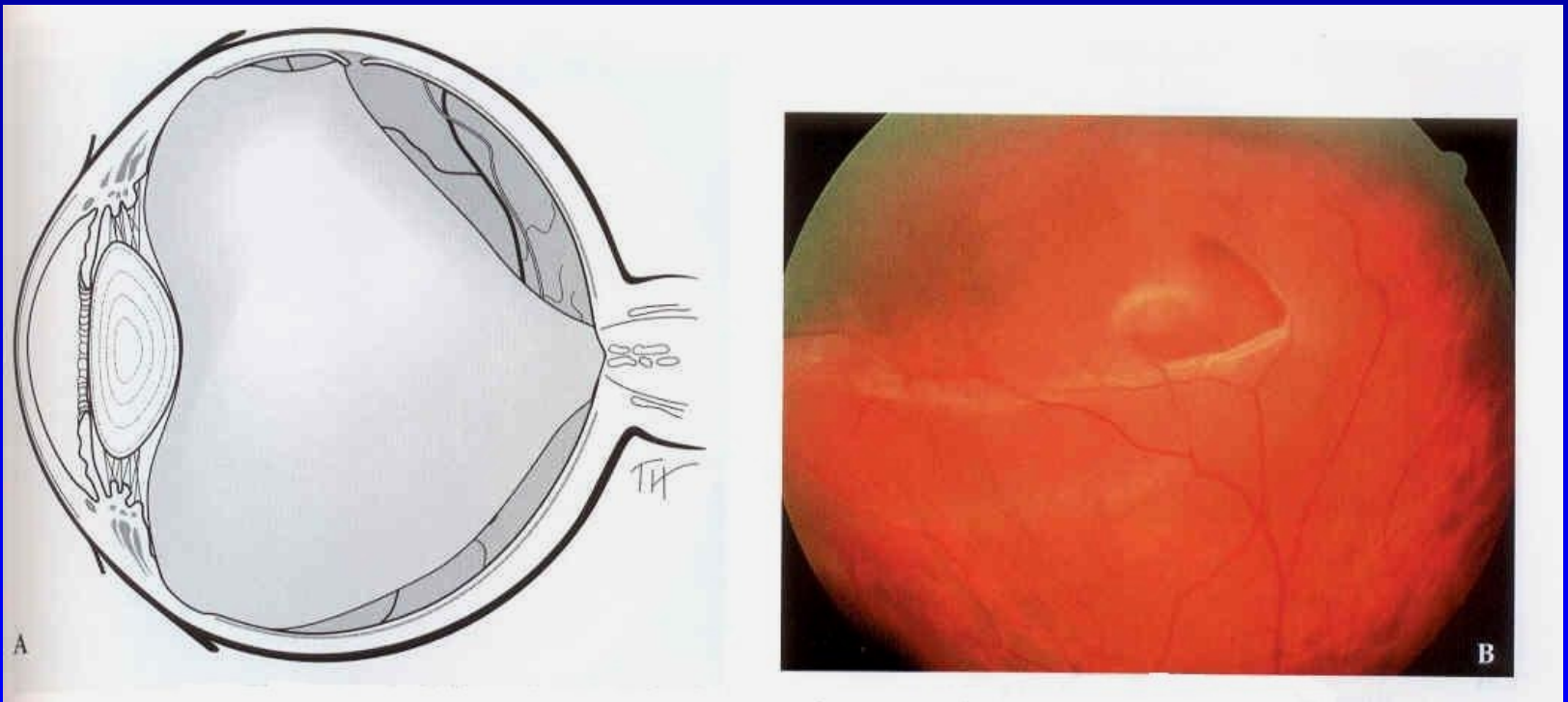
Rhegmatogenous RD

Posterior vitreous detachment



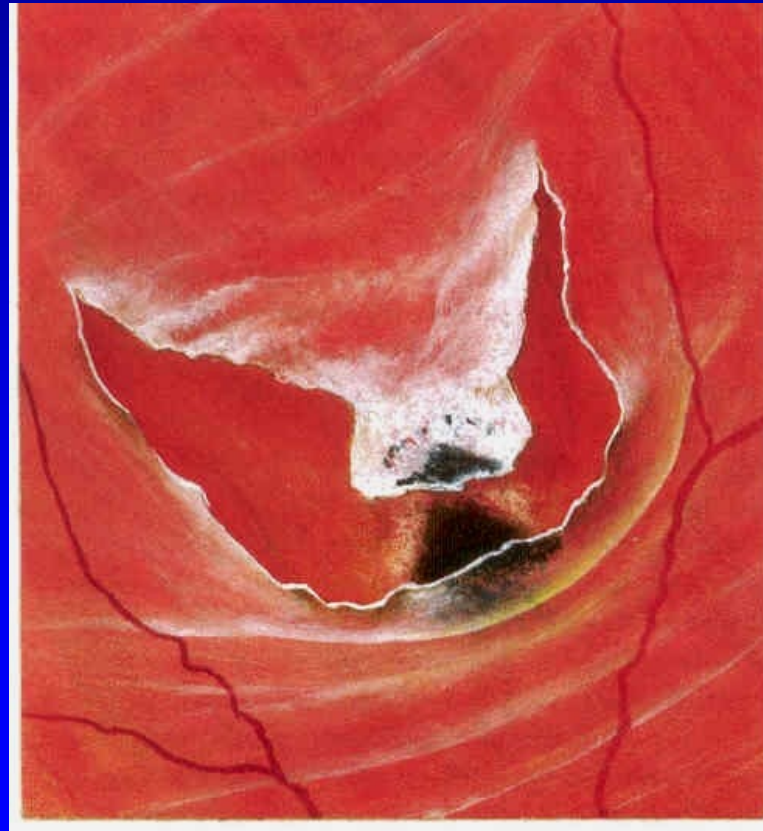
