Retinal Lesions…

…Predisposing to RD

Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

…NOT Predisposing to RD

Divide the lesions into their respective categories
Retinal Lesions…

…Predisposing to RD

Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

…NOT Predisposing to RD

Before we start, some background info. What are the three classes of retinal detachment (RD)?
Divide the lesions into their respective categories

Retinal Lesions...

…Predisposing to RD …NOT Predisposing to RD

Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

Before we start, some background info. What are the three classes of retinal detachment (RD)? Exudative, tractional and rhegmatogenous
Before we start, some background info. What are the three classes of retinal detachment (RD)? **Exudative, tractional and rhegmatogenous**

Looking over the list of lesions above, which of the three is this slide-set concerned with?

Retinal Lesions…

...Predisposing to RD  ...NOT Predisposing to RD

Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

**Divide the lesions into their respective categories**
Retinal Lesions…

…Predisposing to RD …NOT Predisposing to RD

- Lattice
- Cobblestone degeneration
- Vitreoretinal tufts
- Meridional folds
- RPE hyperplasia
- Enclosed ora bays
- RPE hypertrophy
- Peripheral cystoid degeneration

Before we start, some background info. What are the three classes of retinal detachment (RD)? Exudative, tractional and rhegmatogenous

Looking over the list of lesions above, which of the three is this slide-set concerned with? Rhegmatogenous
Divide the lesions into their respective categories

Retinal Lesions…

…Predisposing to RD

Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

…NOT Predisposing to RD

(OK, now start here and work your way down the list, placing each in the appropriate column)
Divide the lesions into their respective categories

Retinal Lesions...

...Predisposing to RD

- Lattice
  - Cobblestone degeneration
  - Vitreoretinal tufts
  - Meridional folds
  - RPE hyperplasia
  - Enclosed ora bays
  - RPE hypertrophy
  - Peripheral cystoid degeneration

...NOT Predisposing to RD
Retinal Lesions...

...Predisposing to RD
Lattice

...NOT Predisposing to RD
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

Divide the lesions into their respective categories
Divide the lesions into their respective categories

Retinal Lesions...

...Predisposing to RD
- Lattice
- Vitreoretinal tufts

...NOT Predisposing to RD
- Cobblestone degeneration
- Meridional folds
- RPE hyperplasia
- Enclosed ora bays
- RPE hypertrophy
- Peripheral cystoid degeneration
Divide the lesions into their respective categories

**Retinal Lesions…**

...Predisposing to RD
- Lattice
- Vitreoretinal tufts
- Meridional folds

...NOT Predisposing to RD
- Cobblestone degeneration
- RPE hyperplasia
- Enclosed ora bays
- RPE hypertrophy
- Peripheral cystoid degeneration
Divide the lesions into their respective categories

Retinal Lesions...

...Predisposing to RD
- Lattice
- Vitreoretinal tufts
- Meridional folds

...NOT Predisposing to RD
- Cobblestone degeneration
- RPE hyperplasia
- Enclosed ora bays
- RPE hypertrophy
- Peripheral cystoid degeneration
Divide the lesions into their respective categories

Retinal Lesions...

...Predisposing to RD
  Lattice
  Vitreoretinal tufts
  Meridional folds
  Enclosed ora bays

...NOT Predisposing to RD
  Cobblestone degeneration
  RPE hyperplasia
  RPE hypertrophy
  Peripheral cystoid degeneration
Divide the lesions into their respective categories

Retinal Lesions...

…Predisposing to RD
- Lattice
- Vitreoretinal tufts
- Meridional folds
- Enclosed ora bays

…NOT Predisposing to RD
- Cobblestone degeneration
- RPE hyperplasia
- RPE hypertrophy
- Peripheral cystoid degeneration
Divide the lesions into their respective categories

Retinal Lesions…

…Predisposing to RD
- Lattice
- Vitreoretinal tufts
- Meridional folds
- Enclosed ora bays

…NOT Predisposing to RD
- Cobblestone degeneration
- RPE hyperplasia
- RPE hypertrophy
- Peripheral cystoid degeneration
Lattice

Cobblestone degeneration

Vitreoretinal tufts

Meridional folds

RPE hyperplasia

Enclosed ora bays

RPE hypertrophy

Peripheral cystoid degeneration

--Actually prevents RD extension

--RD usually 2° to tractional tear at posterior edge of lesion

--Black and flat

--Small peripheral retinal elevations 2° to vitreous or zonular traction

--Present in 100% of adults >20 y.o.

