Retinal Detachment Overview

Retinal Detachment

Two broad categories

?  ?
Retinal Detachment Overview

Retinal Detachment

Two broad categories

Rhegmatogeninous (RRD)  Non-rhegmatogeninous

Retinal Detachment Overview
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)  Non-rhegmatogenous

Two categories

?  ?
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Two categories

Tractional (TRD)

Exudative (ERD)
Which of these is/are associated with trauma?

Retinal Detachment Overview

Retinal Detachment

- Rhegmatogenous (RRD)
- Non-rhegmatogenous
  - Tractional (TRD)
  - Exudative (ERD)

Both RRD and TRD are associated with a history of trauma. Any differences in their respective trauma tendencies? Yes—RRD is associated with blunt trauma, whereas TRD is associated with penetrating trauma.
Which of these is/are associated with trauma? Both RRD and TRD are associated with a history of trauma.
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

Which of these is/are associated with trauma?
Both RRD and TRD are associated with a history of trauma

Any differences in their respective trauma histories?
Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

Which of these is/are associated with trauma?
Both RRD and TRD are associated with a history of trauma

Any differences in their respective trauma histories?
Yes—RRD is associated with **blunt** trauma, whereas TRD is associated with **penetrating** trauma
Which of these is/are associated with trauma? Both RRD and TRD are associated with a history of trauma.

Any differences in their respective trauma histories? Yes—RRD is associated with \textit{blunt} trauma, whereas TRD is associated with \textit{penetrating} trauma.
What are the classic ophthalmoscopic descriptors of each RD type?

**RRD:** like a tin roof, like a belly dancer

**TRD:**

**ERD:**
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

What are the classic ophthalmoscopic descriptors of each RD type?

RRD: Corrugated, undulating
TRD:
ERD:
Rhegmatogenous RD
What are the classic ophthalmoscopic descriptors of each RD type?

**RRD:** Corrugated, undulating

**TRD:** Convex vs concave

**ERD:**
What are the classic ophthalmoscopic descriptors of each RD type?

**RRD**: Corrugated, undulating

**TRD**: Concave, taut

**ERD**: Dome-shaped, gravity-dependent
Retinal Detachment Overview

Tractional RD
What are the classic ophthalmoscopic descriptors of each RD type?

**RRD**: Corrugated, undulating
**TRD**: Concave, taut
**ERD**: something-shaped, something-dependent
What are the classic ophthalmoscopic descriptors of each RD type?

**RRD**: Corrugated, undulating
**TRD**: Concave, taut
**ERD**: Dome-shaped, gravity-dependent
Bilateral exudative RD
Retinal Detachment Overview

Bilateral exudative RD brings what diagnosis immediately to mind?
Bilateral exudative RD brings what diagnosis immediately to mind? Vogt-Koyanagi-Harada dz (see slide-set U6)
What does the prefix rhegma mean?

Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)
Retinal Detachment Overview

Retinal Detachment

**Rhegma**
togenous (RRD)

Non-rhegmatogenous

- **Tractional** (TRD)
- **Exudative** (ERD)

*What does the prefix rhegma mean? It translates as break or tear*
Retinal Detachment Overview

- Rhegmatogenous (RRD)
- Non-rhegmatogenous
  - Tractional (TRD)
  - Exudative (ERD)

The essential difference is that RRD is associated with a full-thickness retinal break...
Retinal Detachment Overview

The essential difference is that RRD is associated with a full-thickness retinal break...

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)  Exudative (ERD)

...and TRD/ERD aren’t
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

The essential difference is that RRD is associated with a **full-thickness retinal break**...

*What are the three types of retinal breaks?*
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Tears Holes Dialyses
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

The essential difference is that RRD is associated with a **full-thickness retinal break**...

Tears  Holes  Dialyses

Which of these is most commonly implicated in RRD?
Retinal Detachment Overview

Retinal Detachment

- Rhegmatogenous (RRD)
- Non-rhegmatogenous
  - Tractional (TRD)
  - Exudative (ERD)

The essential difference is that RRD is associated with a **full-thickness retinal break**...

- **Tears**
- **Holes**
- **Dialyses**

*Which of these is most commonly implicated in RRD?*
Retinal Detachment Overview

The essential difference is that RRD is associated with a full-thickness retinal break…

Which of these is most commonly implicated in RRD?

Specifically, these are known as tears.
The essential difference is that RRD is associated with a **full-thickness retinal break**...

Which of these is most commonly implicated in RRD?

Specifically, these are known as **horseshoe tears**
Retinal Detachment

Rhegmatogenous (RRD)

Why are they called ‘horseshoe’ tears?

The essential difference is that RRD is associated with a full-thickness retinal break...

Why are they called ‘horseshoe’ tears?

Because of their shape (see above)

Where are they typically found?

In the far periphery, near the ora serrata

How do they develop?

A tongue of attached vitreous extends beyond the normal limit of the vitreous base, onto the peripheral retina. Tension on the vitreous gets focused at this site, and the tongue of vitreous tears the retina anteriorly, producing the flap.
Retinal Detachment Overview

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Why are they called ‘horseshoe’ tears? Because of their shape (see above)

Tears
Holes
Dialyses

Which of these is most commonly implicated in RRD?
Specifically, these are known as horseshoe tears
The essential difference is that RRD is associated with a full-thickness retinal break...

Which of these is most commonly implicated in RRD?

Specifically, these are known as *horseshoe tears*.

Why are they called ‘horseshoe’ tears?
Because of their shape (see above)

Where are they typically found?

In the far periphery, near the ora serrata

How do they develop?
A tongue of attached vitreous extends beyond the normal limit of the vitreous base, onto the peripheral retina. Tension on the vitreous gets focused at this site, and the tongue of vitreous tears the retina anteriorly, producing the flap.

Retinal Detachment Overview

Rhegmatogenous (RRD)

Non-rhegmatogenous

Exudative (ERD)

Tractional (TRD)
Retinal Detachment Overview

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break…

Tears
Holes
Dialyses

Which of these is most commonly implicated in RRD?

Specifically, these are known as horseshoe tears.

Why are they called ‘horseshoe’ tears?
Because of their shape (see above)

Where are they typically found?
In the far periphery, near the ora serrata
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Non-rhegmatogenous

Exudative (ERD)

Tractional (TRD)

Tears

Holes

Dialyses

Non-rhegmatogenous

Anterior

Posterior

Why are they called 'horseshoe' tears?
Because of their shape (see above)

Where are they typically found?
In the far periphery, near the *ora serrata*

What is the *ora serrata*?

The location where the peripheral retina and the pars plana meet

Which of these is most commonly implicated in RRD?

Specifically, these are known as *horseshoe tears*
Retinal Detachment Overview

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Tears

Non-rhegmatogenous

Exudative (ERD)

Tractional (TRD)

Which of these is most commonly implicated in RRD?

Specifically, these are known as horseshoe tears

Why are they called ‘horseshoe’ tears?
Because of their shape (see above)

Where are they typically found?
In the far periphery, near the ora serrata

What is the ora serrata?
The location where the peripheral retina and the pars plana meet

‘The flap’

(The black part is the tear itself)
Ora serrata

Pars plana of ciliary body

Peripheral retina

Ora serrata

Ciliary body

Ciliary zonule (suspenory ligament)

Cornea

Iris

Pupil
Retinal Detachment Overview

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Non-rhegmatogenous

Exudative (ERD)

Tractional (TRD)

Tears

Holes

Dialyses

Which of these is most commonly implicated in RRD?

Specifically, these are known as horseshoe tears

Why are they called ‘horseshoe’ tears?

Because of their shape (see above)

Where are they typically found?

In the far periphery, near the ora serrata

How do they develop?

A tongue of attached vitreous extends beyond the normal limit of the vitreous base, onto the peripheral retina. Tension on the vitreous gets focused at this site, and the tongue of vitreous tears the retina anteriorly, producing the flap.
The essential difference is that RRD is associated with a full-thickness retinal break...

Specifically, these are known as horseshoe tears.

