



Q

Rhegmatogenous RD Repair

What three things ***must*** be accomplished to successfully repair a rhegmatogenous RD?

1) Find all

two words

A

Rhegmatogenous RD Repair



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Failing to accomplish one (or more) of these is the most common cause of RD surgery failure in the early post-op period!



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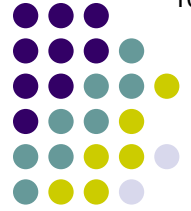


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If the RD is superior but doesn't cross 12 o'clock, where is the break?

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If the RD is superior but doesn't cross 12 o'clock, where is the break?

It is within 1.5 clock-hours of the uppermost border of whichever side (ie, nasal vs temporal) of the RD is

higher vs
lower

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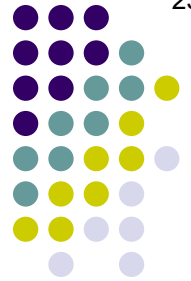
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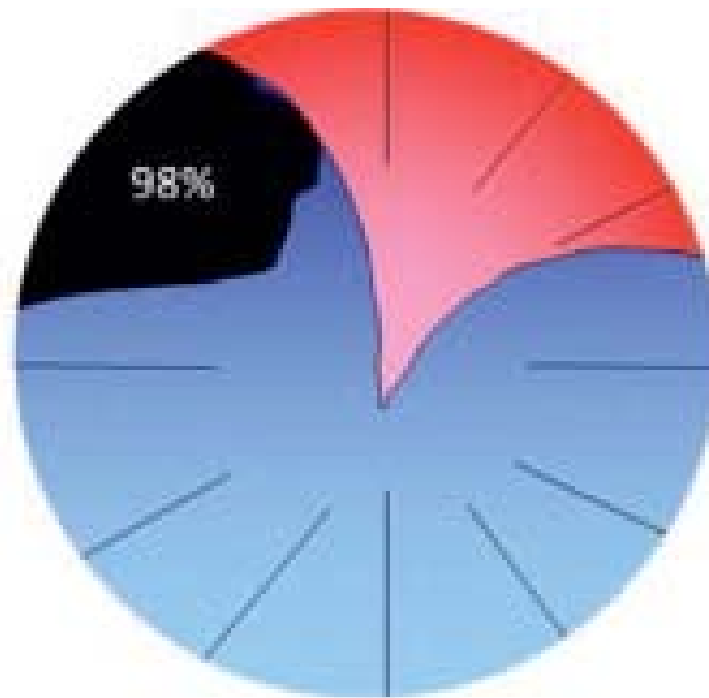
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#1: In a superior RD that does not cross the 12 o'clock meridian, the break is within 1.5 clock-hours of the uppermost border of whichever side (ie, nasal vs temporal) of the RD is higher



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If the RD is superior and crosses 12 o'clock, where is the break?

Per Lincoff rules, where is the break?

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Per Lincoff

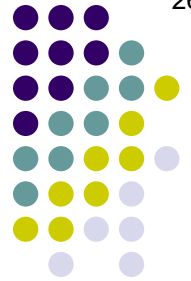
It is within 1.5 clock-hours of straight-up 12 o'clock

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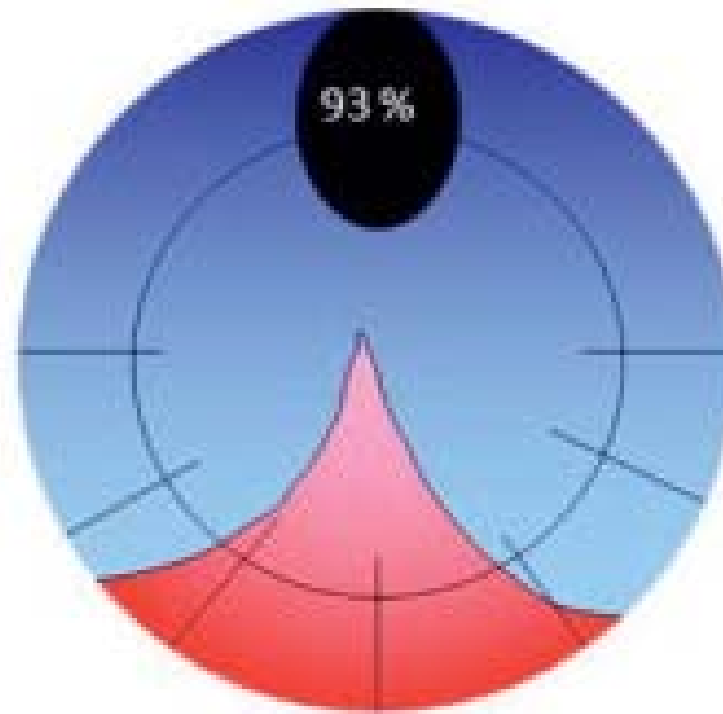
2) A superior RD that does cross the 12 o'clock meridian