--Spiculated appearance

--Islands of pars plana epithelium surrounded by retina

--Redundant linear retinal elevations
Retinal Lesions: Matching

- Lattice
  - Cobblestone degeneration
  - Vitreoretinal tufts
  - Meridional folds
  - RPE hyperplasia
  - Enclosed ora bays
  - RPE hypertrophy
  - Peripheral cystoid degeneration

  -- Actually prevents RD extension
  -- RD usually 2° to tractional tear at posterior edge of lesion
  -- Black and flat
  -- Small peripheral retinal elevations 2° to vitreous or zonular traction
  -- Present in 100% of adults >20 y.o.
  -- Spiculated appearance
  -- Islands of pars plana epithelium surrounded by retina
  -- Redundant linear retinal elevations
How common is lattice degeneration?

- Lattice
- Cobblestone degeneration
- Vitreoretinal tufts
- Meridional folds
- RPE hyperplasia
- Enclosed ora bays
- RPE hypertrophy
- Peripheral cystoid degeneration

- Black and flat
- Small peripheral retinal elevations related to tractional tear at edge of lesion
- Present in 100% of adults >20
- Spiculated appearance
- Islands of pars plana epithelium surrounded by retina
- Redundant linear retinal elevations
Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

---Actually prevents RD extension
---RD usually 2° to tractional tear at posterior edge of lesion
---Black and flat
---Small peripheral retinal elevations 2° to vitreous or zonular traction
---Present in 100% of adults >20
---Spiculated appearance
---Islands of pars plana epithelium surrounded by retina
---Redundant linear retinal elevations

How common is lattice degeneration?
Quite--it is found in 5-10% of the population

How common is lattice degeneration? Quite--it is found in 5-10% of the population
Lattice degeneration:
- Cobblestone pattern
- Vitreoretinal tufts
- Meridional folds
- RPE hyperplasia
- Enclosed ora bays
- RPE hypertrophy
- Peripheral cystoid degeneration

- Black and flat
- Small peripheral retinal elevations secondary to vitreous or zonular traction
- Present in 100% of adults >20
- Spiculated appearance
- Islands of pars plana epithelium surrounded by retina
- Redundant linear retinal elevations

Retinal Lesions: Matching

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

When present, how likely is lattice to be bilateral?
Quite—it is bilateral in 1/3 to 1/2 of lattice pts

- Actually prevents RD extension
- RD usually 2° to tractional tear at posterior edge of lesion

- Present in 100% of adults >20

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

When present, how likely is lattice to be bilateral? Quite—it is bilateral in 1/3 to 1/2 of lattice pts
How common is lattice degeneration?
Quite—it is found in 5-10% of the population.

When present, how likely is lattice to be bilateral?
Quite—it is bilateral in % to % of lattice pts.

- Lattice
- Cobblestone pattern of white and black retinal elevations
- Vitreoretinal tufts—Black and flat
- Meridional folds—Small peripheral retinal elevations due to tractional tear at posterior edge of lesion
- RPE hyperplasia—Present in 100% of adults >20
- Enclosed ora bays—Spiculated appearance
- RPE hypertrophy—Islands of pars plana epithelium surrounded by retina
- Peripheral cystoid degeneration—Redundant linear retinal elevations

A/Q
Retinal Lesions: Matching
How common is lattice degeneration?
Quite—it is found in 5-10% of the population

When present, how likely is lattice to be bilateral?
Quite—it is bilateral in 1/3 to 1/2 of lattice pts

Retinal Lesions: Matching

Vitreoretinal tufts
--Black and flat

Meridional folds
--Small peripheral retinal elevations 2° to vitreous or zonular traction

RPE hyperplasia
--Present in 100% of adults >20

Enclosed ora bays
--Spiculated appearance

RPE hypertrophy
--Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration
--Redundant linear retinal elevations

Cobblestone degeneration

Vitreoretinal tufts

Meridional folds

RPE hyperplasia

Enclosed ora bays

RPE hypertrophy

Peripheral cystoid degeneration

--Actually prevents RD extension to tractional tear at posterior edge of lesion

--RD usually 2° to tractional tear at posterior edge of lesion

--Black and flat

--Small peripheral retinal elevations 2° to vitreous or zonular traction

--Present in 100% of adults >20

--Spiculated appearance

--Islands of pars plana epithelium surrounded by retina

--Redundant linear retinal elevations
Lattice degeneration

Cobblestone degeneration

Vitreoretinal tufts

Meridional folds

RPE hyperplasia

Enclosed ora bays

RPE hypertrophy

Peripheral cystoid degeneration

--- Actually prevents RD extension
--- RD usually 2° to tractional tear at posterior edge of lesion
--- Black and flat
--- Small peripheral retinal elevations 2° to vitreous or zonular traction
--- Present in 100% of adults >20
--- Spiculated appearance
--- Islands of pars plana epithelium surrounded by retina
--- Redundant linear retinal elevations