Rhegmatogenous RD

Retinal tear=(rhegma)



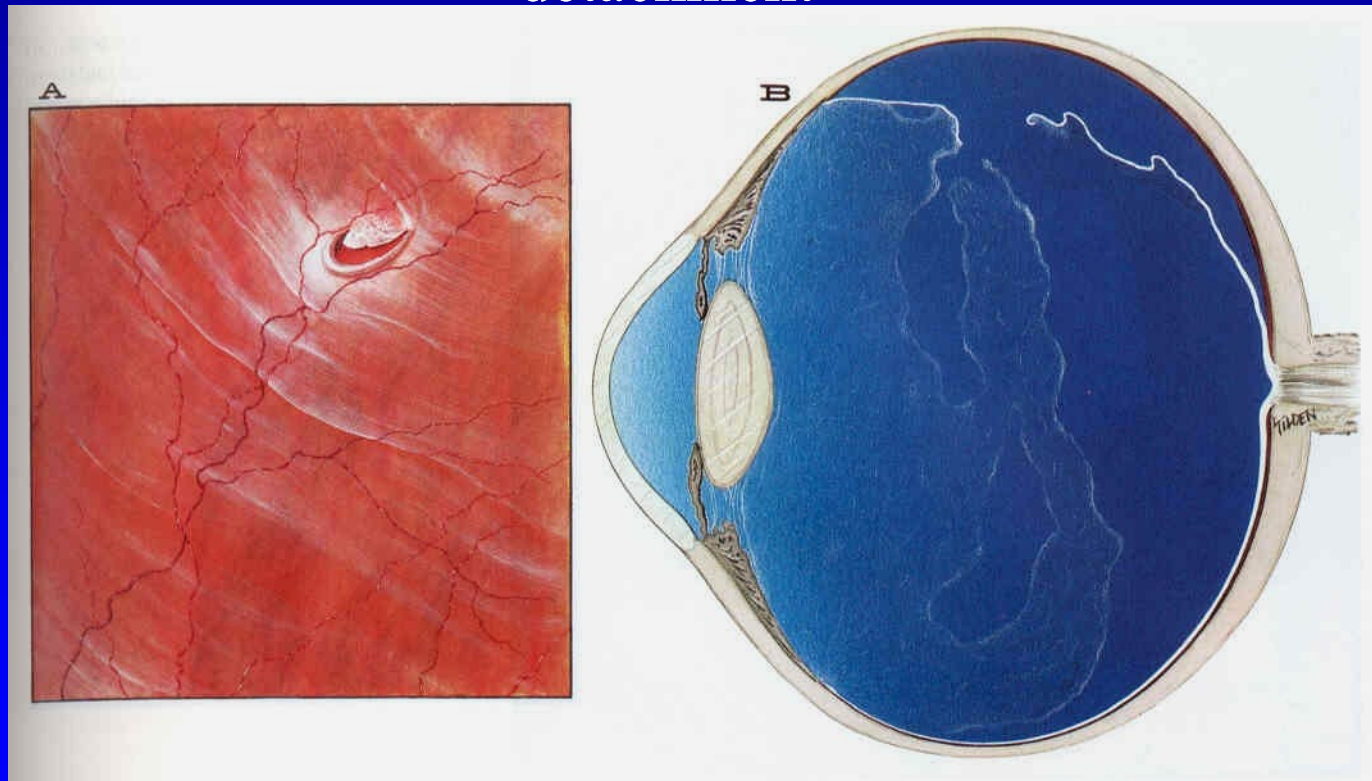
Rhegmatogenous RD

Retinal tear=(rhegma)