3) An inferior RD that is 'typical' in appearance

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Rhegmatogenous RD Repair



#2: In a superior RD that *does* cross the 12 o'clock meridian, the break **is within 1.5 clock-hours of straight-up 12 o'clock**



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Per Lincoff: If the RD is inferior and 'typical' in appearance, where is the break?

- 1) A superior RD
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- 3) **An inferior RD that is 'typical' in appearance**
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higher vs
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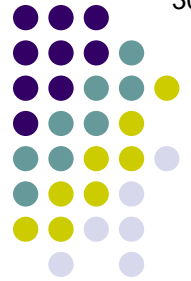
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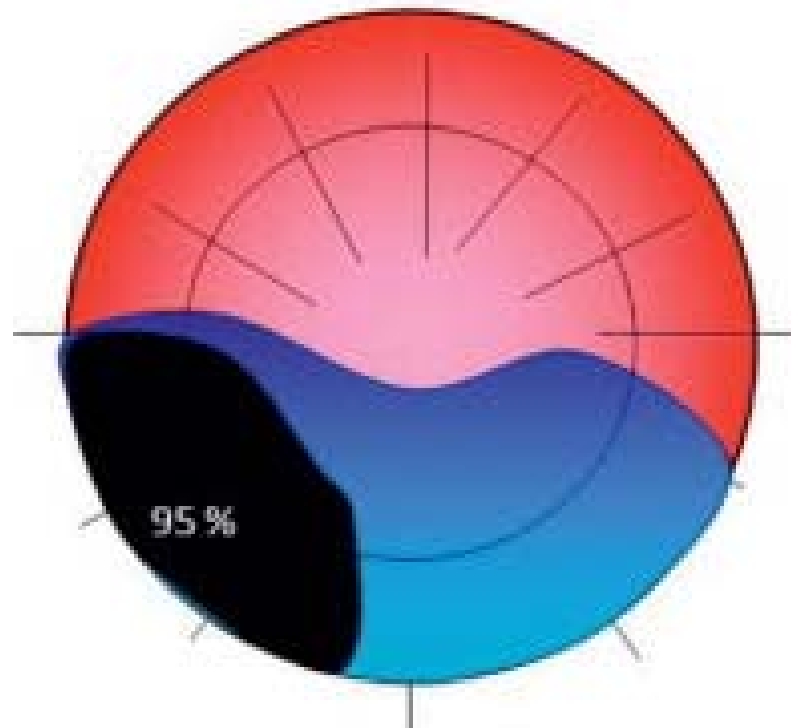
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Rhegmatogenous RD Repair



#3: In an inferior RD that is 'typical' in appearance, the break is on whichever side (ie, nasal vs temporal) of the RD is higher



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Describe the configuration of the RD in the following situations. What are they?