**How common is lattice degeneration?**
Quite--it is found in 5-10% of the population

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

While not inevitable, a familial predisposition is often found
Retinal Lesions: Matching

How common is lattice degeneration?
Quite--it is found in 5-10% of the population

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

Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

--Black and flat
--Small peripheral retinal elevations 2° to vitreous or zonular traction
--Present in 100% of adults >20
--Spiculated appearance
--Islands of pars plana epithelium surrounded by retina
--Redundant linear retinal elevations

Actually prevents RD extension
--RD usually 2° to tractional tear at posterior edge of lesion
--Black and flat
--Small peripheral retinal elevations

How common is lattice degeneration?
Quite--it is found in 5-10% of the population

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

Retinal Lesions: Matching

Lattice
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

--Black and flat
--Small peripheral retinal elevations 2° to vitreous or zonular traction
--Present in 100% of adults >20
--Spiculated appearance
--Islands of pars plana epithelium surrounded by retina
--Redundant linear retinal elevations
How common is lattice degeneration? Quite--it is found in 5-10% of the population

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 Lesions: Matching

Lattice: How common is lattice degeneration? Quite--it is found in 5-10% of the population

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

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

Cobblestone degeneration: Small peripheral retinal elevations 2° to vitreous or zonular traction

Vitreoretinal tufts: --Black and flat

Meridional folds: --Small peripheral retinal elevations 2° to vitreous or zonular traction

RPE hyperplasia: --Present in 100% of adults >20

Enclosed ora bays: --Spiculated appearance

RPE hypertrophy: --Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration: --Redundant linear retinal elevations
A

**Retinal Lesions: Matching**

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

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

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

Lattice

Cobblestone degeneration

Vitreoretinal tufts

Meridional folds

RPE hyperplasia

Enclosed ora bays

RPE hypertrophy

Peripheral cystoid degeneration

--Black and flat

--Small peripheral retinal elevations

2° to vitreous or zonular traction

--Present in 100% of adults >20

--Spiculated appearance

--Islands of pars plana epithelium surrounded by retina

--Redundant linear retinal elevations

Actual prevents RD extension

RD usually 2° to tractional tear at posterior edge of lesion

Black and flat

Small peripheral retinal elevations
Lattice degeneration: Note the retinal thinning, which is characterized by a color change. There are also pigment clumps and crosshatching of sclerotic vessels.
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.

Retinal tears (with subsequent rhegmatogenous RD can result from traction on these abnormal vitreo-retinal adhesions.

- Lattice
  - Cobblestone degeneration
    -- Actually prevents RD extension
  - Enclosed ora bays
    -- Spiculated appearance
  - RPE hypertrophy
    -- Islands of pars plana epithelium surrounded by retina
  - Peripheral cystoid degeneration
    -- Redundant linear retinal elevations
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.

Retinal tears (with subsequent rhegmatogenous RD can result from traction on these abnormal vitreo-retinal adhesions.)

Lattice--Actually prevents RD extension
Cobblestone degeneration--RD usually 2° to tractional tear at posterior edge of lesion
Enclosed ora bays--Spiculated appearance
RPE hypertrophy--Islands of pars plana epithelium surrounded by retina
Peripheral cystoid degeneration--Redundant linear retinal elevations
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) 
3) Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

Cobblestone degeneration

Retinal Lesions: Matching

Lattice

--Actually prevents RD extension

Cobblestone degeneration

--RD usually 2o to tractional tear at posterior edge of lesion

Enclosed ora bays

--Spiculated appearance

RPE hypertrophy

--Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration

--Redundant linear retinal elevations
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;
3) abnormally firm adhesion between the edges of the retina lesion and the walls of the overlying pocket of liquefied vitreous.

Retinal tears (with subsequent rhegmatogenous RD) can result from traction on these abnormal vitreo-retinal adhesions.
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
3)
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.
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.