Why are they called ‘horseshoe’ tears? Because of their shape (see above)

Where are they typically found? In the far periphery, near the ora serrata

How do they develop? A tongue of attached vitreous extends beyond the normal limit of the vitreous base, onto the peripheral retina.
Retinal Detachment Overview

- Rhegmatogenous (RRD)
- Non-rhegmatogenous
- Exudative
- Tractional (TRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

- Tears
- Holes
- Dialyses

Which of these is most commonly implicated in RRD?

Specifically, these are known as horseshoe tears.

Why are they called ‘horseshoe’ tears?
Because of their shape (see above)

Where are they typically found?
In the far periphery, near the ora serrata

How do they develop?
A tongue of attached vitreous extends beyond the normal limit of the vitreous base, onto the peripheral retina. Tension on the vitreous gets focused at this site, and the tongue of vitreous tears the retina anteriorly, producing the flap.
Retinal Detachment Overview

Horseshoe tear
Horseshoe tear

A, Gross photograph shows several retinal tears at the vitreous base.
A, Gross photograph shows several retinal tears at the vitreous base. B, Photomicrograph demonstrating condensed vitreous (arrow) attached to the anterior flap of the retinal tear.
The essential difference is that RRD is associated with a full-thickness retinal break.

Which of these is most commonly implicated in RRD?

Specifically, these are known as **horseshoe tears**.

Technically, this is incorrect. What is the correct name of the structure that gets torn?

And the tongue of vitreous tears the retina anteriorly, producing the flap.
Retinal Detachment Overview

The essential difference is that RRD is associated with a full-thickness retinal break...

Which of these is most commonly implicated in RRD?

Specifically, these are known as horseshoe tears.

Why are they called 'horseshoe' tears?

Because of their shape (see above)

Where are they typically found?

In the far periphery, near the ora serrata

How do they develop?

A tongue of attached vitreous extends beyond the normal limit of the vitreous base, onto the peripheral retina. Tension on the vitreous gets focused at this site, and the tongue of vitreous tears the retina anteriorly, producing the flap.

Technically, this is incorrect. What is the correct name of the structure that gets torn?

The neurosensory retina

What? Aren't the terms retina and neurosensory retina interchangeable?

Again, technically no. Neurosensory retina refers to the multilayered structure from the photoreceptors inward, whereas the retina is composed of the neurosensory retina and the RPE.

That said, like most ophthos, the term retina here will mean the neurosensory portion unless otherwise specified.
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Tears
Holes
Dialyses

Which of these is most commonly implicated in RRD?

Specifically, these are known as horseshoe tears

Technically, this is incorrect. What is the correct name of the structure that gets torn?
The neurosensory retina

What? Aren't the terms retina and neurosensory retina interchangeable?

and the tongue of vitreous tears the retina anteriorly, producing the flap.

The flap
(The black part is the tear itself)

Anterior

Posterior
Retinal Detachment Overview

The essential difference is that RRD is associated with a full-thickness retinal break...

Which of these is most commonly implicated in RRD? Specifically, these are known as horseshoe tears.

Technically, this is incorrect. What is the correct name of the structure that gets torn?

The neurosensory retina

What? Aren’t the terms retina and neurosensory retina interchangeable? Again, technically no. Neurosensory retina refers to the multilayered structure from the photoreceptors inward, whereas the retina is composed of the neurosensory retina and the RPE.

And the tongue of vitreous tears the retina anteriorly, producing the flap.
Retinal Detachment Overview

The essential difference is that RRD is associated with a full-thickness retinal break…

Which of these is most commonly implicated in RRD?

Specifically, these are known as horseshoe tears.

Technically, this is incorrect. What is the correct name of the structure that gets torn?
The neurosensory retina

What? Aren’t the terms retina and neurosensory retina interchangeable? Again, technically no. Neurosensory retina refers to the multilayered structure from the photoreceptors inward, whereas the retina is composed of the neurosensory retina and the RPE.

That said, most ophthalmologists most of the time are referring to the neurosensory portion when they say ‘retina,’ and the same is true in this slide-set.

And the tongue of vitreous tears the retina anteriorly, producing the flap.
The essential difference is that RRD is associated with a **full-thickness retinal break**...

\[
\text{Rhegmatogenous (RRD)}
\]

- **Tears**
- **Holes**
- **Dialyses**

Which of these is most commonly implicated in RRD?

Specifically, these are known as **horseshoe tears**

Why are they called ‘horseshoe’ tears?
- Because of their shape (see above)

Where are they typically found?
- In the far periphery, near the ora serrata

What event most commonly precipitates this tension?
- A posterior vitreous detachment

Why are they called ‘horseshoe’ tears?

Because of their shape (see above)

Where are they typically found?

In the far periphery, near the ora serrata

What event most commonly precipitates this tension?

A posterior vitreous detachment

How do they develop?

A tongue of attached vitreous extends beyond the normal limit of the vitreous base, onto the peripheral retina. **Tension on the vitreous gets focused at this site** and the tongue of vitreous tears the retina anteriorly, producing the flap.

‘The flap’

(The black part is the tear itself)
The essential difference is that RRD is associated with a **full-thickness retinal break**...
Retinal Detachment Overview

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Tears
Holes
Dialyses

Which of these is most commonly implicated in RRD?
Specifically, these are known as horseshoe tears

Tractional (TRD)

Rhegmatogenous (RRD)

What event most commonly precipitates this tension?
A posterior vitreous detachment

Beyond the normal limit of the vitreous base, onto the peripheral retina. Tension on the vitreous gets focused at this site and the tongue of vitreous tears the retina anteriorly, producing the flap.

Why are they called 'horseshoe' tears?
Because of their shape (see above)

Where are they typically found?
In the far periphery, near the ora serrata

How do they develop?
A tongue of attached vitreous extends beyond the normal limit of the vitreous base, onto the peripheral retina. Tension on the vitreous gets focused at this site, and the tongue of vitreous tears the retina anteriorly, producing the flap.

Exudative (ERD)

‘The flap’

(The black part is the tear itself)

Anterior
Posterior

Much more on PVDs later in the slide-set
The essential difference is that RRD is associated with a full-thickness retinal break…

Which of these is most commonly implicated in RRD?

Specifically, these are known as horseshoe tears.
The essential difference is that RRD is associated with a full-thickness retinal break...

Specifically, these are known as horseshoe tears.

Why are they called ‘horseshoe’ tears?
Because of their shape (see above)

Where are they typically found?
In the far periphery, near the ora serrata

What other location is a common site of retinal tears leading to RRD?
At the edge of lattice degeneration

Which of these is most commonly implicated in RRD?
Horseshoe tears
The essential difference is that RRD is associated with a full-thickness retinal break...

Which of these is most commonly implicated in RRD?

Specifically, these are known as **horseshoe tears**.

Lattice will also be covered in detail later in the slide-set.

What other location is a common site of retinal tears leading to RRD? At the edge of **lattice degeneration**.

Why are they called ‘horseshoe’ tears? Because of their shape (see above).

Where are they typically found? In the far periphery, near the ora serrata.

How do they develop? A tongue of attached vitreous extends beyond the normal limit of the vitreous base, onto the peripheral retina. Tension on the vitreous gets focused at this site, and the tongue of vitreous tears the retina anteriorly, producing the flap.
Retinal Detachment Overview

Retinal Detachment

- Rhegmatogenous (RRD)
  - The essential difference is that RRD is associated with a **full-thickness retinal break**...
  - Giant **Tears**
    - What is a **giant** retinal tear?
- Non-rhegmatogenous
  - Tractional (TRD)
  - Exudative (ERD)
  - Tears
  - Holes
  - Dialyses
The essential difference is that RRD is associated with a **full-thickness retinal break**...

**Giant Tears**

*What is a giant retinal tear?*

A circumferential tear extending at least 90° (3 clock-hours).
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Giant Tears

What is a giant retinal tear? Where are they located? A circumferential tear extending at least 90° (3 clock-hours).
The essential difference is that RRD is associated with a full-thickness retinal break...

What is a giant retinal tear? Where are they located? A circumferential tear extending at least 90° (3 clock-hours). In the far periphery.
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

- Tractional (TRD)
- Exudative (ERD)

The essential difference is that RRD is associated with a **full-thickness retinal break**...