If the RD is inferior and 'bullous,' where is the break?

clock meridian

meridian

3) An inferior RD that is typical in appearance

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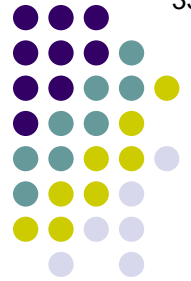
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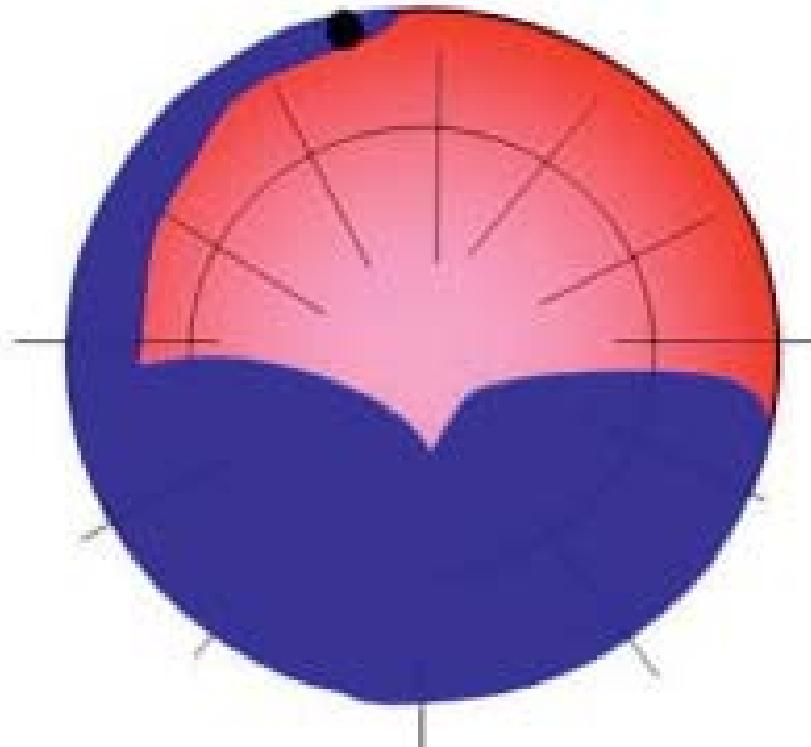
Counterintuitively, it is **superior**, with the liquid vitreous tracking inferiorly via an occult peripheral retinal sinus

3) An inferior RD that is typical in appearance

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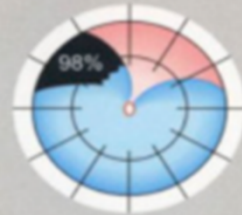
Rhegmatogenous RD Repair



#4: In a bullous inferior RD, the break is superior, with the liquid vitreous tracking inferiorly via a peripheral retinal sinus

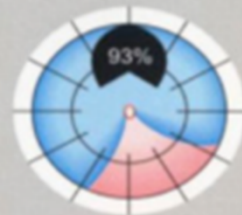
Rhegmatogenous RD Repair

Rules to Find the Primary Break



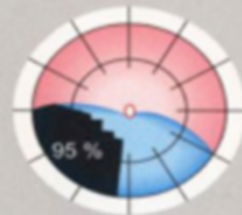
Rule 1:

Superior temporal or nasal detachments:
In 98 % the primary break lies within 1½ clock hours of the highest border.



Rule 2:

Total or superior detachments that cross the 12 o'clock meridian:
In 93 % the primary break is at 12 o'clock or in a triangle, the apex of which is at the ora serrata, and the sides of which extend 1½ clock hours to either side of 12 o'clock.



Rule 3:

Inferior detachments:
In 95 % the higher side of the detachment indicates on which side of the disc an inferior break lies.



Rule 4:

«Inferior» bullous detachment:
Inferior bullae in a rhegmatogenous detachment originate from a superior break.

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The Lincoff Rules



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- 3) Bring retinal tissue into apposition and formation of a choroidal neovascularization as a barrier between the break and the subretinal space. Note that accomplishing this requires eliminating any vitreoretinal traction that may be present.

What are the two main surgical approaches for inducing the inflammatory response?

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What are the two main surgical approaches for inducing the inflammatory response?

--Laser

--Transscleral cryotherapy



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What are the surgical approaches to accomplishing this step?

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Rhegmatogenous RD Repair

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How does a SB bring the retina and underlying tissue into apposition?