--Actually prevents RD extension

--RD usually 2° to tractional tear at posterior edge of lesion

Enclosed ora bays

RPE hypertrophy

Peripheral cystoid degeneration

--Spiculated appearance

--Islands of pars plana epithelium surrounded by retina

--Redundant linear retinal elevations
Figure 16-3  Lattice degeneration.  A, Color fundus photograph of lattice degeneration as viewed without scleral indentation. Vascular sheathing is apparent where the vessel crosses the area of lattice. Characteristic white lattice lines are visible.  B, Color fundus photograph of another example of lattice degeneration demonstrates associated hyperpigmentation, which is commonly observed.  (Part A used with permission from Byer NE. Peripheral Retina in Profile: A Stereoscopic Atlas. Torrance, CA: Criterion Press; 1982.)
Lattice degeneration

Cobblestone degeneration

Peripheral cystoid degeneration

RPE hypertrophy

Enclosed ora bays

Vitreoretinal tufts

Meridional folds

RPE hyperplasia

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 retinal lesion and the walls of the overlying pocket of liquefied vitreous

Retinal tears (with subsequent rhegmatogenous RD) can result from traction on these abnormal vitreo-retinal adhesions.

Retinal lesions:

- RD usually 2° to tractional tear at posterior edge of lesion
- Actually prevents RD extension
- Spiculated appearance
- Islands of pars plana epithelium surrounded by retina
- Redundant linear retinal elevations
Retinal tear at the posterior edge of lattice degeneration
Lattice - Actually prevents RD extension

Cobblestone degeneration - RD usually 2º to tractional tear at posterior edge of lesion

Vitreoretinal tufts - Black and flat

Meridional folds - Small peripheral retinal elevations 2º to vitreous or zonular traction

RPE hyperplasia - Present in 100% of adults >20 y.o.

Enclosed ora bays - Spiculated appearance

RPE hypertrophy - Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration - Redundant linear retinal elevations
Retinal Lesions: Matching

- Lattice
- Cobblestone degeneration
- Vitreoretinal tufts
- Meridional folds
- RPE hyperplasia
- Enclosed ora bays
- RPE hypertrophy
- Peripheral cystoid degeneration

- Actually prevents RD extension
- RD usually 2° to tractional tear at posterior edge of lesion
- Black and flat
- Small peripheral retinal elevations 2° to vitreous or zonular traction
- Present in 100% of adults >20 y.o.
- Spiculated appearance
- Islands of pars plana epithelium surrounded by retina
- Redundant linear retinal elevations
**What is the ophthalmoscopic appearance of cobblestone (aka paving-stone) degeneration?**

Small discrete white/yellow areas, often with a thin rim of hypertrophic RPE. The areas are often closely confluent (hence their harkening to the appearance of cobble- or paving-stones). They are found anterior to the equator, often close to the ora.

**Histological essence of cobblestone degeneration:**

They are focal areas of atrophic outer retina/RPE/choriocapillaris. The remaining retinal layers are fused to the underlying Bruch's membrane.

**How do they prevent extension of an RD?**

Because they involve fusion of the neurosensory retina to Bruchs, they do not allow liquid vitreous to proceed through their location.

---

**Retinal Lesions: Matching**

- **Lattice**
  --Actually prevents RD extension

- **Cobblestone degeneration**
  --RD usually 2° to tractional tear at posterior edge of lesion
  --Actually prevents RD extension

- RPE hypertrophy
  --Islands of pars plana epithelium surrounded by retina
  --Redundant linear retinal elevations
**What is the ophthalmoscopic appearance of cobblestone (aka paving-stone) degeneration?**

Small discrete white/yellow areas, often with a thin rim of hypertrophic RPE. The areas are often closely confluent (hence their harkening to the appearance of cobble- or pavingstones). They are found anterior to the equator, often close to the ora serrata.
Retinal Lesions: Matching

Figure 16-10  Gross appearance of paving-stone degeneration. (Used with permission from Green WR. Pathology of the retina. In: Frayer WC, ed. Lancaster Course in Ophthalmic Histopathology, unit 9, Philadelphia: FA Davis; 1988:181.)
Lattice

Cobblestone degeneration

--Actually prevents RD extension
--RD usually 2° to tractional tear at posterior edge of lesion
--Black and flat
--Small peripheral retinal elevations 2° to vitreous or zonular traction
--Present in 100% of adults >20 y.o.
--Spiculated appearance
--Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration

What is the ophthalmoscopic appearance of cobblestone (aka paving-stone) degeneration?
Small discrete white/yellow areas, often with a thin rim of hypertrophic RPE. The areas are often closely confluent (hence their harkening to the appearance of cobble- or pavingstones). They are found anterior to the equator, often close to the ora serrata.