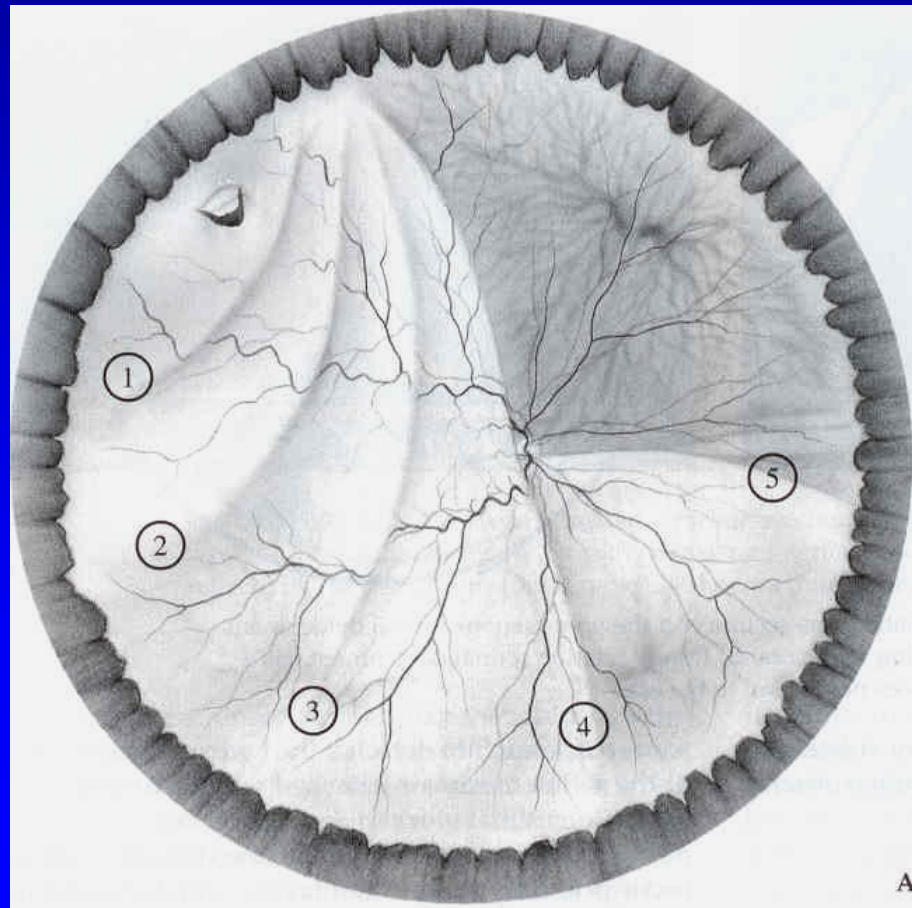
Rhegmatogenous RD

Pathological posterior vitreous
detachment



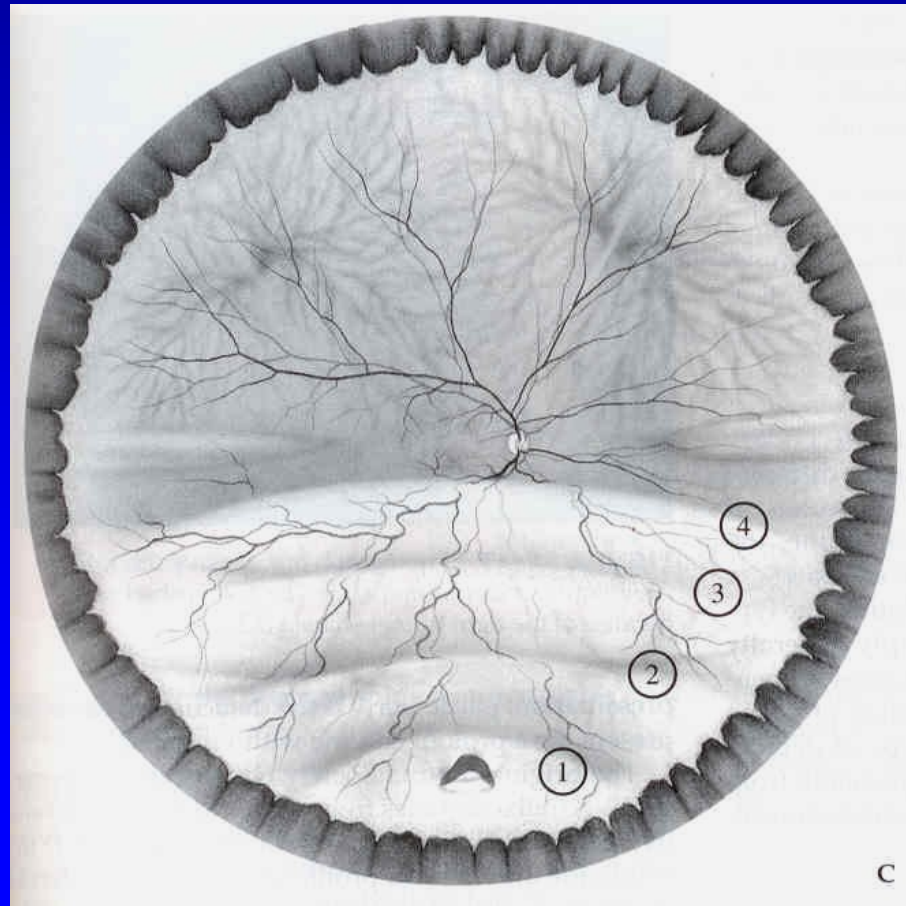
Rhegmatogenous RD (upper quadrants)

quickly progression



Rhegmatogenous RD (lower quadrants)

slowly progression



Rhegmatogenous RD

(symptoms)