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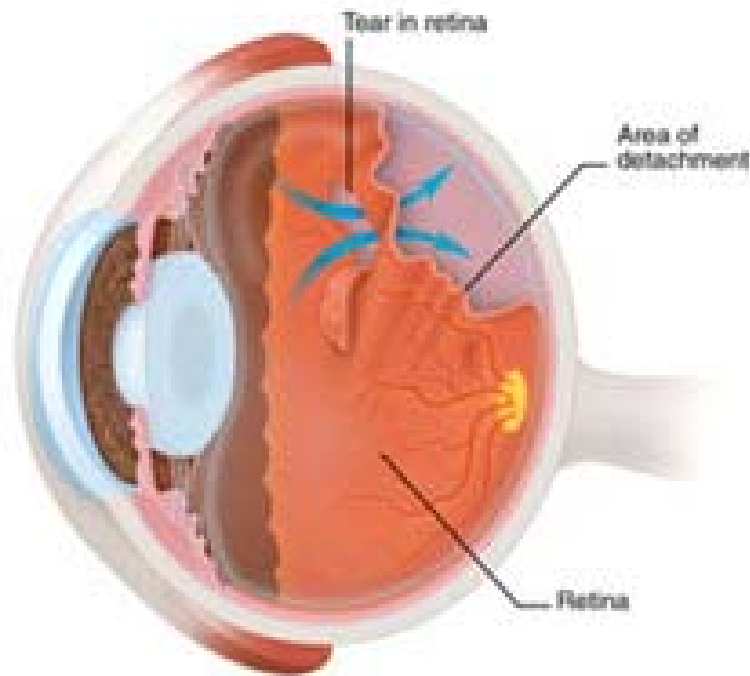
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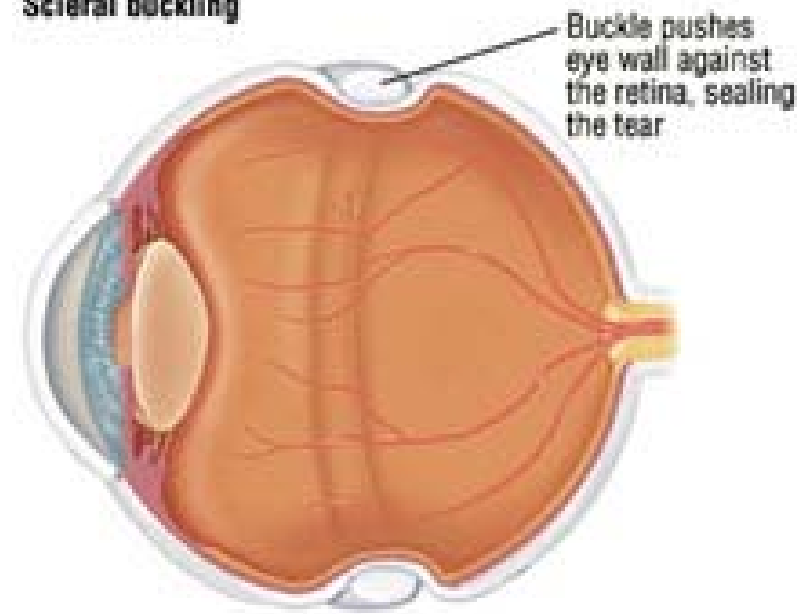
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Rhegmatogenous RD Repair



Scleral buckling



Scleral buckling

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Why does a myopic shift occur?

The globe is noncompressible, so reducing its equatorial diameter produces a proportionate increase in its axial length. This increase in AL causes the myopic shift.