- **Giant Tears**
- **Holes**
- **Dialyses**

*What is a giant retinal tear? Where are they located? What is the cause?*

A circumferential tear extending at least 90° (3 clock-hours). In the far periphery.
Retinal Detachment Overview

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Giant Tears

What is a giant retinal tear? Where are they located? What is the cause?
A circumferential tear extending at least 90° (3 clock-hours). In the far periphery. Blunt trauma, usually.
The essential difference is that RRD is associated with a **full-thickness retinal break**...

**Giant Tears**

*What is a giant tear?*

A circumferential tear extending at least 90° (3 clock-hours). In the far periphery. Blunt trauma, usually.

The mechanism underlying giant retinal tears is essentially the same as that of horseshoe tears: Tension causes the posterior attachment of the vitreous base to tear the peripheral retina anteriorly. **The main difference is simply the extent of retina involved.**
Giant retinal tear
Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous
  - Tractional (TRD)
  - Exudative (ERD)

The essential difference is that RRD is associated with a **full-thickness retinal break**…

**What are the two types of retinal holes?**
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Tears

Holes

- Atrophic
- Operculated

Dialyses

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

What are the two types of retinal holes?
**Retinal Detachment Overview**

Retinal Detachment

- **Rhegmatogenous (RRD)**
- **Non-rhegmatogenous**
  - Tractional (TRD)

The essential difference is that RRD is associated with a **full-thickness retinal break**...

Tears

- Holes
  - Atrophic
  - Operculated

Dialysis

What does operculated mean?

It means, 'covered by an operculum'

OK, so what's an operculum?

An operculum is a lid, or a cover. Thus, an operculated retinal hole is a full-thickness break in the retina with the missing piece of retina suspended within the vitreous above the break.

How do operculated holes come about?

They often (but not always) start as horseshoe tears, with subsequent amputation of the flap (i.e., the operculum is the amputated flap; see above)
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional (TRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

What does operculated mean? It means, ‘covered by an operculum’

Ocular holes:
- Tears
- Holes
  - Atrophic
  - Operculated
- Dialysis
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Non-rhegmatogenous

Tractional (TRD)

What does operculated mean? It means, ‘covered by an operculum’

OK, so what’s an operculum?

Holes

Atrophic

Operculated
Retinal Detachment Overview

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Holes

- Atrophic
- Operculated

Tears

Dialyses

Non-rhegmatogenous

Tractional (TRD)

What does operculated mean?
It means, ‘covered by an operculum’

OK, so what’s an operculum?
An operculum is a lid, or a cover. Thus, an operculated retinal hole is a full-thickness break in the retina with the missing piece of retina suspended within the vitreous above the break.
Retinal Detachment Overview

Operculated retinal hole
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Non-rhegmatogenous

Tractional (TRD)

What does operculated mean?
It means, ‘covered by an operculum’

OK, so what’s an operculum?
An operculum is a lid, or a cover. Thus, an operculated retinal hole is a full-thickness break in the retina with the missing piece of retina suspended within the vitreous above the break.

How do operculated holes come about?

Tears

Holes

Atrophic

Operculated

Dialysis
Retinal Detachment Overview

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break...

Non-rhegmatogenous

Tractional (TRD)

Tears

Holes

Atrophic

Operculated

Dialys

‘The operculum’ (floating in the vitreous just above the hole)

(The black part is the hole itself)

Anterior

Posterior

What does operculated mean?
It means, ‘covered by an operculum’

OK, so what’s an operculum?
An operculum is a lid, or a cover. Thus, an operculated retinal hole is a full-thickness break in the retina with the missing piece of retina suspended within the vitreous above the break.

How do operculated holes come about?
They often (but not always) start as horseshoe tears, with subsequent amputation of the flap (i.e., the operculum is the amputated flap; see above)
Retinal Detachment Overview

The essential difference is that RRD is associated with a **full-thickness retinal break**.

Rhegmatogenous (RRD)

- **Tears**
- **Holes**
  - Atrophic
  - Operculated

Non-rhegmatogenous

Tractional

- Exudative

The *Retina* book say surprisingly little about atrophic holes, and what little is said is somewhat contradictory. One mention states atrophic holes have “not been linked to an increased risk of retinal detachment.”
Retinal Detachment Overview

Rhegmatogenous (RRD)

The essential difference is that RRD is associated with a full-thickness retinal break.

Non-rhegmatogenous

Tractional

Exudative

The Retina book say surprisingly little about atrophic holes, and what little is said is somewhat contradictory. One mention states atrophic holes have “not been linked to an increased risk of retinal detachment.” But another mention asserts that atrophic holes within an area of lattice degeneration are an ‘uncommon cause of retinal detachment.’ Caveat emptor.
Retinal Detachment Overview

Atrophic retinal hole
Retinal Detachment Overview

Retinal Detachment

- Rhegmatogenous (RRD)
- Non-rhegmatogenous
  - Tractional
  - Exudative

The essential difference is that RRD is associated with a full-thickness retinal break. Tears, holes, and dialyses are involved.

What is a retinal dialysis?

Dialyses
Retinal Detachment Overview

- Rhegmatogenous (RRD)
- Non-rhegmatogenous
  - Tractional
  - Exudative

The essential difference is that RRD is associated with a full-thickness retinal break...

What is a retinal dialysis?
A circumferential disinsertion of the peripheral retina from the ora serrata
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Tractional

Exudative

What is a retinal dialysis? A circumferential disinsertion of the peripheral retina from the ora serrata.

What is the inciting event?
The essential difference is that RRD is associated with a full-thickness retinal break.

**What is a retinal dialysis?**
A circumferential disinsertion of the peripheral retina from the ora serrata.

**What is the inciting event?**
Usually blunt trauma (although it can occur spontaneously in predisposed eyes).
Retinal Detachment Overview

Retinal Detachment

‘A circumferential disinsertion of the peripheral retina due to blunt trauma’ sounds an awful lot like ‘a circumferential tear in the far periphery due to blunt trauma,’ ie, a giant retinal tear. Are these simply two names for the same thing?

The essential difference is that RRD is associated with a full-thickness retinal break…

Giant Tears

What is a giant retinal tear? Where are they located? What is the cause?

A circumferential tear extending at least 90° (3 clock-hours). In the far periphery. Blunt trauma, usually.

Holes

What is a retinal dialysis?

A circumferential disinsertion of the peripheral retina from the ora serrata

What is the inciting event?

Usually blunt trauma (although it can occur spontaneously in predisposed eyes)

Dialyses
The essential difference is that RRD is associated with a full-thickness retinal break.

Giant Tears

What is a giant retinal tear? Where are they located? What is the cause?
A circumferential tear extending at least 90° (3 clock-hours). In the far periphery.
Blunt trauma, usually.

Dialyses

What is a retinal dialysis?
A circumferential disinsertion of the peripheral retina from the ora serrata.

Holes

What is the inciting event?
Usually blunt trauma (although it can occur spontaneously in predisposed eyes).

Retinal Detachment Overview

‘A circumferential disinsertion of the peripheral retina due to blunt trauma’ sounds an awful lot like ‘a circumferential tear in the far periphery due to blunt trauma,’ ie, a giant retinal tear. Are these simply two names for the same thing?

Definitely not. Recall that in a giant retinal tear, tension produced by the vitreous causes a rent in the retina as the posterior attachment of the vitreous ‘peels’ anteriorly.
The essential difference is that RRD is associated with a full-thickness retinal break…

Retinal Detachment Overview

What is a giant retinal tear? Where are they located? What is the cause?

A circumferential tear extending at least 90° (3 clock-hours). In the far periphery.

Blunt trauma, usually.

What is a retinal dialysis?

A circumferential disinsertion of the peripheral retina from the ora serrata

What is the inciting event?

Usually blunt trauma (although it can occur spontaneously in predisposed eyes)

Giant Tears    Holes    Dialyses

‘A circumferential disinsertion of the peripheral retina due to blunt trauma’ sounds an awful lot like ‘a circumferential tear in the far periphery due to blunt trauma,’ ie, a giant retinal tear. Are these simply two names for the same thing?