- Fotopsia (flashes)
- Black spots (black snow)
- Scotoma (black spot in peripheral visual field)
- Decrease in visual acuity
- Metamorfopsia

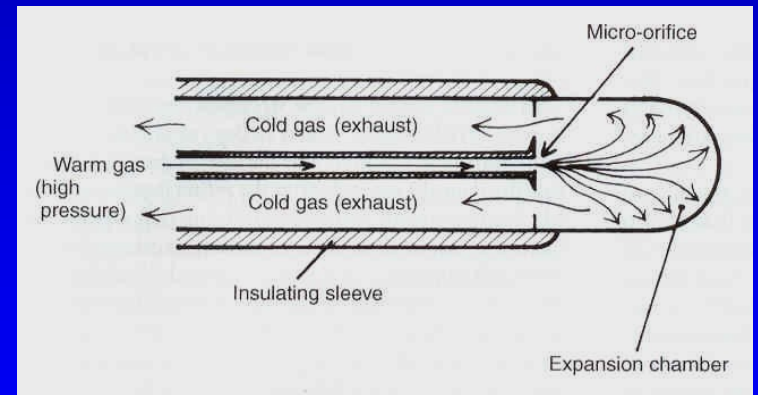
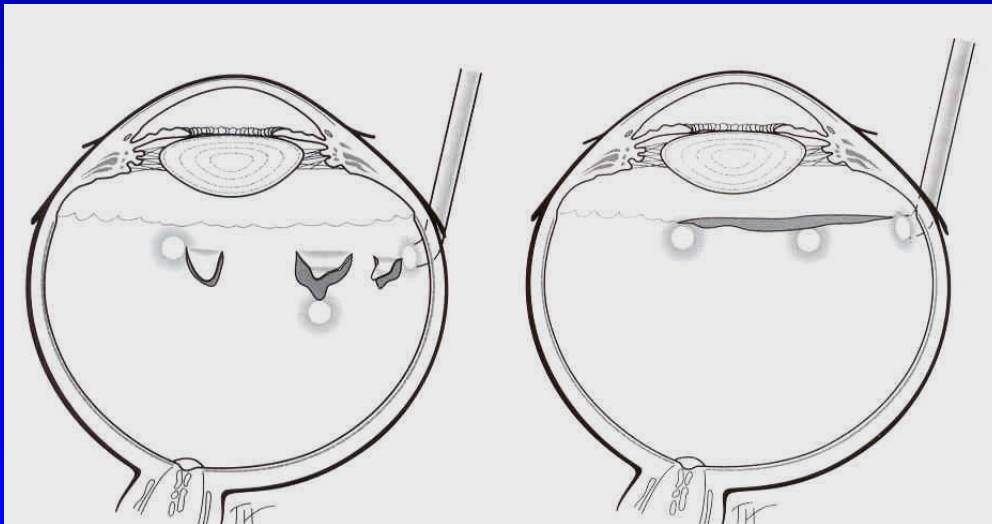
Rhegmatogenous RD

(therapy)

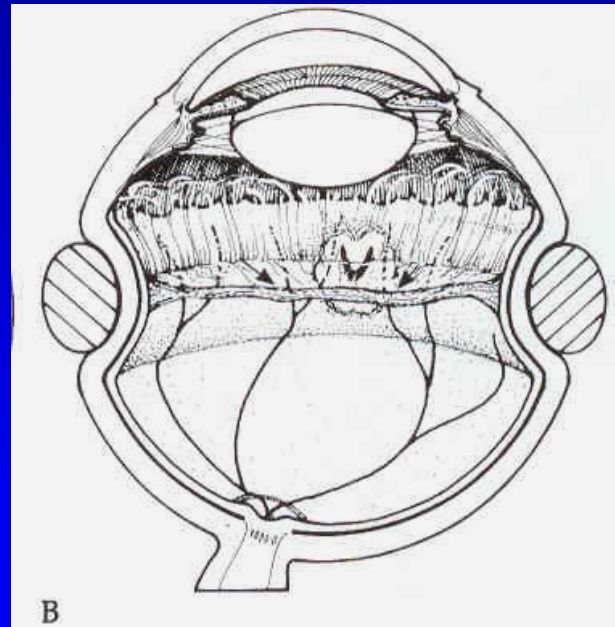
- Surgical
 1. Extrabulbar operations (kryopexy, cerclage, plombage)
 2. Intraocular operations (PPV with or without tamponade)