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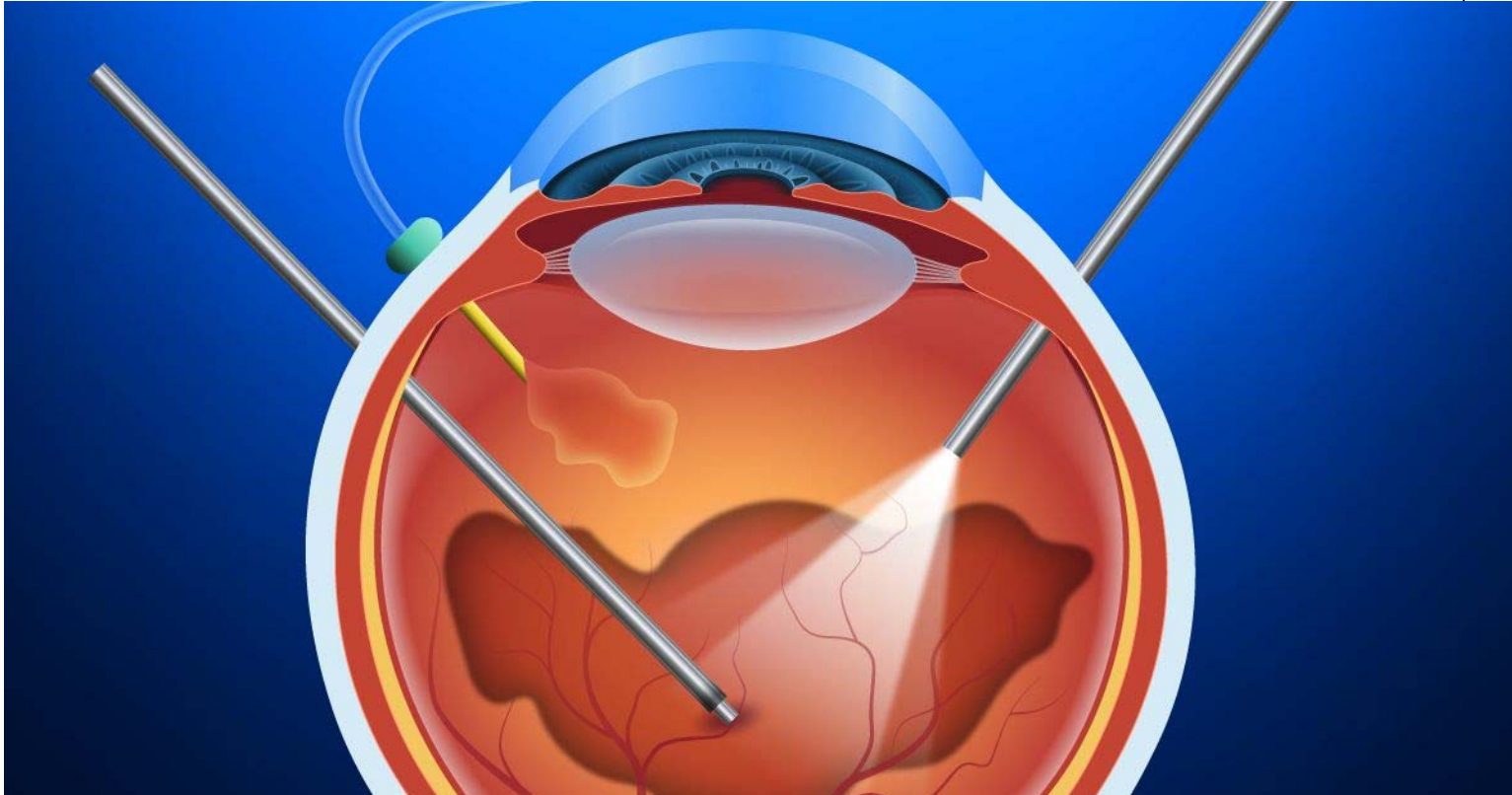
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Briefly, how is a PPV performed?

Three spaced-apart stab incisions are made through the sclera and pars plana portion of the ciliary body. Via these incisions, a light source, irrigation cannula and vitreous cutter are introduced into the vitreous cavity. The cutter is used to remove the vitreous gel.

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Rhegmatogenous RD Repair



PPV



Q

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What is the basic procedure in PR?

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Rhegmatogenous RD Repair

What is the basic procedure in PR?

It is as simple as it is elegant. A gas (air; SF₆; C₃F₈) is injected into the vitreous cavity. The floating gas bubble pushes against the RD, and in doing so forces the subretinal fluid back out through the break, as well as pushes the retinal-break region into apposition against the underlying tissue. All via a simple office procedure!