Definitely not. Recall that in a giant retinal tear, tension produced by the vitreous causes a rent in the retina as the posterior attachment of the vitreous ‘peels’ anteriorly. In contrast, in retinal dialysis the tension applied by the vitreous causes the retina at the ora to peel posteriorly.
Retinal Detachment Overview

Retinal dialysis: Retina peels away from vitreous base

Horseshoe tear: Retina peels toward vitreous base
Retinal Detachment Overview

Retinal Detachment

The essential difference is that RRD is associated with a full-thickness retinal break...

Giant Tears

What is a giant retinal tear? Where are they located? What is the cause?
A circumferential tear extending at least 90° (3 clock-hours). In the far periphery. Blunt trauma, usually.

Holes

Dialyses

What is a retinal dialysis?
A circumferential disinsertion of the peripheral retina from the ora serrata.

What is the inciting event?
Usually blunt trauma (although it can occur spontaneously in predisposed eyes).

Uncertain about the anatomy of the vitreous? No worries—it will be covered in detail shortly.
The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- HxRRD in fellow eye
The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye
The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

--Posterior vitreous detachment (PVD)?
--Myopia?
--Lattice degeneration?
--Cataract surgery?
--Trauma?
--Hx RRD in fellow eye?

Of these, which is the biggest risk factor?
The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

Of these, which is the biggest risk factor? PVD
The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?

--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula
--The optic nerve head
The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?

- The posterior lens capsule
- The ora serrata
- The macula
- Major retinal vessels
- The optic nerve head

In what manner (configuration) is the vitreous attached to the lens capsule?
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?
--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?
--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula
--The optic nerve head

In what manner (configuration) is the vitreous attached to the lens capsule?
In the form of a ring
Retinal Detachment Overview

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?
--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?
--The posterior lens capsule
--The ora serrata

In what manner (configuration) is the vitreous attached to the lens capsule?
In the form of a ring

What is the eponymous name for this ring-shaped attachment?
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

--Posterior vitreous detachment (PVD)
  --Myopia
  --Lattice degeneration
  --Cataract surgery
  --Trauma
  --Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?

--The posterior lens capsule
  --The ora serrata

In what manner (configuration) is the vitreous attached to the lens capsule?
  --In the form of a ring

What is the eponymous name for this ring-shaped attachment?
  --Wieger’s ligament
Retinal Detachment Overview

Vitreous base
Weiger’s ligament
Berger’s space
Cloquet’s canal
Space of Martegiani

Vitreous attachments
Retinal Detachment Overview

The AAO Preferred Practice Pattern lists five risk factors:

--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--History of RRD in fellow eye

The five major locations of vitreous attachment in the eye are:

--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula
--The optic nerve head

In what manner (configuration) is the vitreous attached to the ora serrata?

The vitreous base is attached in a band-like manner extending 2 mm anteriorly (i.e., onto the pars plana of the ciliary body) and 3 mm posteriorly (i.e., onto the peripheral retina).
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?

- The posterior lens capsule
- The ora serrata
- Major retinal vessels
- The macula
- The optic nerve head

In what manner (configuration) is the vitreous attached to the ora serrata?

In a band-like manner extending 2 mm anteriorly (ie, onto the pars plana of the ciliary body) and 3 mm posteriorly (ie, onto the peripheral retina).
The AAO Preferred Practice Pattern for RRD lists five risk factors: --Posterior vitreous detachment (PVD) --Myopia --Lattice degeneration --Cataract surgery --Trauma --Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye? --The posterior lens capsule --The ora serrata --Major retinal vessels --The macula --The optic nerve head

In what manner (configuration) is the vitreous attached to the ora serrata? In a band-like manner extending 2 mm anteriorly (ie, onto the pars plana of the ciliary body) and 3 mm posteriorly (ie, onto the peripheral retina)
The AAO Preferred Practice Pattern for RRD lists five risk factors:

--Posterior vitreous detachment
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?

--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula
--The optic nerve head

In what manner (configuration) is the vitreous attached to the ora serrata?
In a band-like manner extending 2 mm anteriorly (ie, onto the pars plana of the ciliary body) and 3 mm posteriorly (ie, onto the peripheral retina).

What is the name for this band-shaped attachment?
The vitreous base
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?

- The posterior lens capsule
- The ora serrata
- Major retinal vessels
- The macula
- The optic nerve head

In what manner (configuration) is the vitreous attached to the ora serrata?

In a band-like manner extending 2 mm anteriorly (ie, onto the pars plana of the ciliary body) and 3 mm posteriorly (ie, onto the peripheral retina)

What is the name for this band-shaped attachment?

The vitreous base

The ora serrata

-- Major retinal vessels
-- The macula
-- The optic nerve head
Retinal Detachment Overview

The vitreous base
The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?

--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula
--The optic nerve head

How does a PVD begin, and how does it proceed?
The vitreous first detaches from the perifoveal macula, followed by the vessels. It next detaches from the fovea. Finally, once it has peeled loose from the mid-peripheral retina, it comes off the ONH.
The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

--- Posterior vitreous detachment (PVD)
--- Myopia
--- Lattice degeneration
--- Cataract surgery
--- Trauma
--- Hx RRD in fellow eye

**What are the five major locations of vitreous attachment in the eye?**

--- The posterior lens capsule
--- The ora serrata
--- Major retinal vessels
--- **The macula (perifoveal first)**
--- The optic nerve head

How does a PVD begin, and how does it proceed?
The vitreous first detaches from the perifoveal macula.
Retinal Detachment Overview

Evolution of a PVD. Arrows indicate the location of the posterior vitreous face.
Retinal Detachment Overview

Pre-PVD

Perifoveal detachment

Evolution of a PVD. Arrows indicate the location of the posterior vitreous face.
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous
- Exudative (ERD)
- Tractional (TRD)

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?
-- Posterior vitreous detachment (PVD)
-- Myopia
-- Lattice degeneration
-- Cataract surgery
-- Trauma
-- Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?
-- The posterior lens capsule
-- The ora serrata
-- Major retinal vessels
-- The macula (perifoveal first)
-- The optic nerve head

How does a PVD begin, and how does it proceed?
The vitreous first detaches from the perifoveal macula, followed by the vessels.
Retinal Detachment Overview

Retinal Detachment

How does a PVD begin, and how does it proceed?
The vitreous first detaches from the perifoveal macula, followed by the vessels. It next detaches from the fovea.

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?
--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?
--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula (perifoveal first, fovea later)
--The optic nerve head
Retinal Detachment Overview

Evolution of a PVD. Arrows indicate the location of the posterior vitreous face

Pre-PVD

Perifoveal detachment

Foveal detachment
The AAO Preferred Practice Pattern for RRD lists five risk factors: what are they?
- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?
- The posterior lens capsule
- The ora serrata
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- The macula (perifoveal first)
- The optic nerve head

How does a PVD begin, and how does it proceed?
The vitreous first detaches from the perifoveal macula, followed by the vessels. It next detaches from the fovea. Finally, once it has peeled loose from the mid-peripheral retina, it comes off the ONH.
Retinal Detachment Overview

Pre-PVD

Perifoveal detachment

Evolution of a PVD. Arrows indicate the location of the posterior vitreous face

Foveal detachment

ONH detachment (completed PVD)
Gross photograph showing a posterior vitreous detachment. Retraction of the vitreous from the posterior retina is seen.
Pre-PVD

Hol up—this (red arrow) sure looks like a PVD. What’s going on here?

Completed PVD

Evolution of a PVD. Arrows indicate the posterior vitreous face

What’s going on here?
Hol up—this (red arrow) sure looks like a PVD. What’s going on here? The image is labeled correctly, ie, the white arrows are indicating the location of the vitreous face. The optically empty space between the formed vitreous and the macula is the premacular bursa (aka the precortical vitreous pocket).
Hol up—this (red arrow) sure looks like a PVD. What’s going on here? The image is labeled correctly, ie, the white arrows are indicating the location of the vitreous face. The optically empty space between the formed vitreous and the macula is the *premacular bursa* (aka the *precortical vitreous pocket*).
A, Anatomical features of the vitreous. A prominent area of liquefaction of the premacular vitreous gel is called the **premacular bursa**. B, SS-OCT image of posterior vitreous and macula region demonstrates the signal void in the vitreous cavity in front of the macula that represents the premacular bursa (arrowheads).
Hol up—this (red arrow) sure looks like a PVD. What’s going on here? The image is labeled correctly, ie, the white arrows are indicating the location of the vitreous face. The optically empty space between the formed vitreous and the macula is the *premacular bursa* (aka the *precortical vitreous pocket*).

