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

--Find all two words
What three things must be accomplished to successfully repair a rhegmatogenous RD?

--Find all retinal breaks
What three things **must** be accomplished to successfully repair a rhegmatogenous RD?

--Find all **retinal breaks**

--Induce an inflammatory response in the immediately surrounding the break
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--Find all \textcolor{magenta}{retinal breaks}

--Induce an \textcolor{magenta}{inflammatory response} in the \textcolor{magenta}{chorioretinal tissue} immediately surrounding the break
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--Find all retinal breaks

--Induce an inflammatory response in the chorioretinal tissue immediately surrounding the break

--Bring the inflamed choroid and retinal tissue into apposition long enough to allow formation 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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*Failing to accomplish one (or more) of these is the most common cause of RD surgery failure in the early post-op period!*
What three things **must** be accomplished to successfully repair a rhegmatogenous RD?

--- Find all **retinal breaks**

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--- **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 cryo

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

By indenting the sclera beneath the retinal break. Indention pushes the subretinal tissue in the direction of the detached retina. It may also dissipate vitreoretinal traction.

What effect does SB have on the refractive state of the eye?

A myopic shift often results

Why does a myopic shift occur?

If the globe is squeezed circumferentially, the resulting increase in A-P length produces axial myopia.
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Are all SBs circumferential, ie, do they encircle the entire globe?

No, on occasion the retinal break(s) dictates radial placement.

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Are they always oriented parallel to the equator of the globe?
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Which method of 'inflammation induction' (ie, laser or cryo) is usually used in conjunction with SB surgery?

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

The vitreous overlying a retinal break is the source of traction that pulls the retina away from the underlying tissue. In a PPV, the vitreous—and hence the source of this traction—is removed. That's all there is to it—remove the vitreous, and the retinal simply falls back in place. Well, no. A substance (usually a gas or an oil) must be introduced into the vitreous cavity to promote and maintain apposition.

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Rhegmatogenous RD Repair

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Which method of ‘inflammation induction’ (i.e., laser or cryo) is usually used in conjunction with PPV surgery?

Laser

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Rhegmatogenous RD Repair

What are the surgical approaches to accomplishing this step?

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

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!

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 the macula)
--The traction must be minimal
--The patient must be willing and able to adopt and maintain the (possibly awkward) head position needed to keep the gas bubble pressing against the retinal break
Rhegmatogenous RD Repair

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What are the names of these gases?

SF₆, C₃F₈

What are the basic procedures to accomplishing this step?

--Scleral buckle (SB)
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**apposition**

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What are the names of these gases?

SF₆: Sulfur hexafluoride
C₃F₈: Perfluoropropane

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Rhegmatogenous RD Repair

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--The break(s) must be located superiorly (upper 1/3 of the eye).
--Vitreoretinal traction must be minimal.
--The patient must be willing and able to adopt and maintain the (possibly awkward) head position needed to keep the gas bubble pressing against the retinal break for a sufficient period of time to allow formation of the scar.

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- 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 supraretidally (upper 1/3 of retina).

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

What are the surgical approaches to accomplishing this step?
--Scleral buckle (SB)
--Pars plana vitrectomy (PPV)
--Pneumatic retinopexy (PR)
Rhegmatogenous RD Repair

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--Scleral buckle (SB)
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--Pneumatic retinopexy (PR)

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 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! 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?
Laser

Which three things must be accomplished to successfully repair a rhegmatogenous RD?
--Find all retinal breaks
--Induce an inflammatory response in the chorioretinal tissue immediately surrounding the break
--Bring the inflamed choroid and retinal tissue into apposition long enough to allow formation 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.
What three things must be accomplished to successfully repair a rhegmatogenous RD?

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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!
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**Development of PVR**

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Development of PVR

What does the acronym PVR stand for in this context?

Proliferative vitreoretinopathy

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**Rhegmatogenous RD Repair**

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**PVR**

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

**PVR**

By what mechanism does **PVR** cause late RD repair failure?

**Vitreo-retinal traction**

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

Proliferative vitreoretinopathy (PVR)

By what mechanism does PVR cause late RD repair failure?

It leads to vitreo-retinal traction. (And away we go again…)

What does the acronym PVR stand for in this context?

Proliferative vitreoretinopathy

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