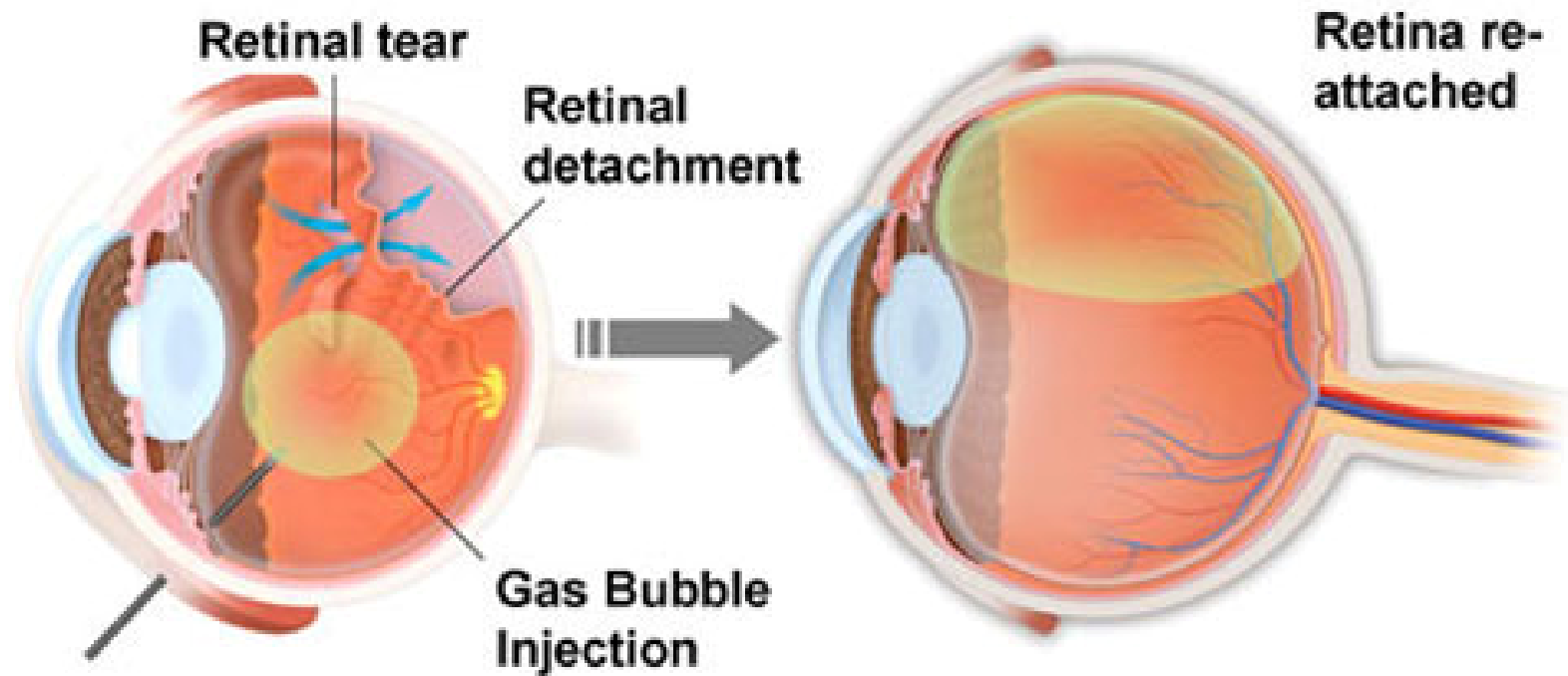
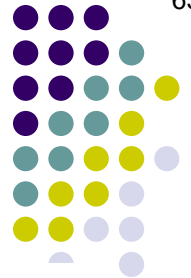
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Rhegmatogenous RD Repair



Pneumatic retinopexy



Q

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What are the names of these gases?

SF_6 :

C_3F_8 :

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C_3F_6 : Perfluoropropane

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- Location of breaks:** The break(s) must be located between 4 and 8 o'clock

What are the surgical approaches to accomplishing this step?