What material occupies the bursa?
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*What material occupies the bursa?*
Liquefied vitreous
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**What material occupies the bursa?**
Liquefied vitreous

**What purpose does the bursa serve?**
Hol up—this (red arrow) sure looks like a PVD. What’s going on here? The image is labeled correctly, ie, the white arrows are indicating the location of the vitreous face. The optically empty space between the formed vitreous and the macula is the *premacular bursa* (aka the *precortical vitreous pocket*).

*What material occupies the bursa?*
Liquefied vitreous

*What purpose does the bursa serve?*
The absence of formed vitreous in this region means that torsional forces in the vitreous will not be transmitted directly to the macula, thus reducing traction on it.
Retinal Detachment

The AAO Preferred Practice Pattern for RRD lists five risk factors: what are they?

- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?

- The posterior lens capsule?
- The ora serrata?
- Major retinal vessels
- The macula
- The optic nerve head

How does a PVD begin, and how does it proceed?
The vitreous first detaches from the perifoveal macula, followed by the vessels. It next detaches from the fovea. Finally, once it has peeled loose from the mid-peripheral retina, it comes off the ONH.

What about Wieger’s ligament and the base? When do they detach in a PVD?

They don’t. The base never detaches (except in cases of severe blunt trauma). As for Wieger’s ligament: Given its extremely anterior location, it shouldn’t be surprising that it is spared in a posterior vitreous detachment.
Retinal Detachment Overview

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?
--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

Retinal Detachment

How does a PVD begin, and how does it proceed?
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They don’t. The base never detaches (except in cases of severe blunt trauma).

What are the five major locations of vitreous attachment in the eye?
--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula
--The optic nerve head
Retinal Detachment Overview

**Rhegmatogenous (RRD)**

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

**Non-rhegmatogenous (ERD) & Tractional (TRD)**

What are the five major locations of vitreous attachment in the eye?

- The posterior lens capsule
- The ora serrata
- Major retinal vessels
- The macula
- The optic nerve head

How does a PVD begin, and how does it proceed?

The vitreous first detaches from the perifoveal macula, followed by the vessels. It next detaches from the fovea. Finally, once it has peeled loose from the mid-peripheral retina, it comes off the ONH.

What about Wieger’s ligament and the base? When do they detach in a PVD? They don’t. The base never detaches (except in cases of severe blunt trauma).

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The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?

- The posterior lens capsule?
- The ora serrata?
- Major retinal vessels
- The macula
- The optic nerve head
OK then, is there such a thing as an anterior vitreous detachment? Yes. As noted above, the base never detaches.

What are the five major locations of vitreous attachment in the eye?

--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula
--The optic nerve head
Retinal Detachment Overview

Retinal Detachment

OK then, is there such a thing as an anterior vitreous detachment? Yes. As noted above, the base never detaches. However, there are occasions when Wieger’s lets go, and this is the definition of an anterior detachment.

What are the five major locations of vitreous attachment in the eye?

--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula
--The optic nerve head
Retinal Detachment Overview

Retinal Detachment

OK then, is there such a thing as an anterior vitreous detachment? Yes. As noted above, the base never detaches. However, there are occasions when Wieger’s lets go, and this is the definition of an anterior detachment.

Under what circumstances does such an anterior detachment occur?

What are the five major locations of vitreous attachment in the eye?

--The posterior lens capsule
--The ora serrata
--Major retinal vessels
--The macula
--The optic nerve head
Retinal Detachment Overview

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?
-- Posterior vitreous detachment (PVD)
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-- Lattice degeneration
-- Cataract surgery
-- Trauma
-- Hx RRD in fellow eye

What are the five major locations of vitreous attachment in the eye?
-- The posterior lens capsule
-- The ora serrata
-- Major retinal vessels
-- The macula
-- The optic nerve head

OK then, is there such a thing as an anterior vitreous detachment?
Yes. As noted above, the base never detaches. However, there are occasions when Wieger’s lets go, and this is the definition of an anterior detachment.

Under what circumstances does such an anterior detachment occur?
Usually in the course of an intracapsular cataract extraction (ICCE), which has long fallen out of favor except under the most unusual of clinical circumstances.
Retinal Detachment Overview

When (ie, in what age range) do PVDs typically occur?

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye
Retinal Detachment Overview

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

--Posterior vitreous detachment (PVD)
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--Cataract surgery
--Trauma
--Hx RRD in fellow eye

When (ie, in what age range) do PVDs typically occur?
45-65
When (ie, in what age range) do PVDs typically occur?
45-65

What group of otherwise normal eyes often detach at a younger age?

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?
--Posterior vitreous detachment (PVD)
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--Cataract surgery
--Trauma
--Hx RRD in fellow eye
When (ie, in what age range) do PVDs typically occur?
45-65

What group of otherwise normal eyes often detach at a younger age?
Myopic eyes

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?
--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye
When (ie, in what age range) do PVDs typically occur? 45-65

What group of otherwise normal eyes often detach at a younger age? Myopic eyes

PVDs can be divided into two groups based on an important clinical characteristic. What are these groups?

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?
--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye
Retinal Detachment Overview

When (ie, in what age range) do PVDs typically occur?
45-65

What group of otherwise normal eyes often detach at a younger age?
Myopic eyes

PVDs can be divided into two groups based on an important clinical characteristic. What are these groups?
Symptomatic and asymptomatic

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?
--Posterior vitreous detachment (PVD)
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--Hx RRD in fellow eye
The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

---Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye
Retinal Detachment Overview

When (ie, in what age range) do PVDs typically occur?
45-65

Why is the symptomatic/asymptomatic distinction clinically important?
Because symptomatic pts are at significantly higher risk of an RRD

PVDs can be divided into two groups based on an important clinical characteristic. What are these groups?
Symptomatic and asymptomatic

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?
--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye
Retinal Detachment Overview

Retinal

When (ie, in what age range) do PVDs typically occur?
45-65

Why is the symptomatic/asymptomatic distinction clinically important?
Because symptomatic pts are at significantly higher risk of an RRD

What symptoms are being referenced here?
Photopsias and floaters

PVDs can be divided into two groups based on an important clinical characteristic.
What are these groups?
Symptomatic and asymptomatic

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?
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--Myopia
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Retinal Detachment Overview

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PVDs can be divided into two groups based on an important clinical characteristic.

What are these groups?
Symptomatic and asymptomatic

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

--Posterior vitreous detachment (PVD)
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--Hx RRD in fellow eye
Retinal Detachment Overview

What are photopsias?

Photopsias

Symptomatic

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?
--Posterior vitreous detachment (PVD)
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Retinal Detachment Overview

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

What are photopsias?
Flashes of light

Photopsias

Symptomatic

When (ie, in what age range) do PVDs typically occur?
45-65

Why is the symptomatic/asymptomatic distinction clinically important?
Because symptomatic pts are at significantly higher risk of an RRD

Photopsias

Flashes of light

What causes photopsias?
Mechanical stimulation of the retina (this is why you 'see stars' if you bang your head or rub your eyes)

What is the source of mechanical stimulation in PVD?
Vitreous traction, ie, the vitreous tugging on the retina

Are photopsias more noticeable under bright, or low-light conditions?
Low light
The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

--Posterior vitreous detachment (PVD)
--Myopia
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--Cataract surgery
--Trauma
--Hx RRD in fellow eye
The AAO Preferred Practice Pattern for RRD lists five risk factors---what are they?
--**Posterior vitreous detachment (PVD)**
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

**Photopsias**
Flashes of light

**What are photopsias?**
Mechanical stimulation of the retina (this is why you ‘see stars’ if you bang your head or rub your eyes)

**What causes photopsias?**

Symptomatic

**When (ie, in what age range) do PVDs typically occur?**
45-65

**What group of otherwise normal eyes often detach at a younger age?**
Myopic eyes

PVDs can be divided into two groups based on an important clinical characteristic.