What is the ora serrata?
The junction between the peripheral retina and the pars plana of the ciliary body.

RPE hypertrophy

Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration

--Redundant linear retinal elevations
What is the ophthalmoscopic appearance of cobblestone (aka paving-stone) degeneration? Small discrete white/yellow areas, often with a thin rim of hypertrophic RPE. The areas are often closely confluent (hence their harkening to the appearance of cobble- or pavingstones). They are found anterior to the equator, often close to the ora serrata.

What is the ora serrata? The junction between the peripheral retina and the pars plana of the ciliary body.

What is the histological essence of cobblestone? They are focal areas of atrophic outer retina/RPE/choriocapillaris. The remaining retinal layers are fused to the underlying Bruch's membrane.

How do they prevent extension of an RD? Because they involve fusion of the neurosensory retina to Bruch's, they do not allow liquid vitreous to proceed through their location.

Why do retinal lesions prevent RD extension?--Actually prevents RD extension

RD usually 2° to tractional tear at posterior edge of lesion

Black and flat

Small peripheral retinal elevations 2° to vitreous or zonular traction

Present in 100% of adults >20 y.o.

Spiculated appearance

Islands of pars plana epithelium surrounded by retina

Redundant linear retinal elevations
Ora serrata

Pars plana of ciliary body

Peripheral retina
What is the ophthalmoscopic appearance of cobblestone (aka paving-stone) degeneration?
Small discrete white/yellow areas, often with a thin rim of hypertrophic RPE. The areas are often closely confluent (hence their harkening to the appearance of cobble- or pavingstones).
They are found anterior to the equator, often close to the ora serrata.

What is the histological essence of cobblestones?
Focal areas of atrophic outer retina/RPE/choriocapillaris. The remaining retinal layers are fused to the underlying Bruch's membrane.

How do they prevent extension of an RD?
Because they involve fusion of the neurosensory retina to Bruchs, they do not allow liquid vitreous to proceed through their location.
**What is the ophthalmoscopic appearance of cobblestone (aka paving-stone) degeneration?**
Small discrete white/yellow areas, often with a thin rim of hypertrophic RPE. The areas are often closely confluent (hence their harkening to the appearance of cobble- or pavingstones). They are found anterior to the equator, often close to the ora serrata.

**What is the histological essence of cobblestones?**
They are focal areas of atrophic outer retina/RPE/choriocapillaris. The remaining retinal layers are fused to the underlying Bruch’s membrane.
Q

Retinal Lesions: Matching

Lattice

--Actually prevents RD extension

Cobblestone degeneration

--RD usually 2° to tractional tear at posterior edge of lesion

What is the ophthalmoscopic appearance of cobblestone (aka paving-stone) degeneration?
Small discrete white/yellow areas, often with a thin rim of hypertrophic RPE. The areas are often closely confluent (hence their harkening to the appearance of cobble- or pavingstones). They are found anterior to the equator, often close to the ora serrata.

What is the histological essence of cobblestones?
They are focal areas of atrophic outer retina/RPE/choriocapillaris. The remaining retinal layers are fused to the underlying Bruch’s membrane.

How do they prevent extension of an RD?

Peripheral cystoid degeneration

--Redundant linear retinal elevations

RPE hypertrophy

--Islands of pars plana epithelium surrounded by retina
### Retinal Lesions: Matching

<table>
<thead>
<tr>
<th>Lattice</th>
<th>Cobblestone degeneration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Actually prevents RD extension</td>
</tr>
<tr>
<td></td>
<td>--RD usually 2° to tractional tear at posterior edge of lesion</td>
</tr>
<tr>
<td></td>
<td>What is the ophthalmoscopic appearance of cobblestone (aka paving-stone) degeneration? Small discrete white/yellow areas, often with a thin rim of hypertrophic RPE. The areas are often closely confluent (hence their harkening to the appearance of cobble- or pavingstones). They are found anterior to the equator, often close to the ora serrata.</td>
</tr>
<tr>
<td></td>
<td>What is the histological essence of cobblestones? They are focal areas of atrophic outer retina/RPE/choriocapillaris. The remaining retinal layers are fused to the underlying Bruch's membrane.</td>
</tr>
<tr>
<td></td>
<td>How do they prevent extension of an RD? Because they involve fusion of the neurosensory retina to Bruch's, they do not allow liquid vitreous to proceed through their location</td>
</tr>
<tr>
<td></td>
<td>RPE hypertrophy</td>
</tr>
<tr>
<td></td>
<td>Islands of pars plana epithelium surrounded by retina</td>
</tr>
<tr>
<td></td>
<td>Peripheral cystoid degeneration</td>
</tr>
<tr>
<td></td>
<td>--Redundant linear retinal elevations</td>
</tr>
</tbody>
</table>