Kryopexy

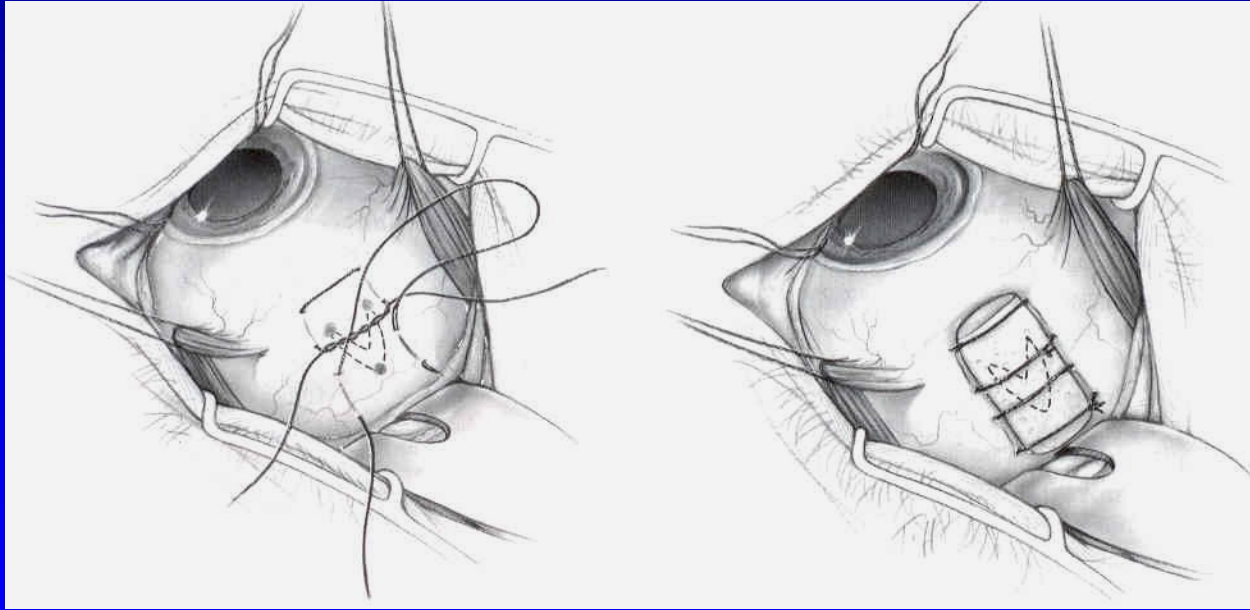
Development of **chorioretinal adhesion**
(scar)