**What are these groups?**
Symptomatic and asymptomatic

**Why is the symptomatic/asymptomatic distinction clinically important?**
Because symptomatic pts are at significantly higher risk of an RRD

**What symptoms are being referenced here?**
Photopsias and floaters

**Retinal Detachment Overview**
The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

--- Posterior vitreous detachment (PVD)

--- Myopia

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Retinal Detachment Overview

What are photopsias?
Flashes of light

What causes photopsias?
Mechanical stimulation of the retina (this is why you ‘see stars’ if you bang your head or rub your eyes)

What is the source of mechanical stimulation in PVD?
Vitreous traction, ie, the vitreous tugging on the retina
The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

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Are photopsias more noticeable under bright, or low-light conditions?

**Symptomatic**

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Photopsias and floaters

When (ie, in what age range) do PVDs typically occur?
45-65

What group of otherwise normal eyes often detach at a younger age?
Myopic eyes

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The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?
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When pts report seeing floaters, are they actually seeing floaters?
No--it is physically impossible to see floaters

Why is it impossible to see floaters?
For two reasons:
--As floaters are located within the vitreous, there is no incident light reflected from them towards the macula
--Even if incident light was present, there is no refractive apparatus between the floaters and the fovea to produce an image

OK then, what are pts seeing when they report floaters?
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Retinal Detachment Overview

Retinal Detachment

Non-rhegmatogenous

Exudative (ERD)

Tractional (TRD)

Rhegmatogenous (RRD)

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What is the source of the pigment/pigmented cells?

The RPE

How does a retinal tear result in pigment/pigmented cells floating in the vitreous cavity?

The cells/pigment are liberated from their normal location by the tearing away of the retina

What is the colorful description for the appearance of pigment/pigmented cells in the anterior vitreous?

'Tobacco dust'

What is the eponymous name for finding pigment/pigmented cells in the anterior vitreous?

Shafer's sign. It is very important to record the status of Shafer's sign (positive or negative) on all acute PVD pts!

What does 'epipapillary glial tissue' refer to?

The attachment of the posterior vitreous face to the retina encircling the optic disc. When it comes loose during a PVD, this tissue often forms a large ring-shaped floater.

What is the eponymous name for this ring-shaped floater?

Weiss' ring
Retinal Detachment Overview

Retinal Detachment

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Retinal Detachment
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Retinal

- Non-rhegmatogenous (ERD)
- Tractional (TRD)

Rhegmatogenous (RRD)

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2. Myopia
3. Lattice degeneration
4. Cataract surgery
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6. History of RRD in fellow eye

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What is the eponymous name for this ring-shaped floater?

- A Weiss ring
Retinal Detachment Overview

- Non-rhegmatogenous
  - Exudative (ERD)
  - Tractional (TRD)
- Rhegmatogenous (RRD)

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?
- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

When (ie, in what age range) do PVDs typically occur?
45-65

What group of otherwise normal eyes often detach at a younger age?
Myopic eyes

PVDs can be divided into two groups based on an important clinical characteristic.
What are these groups?
- Symptomatic
- Asymptomatic

Why is the symptomatic/asymptomatic distinction clinically important?
Because symptomatic pts are at significantly higher risk of an RRD

What symptoms are being referenced here?
Photopsias and floaters

There are three main types of floaters.
What are they?
- Heme
- Clumps of pigment/pigmented cells
- Epipapillary glial tissue

What is the source of the heme?
Torn retinal vessels

Is there a relationship between the amount of vitreous heme and the risk of a retinal tear?
Yes—the risk is directly proportional to it

What is the source of the pigment/pigmented cells?
The RPE

How does a retinal tear result in pigment/pigmented cells floating in the vitreous cavity?
The cells/pigment are liberated from their normal location by the tearing away of the retina

What is the colorful description for the appearance of pigment/pigmented cells in the anterior vitreous?
‘Tobacco dust’

What is the eponymous name for finding pigment/pigmented cells in the anterior vitreous?
Shafer’s sign

What does ‘epipapillary glial tissue’ refer to?
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**Retinal Detachment Overview**

- **Rhegmatogenous (RRD)**
- **Non-rhegmatogenous**
  - Exudative (ERD)
  - Tractional (TRD)

The AAO Preferred Practice Pattern for RRD lists five risk factors:
- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

When (ie, in what age range) do PVDs typically occur? 45-65

What group of otherwise normal eyes often detach at a younger age? Myopic eyes

PVDs can be divided into two groups based on an important clinical characteristic. What are these groups? Symptomatic and asymptomatic

Why is the symptomatic/asymptomatic distinction clinically important? Because symptomatic pts are at significantly higher risk of an RRD

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Retinal Detachment Overview

Shafer’s sign
Retinal Detachment Overview

- Non-rhegmatogenous (ERD)
- Tractional (TRD)
- Rhegmatogenous (RRD)

The AAO Preferred Practice Pattern for RRD lists five risk factors:
- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

There are three main types of floaters:
- Heme
- Clumps of pigment/pigmented cells
- Epipapillary glial tissue

The source of heme is torn retinal vessels.

The AAO PPD lists five risk factors for RRD:
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- Myopia
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Retinal Detachment Overview

Retinal Detachment

Non-rhegmatogenous

Exudative (ERD)

Tractional (TRD)

Rhegmatogenous (RRD)

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Retinal Detachment Overview

Weiss ring
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Is myopia a significant risk factor?
Yes

Is RRD risk proportional to the degree of myopia?
Yes

Is RRD risk proportional to axial length (which is of course proportional to the degree of myopia)?
Yes

The AAO Preferred Practice Pattern for RRD lists five risk factors--what are they?

1. Posterior vitreous detachment (PVD)
2. Myopia
3. Lattice degeneration
4. Cataract surgery
5. Trauma
6. Hx RRD in fellow eye
The AAO Preferred Practice Pattern for RRD lists five risk factors:

-- Posterior vitreous detachment (PVD)
-- Myopia
-- Lattice degeneration
-- Cataract surgery
-- Trauma
-- History of rhegmatogenous retinal detachment in the fellow eye (Hx RRD in fellow eye)

Is myopia a significant risk factor? Yeah buddy. Over half of RRDs occur in myopic eyes!
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

The AAO Preferred Practice Pattern for RRD lists five risk factors:
--Posterior vitreous detachment (PVD)
--Myopia
--Lattice degeneration
--Cataract surgery
--Trauma
--Hx RRD in fellow eye

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Retinal Detachment Overview

Retinal Detachment

- Rhegmatogenous (RRD)
- Non-rhegmatogenous

The AAO Preferred Practice Pattern for RRD lists five risk factors—what are they?

- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

How prevalent is lattice in the population? Quite—it is found in 5-10% of the population.

How prevalent is lattice in pts with an RRD? It is found in 1/5 to 1/3 of eyes with an RRD.

Is it more common in myopic or hyperopic eyes? Myopic.

Is it sporadic or familial? While not inevitable, a familial predisposition is often found.
Retinal Detachment Overview

Retinal Detachment

- Rhegmatogenous (RRD)
- Non-rhegmatogenous

The AAO Preferred Practice Pattern for RRD lists five risk factors:
- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

How prevalent is lattice in the population?
Quite--it is found in __%--%__ of the population

How prevalent is lattice in pts with an RRD?
It is found in __1/5 to 1/3__ of eyes with an RRD

Is it more common in myopic, or hyperopic eyes?
Myopic

Is it sporadic, or familial?
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Retinal Detachment Overview
Retinal Detachment Overview

The AAO Preferred Practice Pattern for RRD lists five risk factors:
--Posterior vitreous detachment (PVD)
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--Lattice degeneration
--Cataract surgery
--Trauma
--History of RRD in fellow eye

How prevalent is lattice in the population?
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Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

Retinal Detachment Overview

Lattice degeneration
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

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Retinal Detachment Overview

- Rhegmatogenous (RRD)
- Non-rhegmatogenous

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Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

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Retinal Detachment Overview

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**Rhegmatogenous (RRD)**

Non-rhegmatogenous

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Retinal Detachment

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Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous
Non-rhegmatogenous

There are three clinically important aspects to the structure of lattice degeneration--what are they?
1) A focal area of retina for which the internal limiting membrane is missing;
2) a pocket of liquefied vitreous overlying this retinal lesion; and
3) abnormally firm adhesion between the edges of the retina lesion and the walls of the overlying pocket of liquefied vitreous.