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- Vitreoretinal traction status:** There must be none, or very little

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- Vitreoretinal traction status:** There must be none, or very little
- Pt factor:**

What are the surgical approaches to accomplishing this step?

- Scleral buckle (SB)
- Pars plana vitrectomy (PPV)
- Pneumatic retinopexy (PR)**

vitreoretinal traction that may be present.

a barrier between
. Note that
ating any



A

Rhegmatogenous RD Repair

What is the basic procedure in PR?

It is as simple as it is elegant. A gas (air; SF₆; C₃F₈) is injected into the vitreous cavity. The floating gas bubble pushes against the RD, and in doing so forces the subretinal fluid back out through the break, as well as pushes the retinal-break region into apposition against the underlying tissue. All via a simple office procedure!

Sounds great! Why not do this for all rhegmatogenous RDs?

Unfortunately, not all RRDs are good candidates for PR. To qualify for PR, the RD should have the following characteristics:

- Number of breaks:** Ideally there is only one, but if more than one are present, they must be few in number and all located within 1-2 clock-hours of each other
- Location of breaks:** The break(s) must be located between 4 and 8 o'clock
- Vitreoretinal traction status:** There must be none, or very little
- Pt factor:** The patient must be willing and able to maintain the (possibly awkward) head position needed to keep the gas bubble pressing against the retinal break

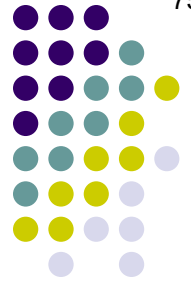
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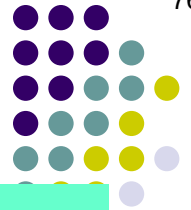
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Rhegmatogenous RD Repair



Pneumatic retinopexy: Head positioning



Q

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Sounds great! Are all RDs candidates for PR?

Far from it, unfortunately. To qualify for PR, the RD should have the following characteristics:

--Ideally there is only one retinal break. But if more than one are present, they must be few in number, and all must lie within 1-2 clock-hours of each other

The break(s) must be located superiorly (upper 1/3 of retina)

Which method of 'inflammation induction' (ie, laser or cryo) is usually used in conjunction with PR?

(possibly awkward) head position

apposition long enough to allow formation of a

What are the surgical approaches to accomplishing this step?

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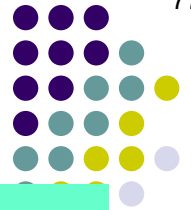
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Both are commonly used

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Q

Rhegmatogenous RD Repair

What three things ***must*** be accomplished to successfully repair a rhegmatogenous RD?

- 1) Find all retinal breaks
- 2) Induce an inflammatory response in the chorioretinal tissue immediately surrounding the break
- 3) Bring the inflamed choroid and retinal tissue into apposition, creating a chorioretinal scar, which will act as a barrier between the break and the subretinal space. Note that accomplishing this requires eliminating any vitreoretinal traction that may be present.

What's the most common cause of failure in the late post-op period?

Failing to accomplish one (or more) of these is the most common cause of RD surgery failure in the late post-op period!



Q/A

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- What's the most common cause of failure in the late post-op period?*
 Development of a chorioretinal scar, which will act as a barrier between the break and the subretinal space. Note that accomplishing this requires eliminating any vitreoretinal traction that may be present.

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What's the most common cause of failure in the late post-op period?
Development of PVR

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What does PVR stand for in this context?

What's the most common
Development of PVR

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By what mechanism does PVR cause late RD repair failure?
It leads to

three words

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What's the most common
Development of **PVR**

What does PVR stand for in this context?
Proliferative vitreoretinopathy

By what mechanism does PVR cause late RD repair failure?
It leads to vitreo-retinal traction

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Proliferative vitreoretinopathy

What's the most common
Development of **PVR**

By what mechanism does PVR cause late RD repair failure?
It leads to vitreo-retinal traction—and we're right back where we started.

accomplishing this requires eliminating any vitreoretinal traction that may be present.

Failing to accomplish one (or more) of these is the most common cause of RD surgery failure in the late post-op period!