---

48
Lattice

--Actually prevents RD extension

Cobblestone degeneration

--RD usually 2° to tractional tear at posterior edge of lesion

Vitreoretinal tufts

--Black and flat

Meridional folds

--Small peripheral retinal elevations 2° to vitreous or zonular traction

RPE hyperplasia

--Present in 100% of adults >20 y.o.

Enclosed ora bays

--Spiculated appearance

RPE hypertrophy

--Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration

--Redundant linear retinal elevations
Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

--Actually prevents RD extension
--RD usually 2º to tractional tear at posterior edge of lesion
--Black and flat
--Small peripheral retinal elevations 2º to vitreous or zonular traction
--Present in 100% of adults >20
--Spiculated appearance
--Islands of pars plana epithelium surrounded by retina
--Redundant linear retinal elevations
Vitreoretinal tufts are known also by what name?

- Peripheral retinal tufts

What are vitreoretinal tufts composed of?

- They are highly focal areas of glial hyperplasia firmly attached to both the vitreous face/zonules and the retina. Because of the strength of these attachments, traction arising in the vitreous (or zonules) will elevate the retina. If sufficient traction is applied, the retina will break, resulting in a hole or horseshoe tear.

- Both the Matching answer and the one above referenced zonules. What gives?

There are three subtypes of vitreoretinal tufts, one of which bridges between the retina and the zonules, not vitreous.

Retinal Lesions: Matching

- Lattice
- Cobblestone degeneration
- Meridional folds
- RPE hyperplasia
- --Actually prevents RD extension
- --RD usually 2° to tractional tear at posterior edge of lesion
- --Black and flat
- --Small peripheral retinal elevations 2° to vitreous or zonular traction
Vitreoretinal tufts are known also by what name?

Peripheral retinal tufts
Vitreoretinal tufts are known also by what name?

Peripheral retinal tufts

What are vitreoretinal tufts composed of?

They are highly focal areas of glial hyperplasia firmly attached to both the vitreous face/zonules and the retina. Because of the strength of these attachments, traction arising in the vitreous (or zonules) will elevate the retina. If sufficient traction is applied, the retina will break, resulting in a hole or horseshoe tear.

There are three subtypes of vitreoretinal tufts, one of which bridges between the retina and the zonules, not vitreous.
Vitreoretinal tufts are known also by what name?
Peripheral retinal tufts

What are vitreoretinal tufts composed of?
They are highly focal areas of glial hyperplasia firmly attached to both the vitreous face/zonules and the retina. Because of the strength of these attachments, traction arising in the vitreous (or zonules) will elevate the retina. If sufficient traction is applied, the retina will break, resulting in a hole or horseshoe tear.
Figure 16-7  Color photograph of a gross eye specimen shows a cluster of white surface nodules with characteristic gross appearance and location of noncystic retinal tufts. (Used with permission from Foos RY, Silverstein RN, eds. System of Ocular Pathology. Vol. 3. Los Angeles: iPATH Press; 2004.)
Vitreoretinal tufts are known also by what name?
Peripheral retinal tufts

What are vitreoretinal tufts composed of?
They are highly focal areas of glial hyperplasia firmly attached to both the vitreous face/zonules and the retina. Because of the strength of these attachments, traction arising in the vitreous (or zonules) will elevate the retina. If sufficient traction is applied, the retina will break, resulting in a hole or horseshoe tear.

Wait—both the Matching answer and the one above referenced zonules. What gives?
Vitreoretinal tufts

Vitreoretinal tufts are known also by what name?
Peripheral retinal tufts

What are vitreoretinal tufts composed of?
They are highly focal areas of glial hyperplasia firmly attached to both the vitreous face/zonules and the retina. Because of the strength of these attachments, traction arising in the vitreous (or zonules) will elevate the retina. If sufficient traction is applied, the retina will break, resulting in a hole or horseshoe tear.