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--Myopia
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Retinal Detachment Overview

**Rhegmatogenous**

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- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

**Non-rhegmatogenous**

- Exudative (ERD)
- Tractional (TRD)

There are three clinically important aspects to the structure of lattice degeneration--what are they?
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**Rhegmatogenous**

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- **Lattice degeneration**
- Cataract surgery
- Trauma
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**Non-rhegmatogenous**

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A, Lattice degeneration appears clinically as prominent sclerotic vessels (arrows) in a wicker or lattice pattern.
A, Lattice degeneration appears clinically as prominent sclerotic vessels (arrows) in a wicker or lattice pattern. 

B, The vitreous directly over the lattice degeneration is liquefied (asterisk), but formed vitreous remains adherent at the margins (arrowheads) of the degenerated area. The internal limiting membrane is discontinuous, and the inner retinal layers are atrophic.

Lattice degeneration
Retinal Detachment Overview

There are three types of retinal detachment:
1. Rhegmatogenous
2. Non-rhegmatogenous
3. Exudative

Rhegmatogenous
- Retinal tears (with subsequent rhegmatogenous RD) result from traction on these abnormal vitreo-retinal adhesions
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

Non-rhegmatogenous
- Posterior vitreous detachment (PVD)
- Myopia
- Lattice degeneration
- Cataract surgery
- Trauma
- Hx RRD in fellow eye

Exudative
- Tractional (TRD)

How prevalent is lattice in the population?
- It is found in 5-10% of the population

How prevalent is lattice in pts with an RRD?
- It is found in 1/5 to 1/3 of eyes with an RRD

Is it more common in myopic, or hyperopic eyes?
- Myopic

Is it sporadic, or familial?
- While not inevitable, a familial predisposition is often found

There are three clinically important aspects to the structure of lattice degeneration:
1. A focal area of retina for which the internal limiting membrane is missing;
2. A pocket of liquefied vitreous overlying this retinal lesion;
3. An abnormally firm adhesion between the edges of the retina lesion and the walls of the overlying pocket of liquefied vitreous.
Retinal tear at the posterior edge of lattice
The AAO Preferred Practice Pattern for RRD lists five risk factors, what are they?
--Posterior vitreous detachment
--Myopia
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--Cataract surgery
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--Hx RRD in fellow eye

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--Younger, or older individuals?
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

The AAO Preferred Practice Pattern for RRD lists five risk factors. What are they?

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What intraop event significantly increases the risk of RRD?
Retinal Detachment Overview

**Rhegmatogenous (RRD)**

**Non-rhegmatogenous**

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What intraop event significantly increases the risk of RRD?
Rupture of the posterior capsule
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- Posterior vitreous detachment (PVD)
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Are we talking about blunt, or penetrating trauma?

Both

If blunt trauma causes a retinal break, it typically happens in one of two places relative to the site of the trauma. What term is used to refer to each sort of injury?

- A break in the retina adjacent to the injury site = a coup injury
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Young people have a higher rate of eye trauma than do older individuals. If a young person sustains a break-producing injury, is it expected that they will have an RRD soon thereafter?

No, only about 10% present in the immediate post-injury period. Only about 50% will present within the first 8 months.

Why the delay?

Because young people’s vitreous is formed (ie, not yet liquefied), it is not able to flow through an open retinal break. Only later, if/when trauma-induced vitreous damage leads to liquefaction, will a young person experience an RRD.

Retinal Detachment Overview

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Retinal Detachment Overview

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Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Non-rhegmatogenous

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--Hx RRD in fellow eye
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Changing gears:
What condition tops the DDx for RRD?

Exudative (ERD)

Tractional (TRD)
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Changing gears:
What condition tops the DDx for RRD?
Retinoschisis

Tractional (TRD)

Exudative (ERD)
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Retinal Detachment

Rhegmatogenous (RRD)

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Changing gears: What condition tops the DDx for RRD? Retinoschisis

To what does the term retinoschisis refer?
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Changing gears:
What condition tops the DDx for RRD?
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To what does the term retinoschisis refer?
It refers to a splitting of the neurosensory retina within one of its layers
Retinal Detachment Overview

Retinoschisis
## Retinal Detachment Overview

### Retinal Detachment

- **Non-rhegmatogenous (ERD)**
- **Exudative (TRD)**

### Rhegmatogenous (RRD)

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<thead>
<tr>
<th>Surface appearance</th>
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<th>Schisis</th>
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**Changing gears:**

*What condition tops the DDx for RRD?*

Retinoschisis

*To what does the term retinoschisis refer?*

It refers to a splitting of the neurosensory retina.
Retinal Detachment Overview

RRD: Corrugated surface
Retinal Detachment Overview

Changing gears: What condition tops the DDx for RRD? Retinoschisis

To what does the term retinoschisis refer? It refers to a splitting of the neurosensory retina.

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Retinal Detachment Overview

**RRD: Corrugated surface**

**Retinoschisis: Smooth surface**
### Retinal Detachment Overview

#### Rhegmatogenous (RRD)

- **Surface appearance**
- **Smooth**
- **Corrugated**

#### Question:
There is a situation in which an RRD will have a smooth surface—what is it?

- **Longstanding rhegmatogenous RD.** In such cases, the retina eventually ‘thins out,’ resulting in a smoother, more schisis-like appearance.

---

### Changing gears: What condition tops the DDx for RRD?**

- **Retinoschisis**

**Retinoschisis**

- **Surface appearance**
- **Heme/ pigment in the vitreous?**
- **Relative or absolute scotoma?**

- **RRD**
  - **Corrugated Yes**
  - **Smooth No**

**To what does the term retinoschisis refer?**

It refers to a splitting of the neurosensory retina.
Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous (RRD)

Changing gears:
What condition tops the DDx for RRD?
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There is a situation in which an RRD will have a smooth surface—what is it? A longstanding rhegmatogenous RD
**Retinal Detachment Overview**

### Retinal Detachment

- **Non-rhegmatogenous (ERD)**
- **Exudative**
- **Tractional (TRD)**

### Rhegmatogenous (RRD)

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*What condition tops the DDx for RRD?*

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### Changing gears:

*What condition tops the DDx for RRD?*

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Changing gears: What condition tops the DDx for RRD? Retinoschisis

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What is the eponymous name for the presence of pigment in the anterior vitreous as a sign of RRD? Shafer's sign

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### Schisis

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### Changing gears:

*What condition tops the DDx for RRD?*

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Retinal Detachment

Changing gears: What condition tops the DDx for RRD?
Retinoschisis

To what does the term retinoschisis refer?
It refers to a splitting of the neurosensory retina.

<table>
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Retinal Detachment Overview

Rhegmatogenous (RRD)

Changing gears: What condition tops the DDx for RRD?

- Retinoschisis

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Retinal Detachment Overview

Retinal Detachment

Non-rhegmatogenous

Tractional (TRD)

Exudative (ERD)

What is the most common cause of these vitreoretinal membrane?

Proliferative retinopathy (eg, PDR; CRVO; BRVO)

What is another, completely different sort of common cause?

Penetrating trauma

Does penetrating trauma lead to proliferative vitreoretinopathy?

No, it leads to proliferative vitreoretinopathy.
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So, contraction of these fibrovascular elements leads to TRD? It contributes, but is not the main source of traction. What is the main source of traction? Our old friend **PVD**—or more correctly, a **partial** PVD. New vessels crawling on the posterior hyaloid face induces a partial PVD. Some vessels prevent the PVD from propagating (hence its partial status). Others are suspended between the contracting vitreous and the retina, and thus place traction on the retina.