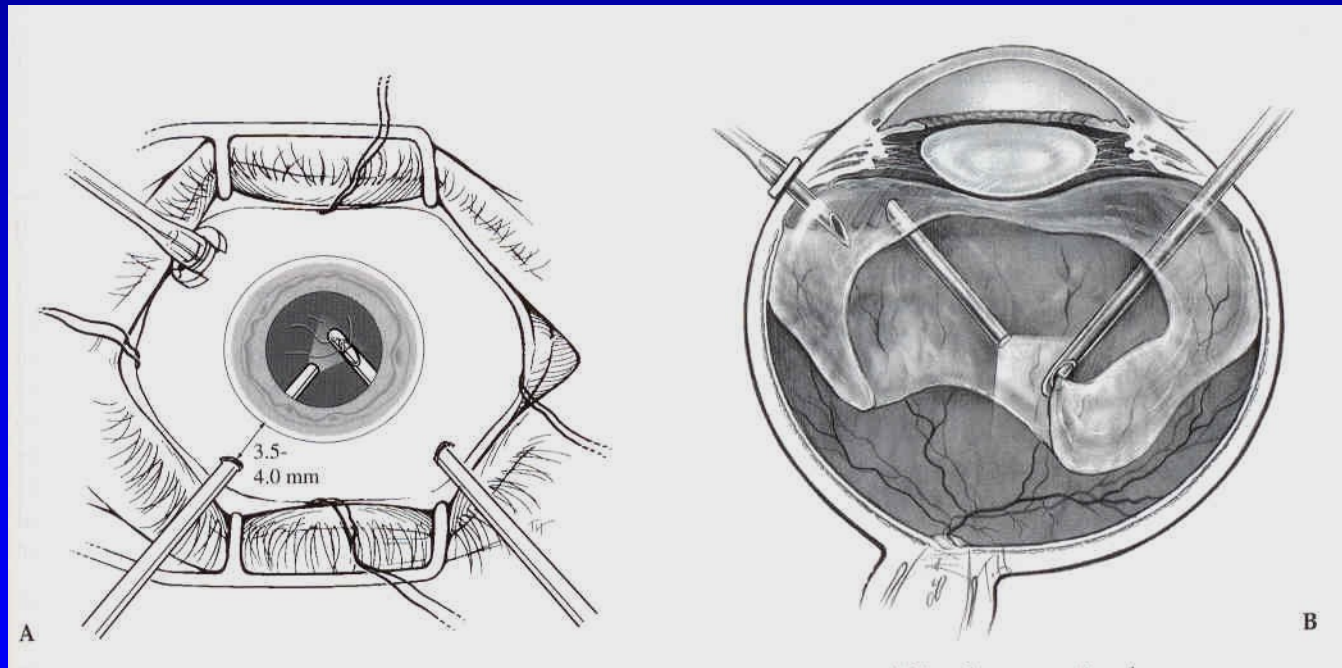
Cerclage



Plombage

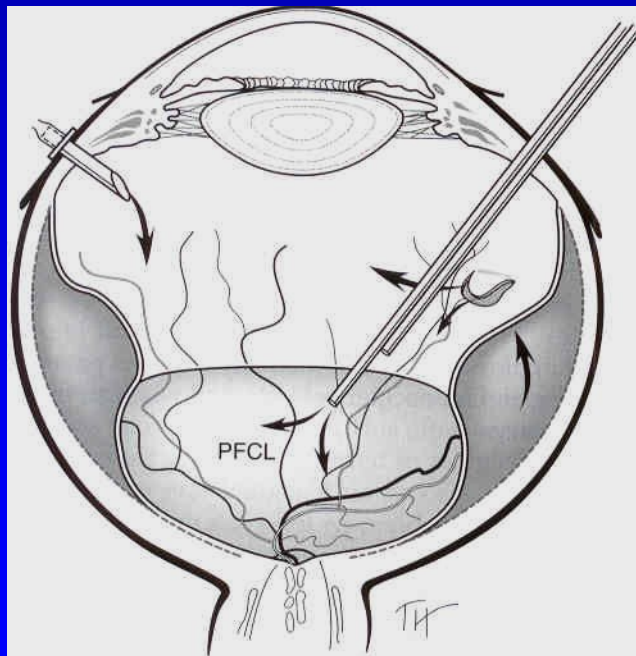


Pars plana vitrectomy (PPV)

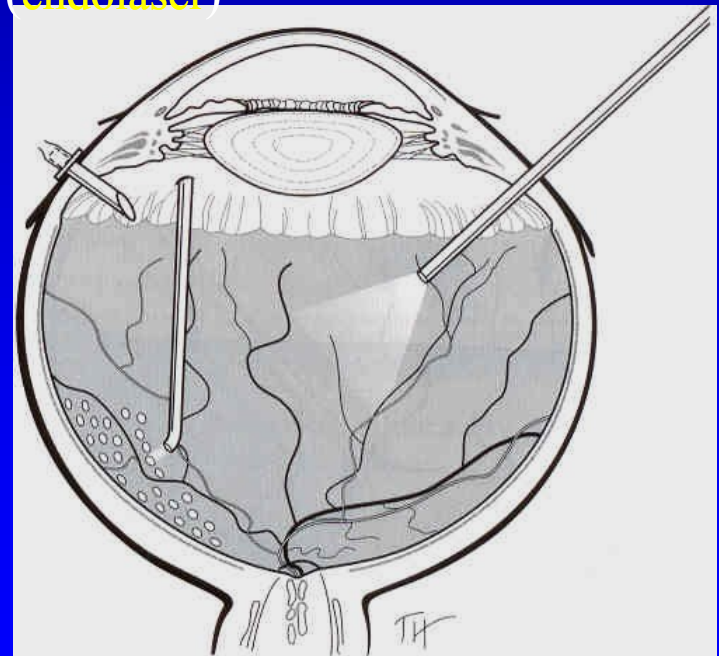


Pars plana vitrectomy (PPV)

Retinal attachment (PFC)



development of
chorioretinal adhesion
(endolaser)



Pars plana vitrectomy (PPV)

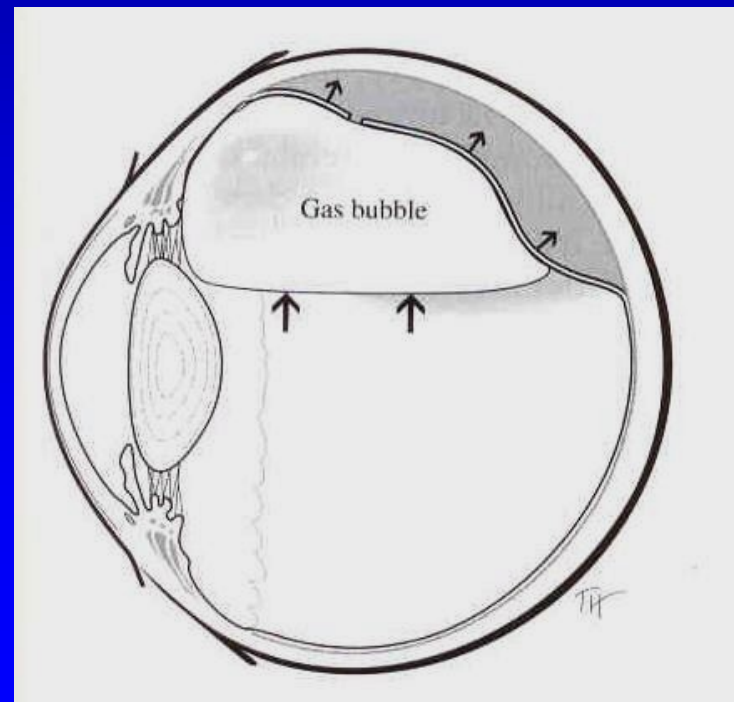
- Internal tamponade
 - Gas (SF₆, C₃F₈)
 - Silicon oil