Wait—both the Matching answer and the one above referenced zonules. What gives?
There are three subtypes of vitreoretinal tufts, one of which bridges between the retina and the zonules, not vitreous
Color photo of a gross eye specimen shows a small zonular traction tuft (arrow) with cystic base. Note that the tuft points anteriorly toward the peripheral lens.
Retinal Lesions: Matching

- Lattice
  -- Actually prevents RD extension

- Cobblestone degeneration
  -- RD usually 2° to tractional tear at posterior edge of lesion

- Vitreoretinal tufts
  -- Black and flat

- Meridional folds
  -- Small peripheral retinal elevations 2° to vitreous or zonular traction
  -- Present in 100% of adults >20 y.o.
  -- Spiculated appearance

- RPE hyperplasia

- Enclosed ora bays

- RPE hypertrophy

- Peripheral cystoid degeneration
  -- Redundant linear retinal elevations
Retinal Lesions: Matching

Lattice
- Actually prevents RD extension

Cobblestone degeneration
- RD usually 2° to tractional tear at posterior edge of lesion

Vitreoretinal tufts
- Black and flat

Meridional folds
- Small peripheral retinal elevations 2° to vitreous or zonular traction

RPE hyperplasia
- Present in 100% of adults >20 y.o.

Enclosed ora bays
- Spiculated appearance

RPE hypertrophy
- Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration
- Redundant linear retinal elevations
Lattice
- Actually prevents RD extension
Cobblestone degeneration
- RD usually 2° to tractional tear at posterior edge of lesion
Vitreoretinal tufts
- Black and flat
- Present in 100% of adults >20 y.o.
- Spiculated appearance
- Islands of pars plana epithelium surrounded by retina
- Redundant linear retinal elevations

Meridional folds
How are meridional folds oriented?
- Anterior-posterior. Think of them as ‘ridges of retina’ that start at the ora and run posteriorly a millimeter or two.
- With what common (at the ora) retinal finding are they associated?
- Dentate processes
- How do they increase the risk of an RD?
- The vitreous base straddles these structures, and post-PVD traction at the posterior end of the fold can lead to a horseshoe tear

Peripheral systolic degeneration
- --Redundant linear retinal elevations
Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
--Actually prevents RD extension
--RD usually 2° to tractional tear at posterior edge of lesion
--Black and flat
--Small peripheral retinal elevations 2° to vitreous or zonular traction

How are meridional folds oriented?
Anterior-posterior. Think of them as ‘ridges of retina’ that start at the ora and run posteriorly a millimeter or two.

Peripheral systolic degeneration
--Redundant linear retinal elevations
Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds

--- Actually prevents RD extension
--- RD usually 2° to tractional tear at posterior edge of lesion
--- Black and flat
--- Small peripheral retinal elevations 2° to vitreous or zonular traction

How are meridional folds oriented?
Anterior-posterior. Think of them as ‘ridges of retina’ that start at the ora and run posteriorly a millimeter or two.

With what common (at the ora) retinal findings are they associated?

Peripheral systolic degeneration

--Redundant linear retinal elevations
How are meridional folds oriented?
Anterior-posterior. Think of them as ‘ridges of retina’ that start at the ora and run posteriorly a millimeter or two.

With what common (at the ora) retinal findings are they associated?
Dentate processes and ora bays

Peripheral systolic degeneration

Lattice
--Actually prevents RD extension

Cobblestone degeneration
--RD usually 2° to tractional tear at posterior edge of lesion

Vitreoretinal tufts

Meridional folds
--Black and flat
--Small peripheral retinal elevations 2° to vitreous or zonular traction

Peripheral cystoid degeneration

--Redundant linear retinal elevations
Lattice

Cobblestone degeneration

Vitreoretinal tufts

Meridional folds

RPE hyperplasia

Enclosed ora bays

Peripheral cystoid degeneration

--Actually prevents RD extension

--RD usually 2° to tractional tear at posterior edge of lesion

--Black and flat

--Small peripheral retinal elevations 2° to vitreous or zonular traction

65

How are meridional folds oriented?
Anterior-posterior. Think of them as ‘ridges of retina’ that start at the ora and run posteriorly a millimeter or two.

With what common (at the ora) retinal finding are they associated?
Dentate processes and ora bays

Dentate processes look like very pointy teeth (hence the word dentate)

Pars plana of the ciliary body

Peripheral retina

Peripheral systolic degeneration

--Redundant linear retinal elevations
Lattice

Cobblestone degeneration

Vitreoretinal tufts

Meridional folds

RPE hyperplasia

Enclosed ora bays

Peripheral cystoid degeneration

---Actually prevents RD extension

---RD usually 2° to tractional tear at posterior edge of lesion

---Black and flat

---Small peripheral retinal elevations 2° to vitreous or zonular traction

---Present in 100% of adults >20 y.o.