What is the underlying pathophysiology in TRD? **Vitreoretinal elements** pulling hard enough on the neurosensory retina to distract it from its normal position apposing the RPE
Retinal Detachment Overview

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- Exudative (ERD)
- Tractional (TRD)

Rhegmatogenous (RRD)

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Exudative (ERD)

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**Retinal Detachment Overview**

- Rhegmatogenous (RRD)
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  - Exudative (ERD)
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Retinal Detachment Overview

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TRD. Note the vessels crawling up on and into the vitreous
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Retinal Detachment

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The neurosensory (NS) retina
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Vitreoretinal elements pulling hard enough on the neurosensory retina to distract it from its normal position apposing the RPE

How does a break in the NS retina lead to the formation of vitreous membranes?

Such a break provides a pathway for cells (ie, RPE; glial) to enter the space that is internal to the NS retina. Once they find themselves in this space, these cells reproduce and migrate, in the process forming membranes along the NS retina, across the face of the posterior hyaloid, and into the vitreous body itself. Once they are established on or in the vitreous, contraction of these membranes puts the NS retina under traction, which can be strong enough to distract the NS retina away from its position apposite the RPE—ie, to cause a TRD.

To be clear: When we refer to penetrating trauma, what structure specifically is being penetrated?

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To what does the term proliferative vitreoretinopathy refer?

It can refer to the process by which vitreous membranes form after a break in the NS retina, or to the membranes themselves.

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Preretinal membrane (*area between arrows*) on the surface of the retina, secondary to proliferative vitreoretinopathy
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So you can see how penetrating (NS retina) trauma can lead to PVR and TRD—the traumatic break provides the pathway by which the contractile cells can access the vitreous.

Wait—RRD involves a break in the retina. Why doesn't PVR develop after RRD?
- In fact it does, frequently

What unhappy role does PVR play in the long-term outcome of surgery to repair RRD?
- PVR is the most common cause of long-term RRD
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Retinal Detachment Overview

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In a nutshell, what is going on in ERD?

Retinal Detachment Overview

Exudative (ERD)
In a nutshell, what is going on in ERD?
The accumulation of fluid in the potential space between the NS retina and the RPE

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Rhegmatogenous (RRD)
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Retinal Detachment Overview

*In a nutshell, what is going on in ERD?*

The accumulation of fluid in the potential space between the NS retina and the RPE

*Under normal circumstances, what prevents fluid from accumulating there?*
**Retinal Detachment Overview**

**In a nutshell, what is going on in ERD?**
The accumulation of fluid in the potential space between the NS retina and the RPE

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--Inflammatory
--Neoplastic

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--a failure of RPE pumping function
(or a combo of both)
**Retinal Detachment Overview**

*In a nutshell, what is going on in ERD?*

The accumulation of fluid in the potential space between the NS retina and the RPE.

*Under normal circumstances, what prevents fluid from accumulating there?*

*What two broad categories of dz are commonly associated with hyperexudation?*

--- **Inflammatory**
--- **Neoplastic**

*---a rate of fluid accumulation too high for the RPE to keep up; or*
---a failure of RPE pumping function
---or a combo of both

*What inflammatory conditions are associated with ERD?*

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What inflammatory conditions are associated with ERD?
---Vogt-Koyanagi-Harada (VKH)
---Posterior scleritis
---Malignant hypertension
---Toxemia of pregnancy

Exudative (ERD)

Hyper-exudation

Inflammation

Neoplasm

RPE dysfunction

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And given VKH is in the DDx, what other condition must be considered as well?

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---Posterior scleritis
---Malignant hypertension
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And given VKH is in the DDx, what other condition must be considered as well?
SO--sympathetic ophthalmia. (If you don’t understand why SO must be included, check out the VKH/SO slide-set.)

Retinal Detachment Overview

Exudative (ERD)

Hyper-exudation

RPE dysfunction

Inflammation
Neoplasm
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--a failure of RPE pumping function
(or a combo of both)

Which broad categories of neoplasms are associated with ERD?
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--Choroidal, especially hemangioma and melanoma
--Metastases, especially breast and lung
Retinal Detachment Overview

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(or a combo of both)

Which broad categories of neoplasms are associated with ERD?

What are the two most common causes for each?
- Choroidal, especially ? and ?
- Metastases, especially ? and ?
Retinal Detachment Overview

**Retinal Detachment Overview**

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*Which broad categories of neoplasms are associated with ERD?*
*What are the two most common causes for each?*
--Choroidal, especially *hemangioma* and *melanoma*
--Metastases, especially *breast* and *lung*
In a nutshell, what is going on in ERD?
The accumulation of fluid in the potential space between the NS retina and the RPE

Under normal circumstances, what prevents fluid from accumulating there?
The pumping action of the RPE

This implies what about the underlying pathophysiology of ERD?
That it is due to either:
--a rate of fluid accumulation too high for the RPE to keep up; or
--a failure of RPE pumping function
(or a combo of both)

What condition, often but not always associated with ERD, is a classic example of RPE dysfunction?

Exudative (ERD)

RPE dysfunction

Hyper-exudation

Inflammation

Neoplasm

Metastatic

Choroidal
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Central serous chorioretinopathy (CSC)
Retinal Detachment Overview

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What condition, often but not always associated with ERD, is a classic example of RPE dysfunction?
Central serous chorioretinopathy (CSC)

(Note: ERD in CSC is not due solely to RPE dysfunction—choroidal hyperpermeability is a component as well)
We can’t talk about ERD without mentioning an extremely OKAP-worthy condition associated with it…Questions about this condition could be Retina-based or Peds-based…That condition is…

Retina Detachment Overview

- Non-rhegmatogenous
- Exudative
- Tractional
- Rhegmatogenous

Retinal Detachment

We can’t talk about ERD without mentioning an extremely OKAP-worthy condition associated with it…Questions about this condition could be Retina-based or Peds-based…That condition is Coats disease.

- Age of presentation? 5 years
- Gender? Male
- Laterality? Unilateral
- Presenting sign? Leukocoria

Exudative (ERD)
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Retinal Detachment Overview

Coats disease: ERD
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--Age of presentation?

Retinal Detachment Overview

Retinal Detachment

Rhegmatogenous

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Retinal Detachment Overview

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Retinal Detachment Overview

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Coats disease: Leukocoria
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Can Coats present in adulthood?
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--Age of presentation? 5 years
--Gender? Male
--Laterality? Unilateral
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Can Coats present in adulthood? Yes
We can’t talk about ERD without mentioning an extremely OKAP-worthy condition associated with it…Questions about this condition could be Retina-based or Peds-based…That condition is…Coats disease. In that regard:

--Age of presentation? 5 years
--Gender? Male
--What percent of cases are male? 70-80%
--Presenting sign? Leukocoria
We can’t talk about ERD without mentioning an extremely OKAP-worthy condition associated with it...Questions about this condition could be Retina-based or Peds-based...That condition is...Coats disease. In that regard:
--- Age of presentation? 5 years
--- Gender? Male
--- What percent of cases are male? About 70-80%
--- Presenting sign? Leukocoria
Retinal Detachment Overview

We can’t talk about ERD without mentioning an extremely OKAP-worthy condition associated with it…Questions about this condition could be Retina-based or Peds-based…That condition is…Coats disease. In that regard:

--Age of presentation? 5 years
--Gender? Male
--Laterality? Unilateral

What percent of cases are unilateral?
We can’t talk about ERD without mentioning an extremely OKAP-worthy condition associated with it…Questions about this condition could be Retina-based or Peds-based…That condition is…Coats disease. In that regard:

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--Gender? **Male**
--Laterality? **Unilateral**

- **What percent of cases are unilateral?** About **70-80%**
Retinal Detachment Overview

Retinal Detachment

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What feared condition is Coats on the DDx for?
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--Age of presentation? 5 years
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--Laterality? Unilateral
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What feared condition is Coats on the DDx for? Retinoblastoma
Is it Coats, or exophytic Rb?
Coats. Note the vascular anomalies
In Coats, the retinal vessels are dilated, with microaneurysms and telangiectasias. (Note also the yellow hue.)

In Rb, the retinal vessels are normal in appearance.
In Coats, the retinal vessels are dilated, with microaneurysms and telangiectasias. (Note also the yellow hue.)

For more on Coats dz, see slide-set R13; on differentiating Coats from Rb, R1

In Rb, the retinal vessels are normal in appearance.