Pars plana vitrectomy (PPV)

Gas tamponade

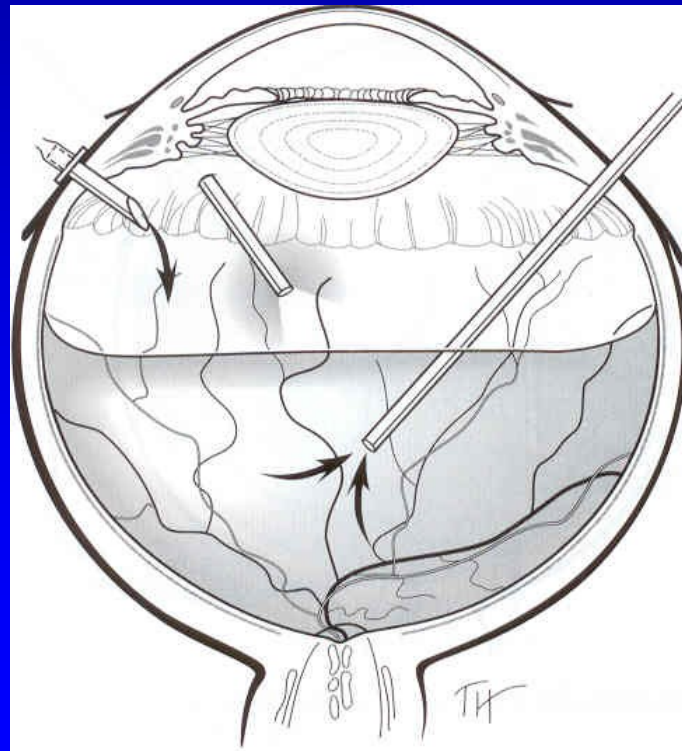
TABLE I. CHARACTERISTICS OF COMMONLY USED INTRAOCULAR GASES

Gas type	Expansion	Average duration	Volume used for PR
Sulfur hexafluoride (SF_6)	2×	10–14 days	0.5 mL
Perfluoropropane (C_3F_8)	4×	30–45 days	0.35 mL



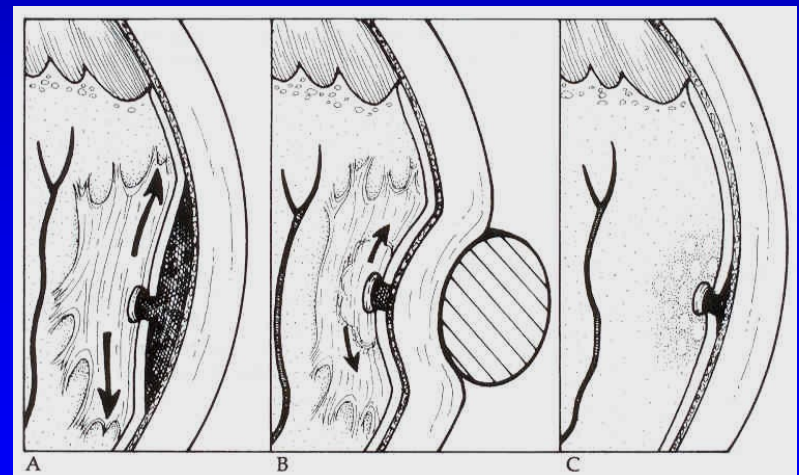
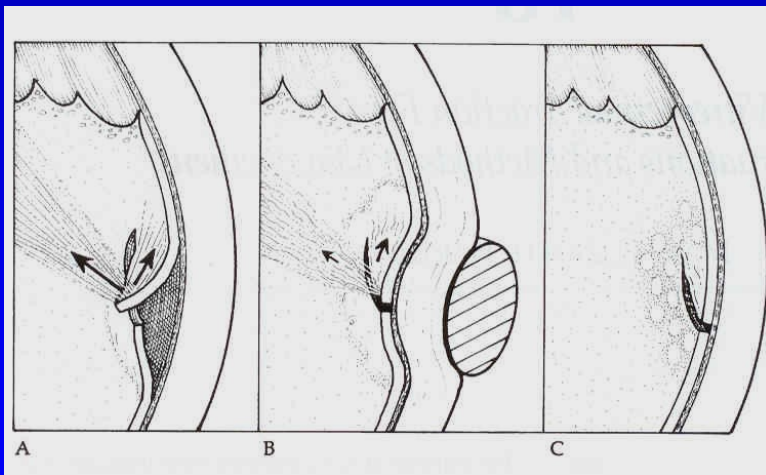
Pars plana vitrectomy (PPV)

Silicon oil tamponade



Tractional forces

Comparing of status before OP, after extrabulbar OP and after PPV

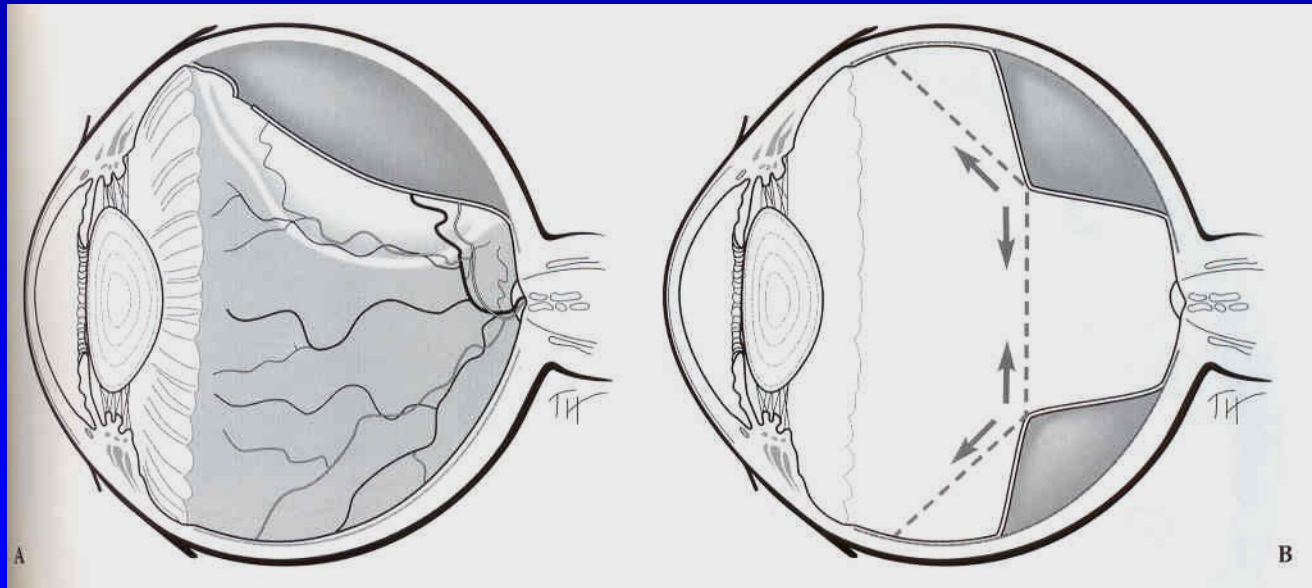


Tractional RD

- can't be find any tear
- concave surface
- can be detected epiretinal and subretinal membranes
(diabetic retinopathy, trauma)

Tractional RD

rhegmatogenous x tractional

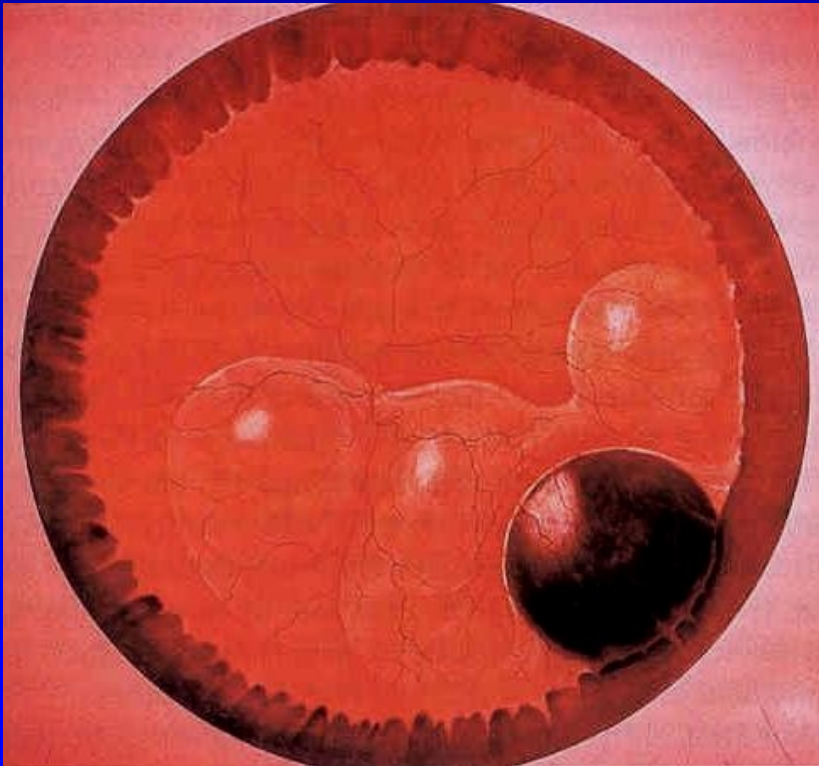


Serose RD

- can't be find any tear
- convex surface (high balloons)
- free movement of subretinal fluid
(tumors, uveitis, chorioidal detachment)

Serose RD

Malignant melanoma of uvea



Ultrasound of eye with MMU