---Spiculated appearance

---Islands of pars plana epithelium surrounded by retina

---Redundant linear retinal elevations

How are meridional folds oriented?

Anterior-posterior. Think of them as 'ridges of retina' that start at the ora and run posteriorly a millimeter or two.

With what common (at the ora) retinal finding are they associated?

Dentate processes and ora bays

Dentate processes look like very pointy teeth (hence the word dentate)

Ora bays look like inlets of water (hence the word bay)

Ora bays

Pars plana of the ciliary body

Peripheral retina

Peripheral systoid degeneration

---Redundant linear retinal elevations
**Retinal Lesions: Matching**

Lattice  
--Actually prevents RD extension

Cobblestone degeneration  
--RD usually 2° to tractional tear at posterior edge of lesion

Vitreoretinal tufts  
--Black and flat

Meridional folds  
--Present in 100% of adults >20 y.o.  
--Spiculated appearance  
--Islands of pars plana epithelium surrounded by retina  
--Redundant linear retinal elevations

**Meridional folds** are elevated ridges of retina within a dentate process  
‘ridges of retina’ that start at the ora and run posteriorly a millimeter or two

**Dentate processes** look like very pointy teeth (hence the word dentate)  
With what common (at the ora) retinal finding are they associated?  
Dentate processes and ora bays

Ora bays  
Ora bays look like inlets of water (hence the word bay)

Pars plana of the ciliary body

Peripheral retina

Peripheral systolic degeneration  
--Redundant linear retinal elevations
Meridional fold (*large white arrow*)

- Dentate process
- Ora bay
How are meridional folds oriented?
Anterior-posterior. Think of them as ‘ridges of retina’ that start at the ora and run posteriorly a millimeter or two.

With what common (at the ora) retinal findings are they associated?
Dentate processes and ora bays

How do meridional folds increase the risk of an RD?
Peripheral systolic degeneration

Reticular folds
--Actually prevents RD extension
Cobblestone degeneration
--RD usually 2° to tractional tear at posterior edge of lesion
Vitreoretinal tufts
--Black and flat
Meridional folds
--Small peripheral retinal elevations 2° to vitreous or zonular traction

Peripheral cystoid degeneration
--Redundant linear retinal elevations
How are meridional folds oriented?
Anterior-posterior. Think of them as ‘ridges of retina’ that start at the ora and run posteriorly a millimeter or two.

With what common (at the ora) retinal findings are they associated?
Dentate processes and ora bays

How do meridional folds increase the risk of an RD?
The vitreous base straddles these structures, and post-PVD traction at the end of the fold can lead to a horseshoe tear.

--Redundant linear retinal elevations
Lattice --Actually prevents RD extension
Cobblestone degeneration
Vitreoretinal tufts
**Meridional folds**

How are meridional folds oriented?
Anterior-posterior. Think of them as ‘ridges of retina’ that start at the ora and run posteriorly a millimeter or two.

With what common (at the ora) retinal findings are they associated?
Dentate processes and ora bays

How do meridional folds increase the risk of an RD?
The vitreous base straddles these structures, and post-PVD traction at the posterior end of the fold can lead to a horseshoe tear

Peripheral cystoid degeneration

Cobblestone degeneration --RD usually 2° to tractional tear at posterior edge of lesion
--Black and flat

Vitreoretinal tufts
--Small peripheral retinal elevations 2° to vitreous or zonular traction

71
**Retinal Lesions: Matching**

- **Lattice**
  --Actually prevents RD extension

- **Cobblestone degeneration**
  --RD usually 2º to tractional tear at posterior edge of lesion

- **Vitreoretinal tufts**
  --Black and flat

- **Meridional folds**
  --Small peripheral retinal elevations 2º to vitreous or zonular traction

- **RPE hyperplasia**
  --Present in 100% of adults >20 y.o.
  --Spiculated appearance

- **Enclosed ora bays**

- **RPE hypertrophy**

- **Peripheral cystoid degeneration**
  --Redundant linear retinal elevations
Retinal Lesions: Matching

- Lattice
  - Actually prevents RD extension

- Cobblestone degeneration
  - RD usually 2° to tractional tear at posterior edge of lesion

- Vitreoretinal tufts
  - Black and flat

- Meridional folds
  - Small peripheral retinal elevations 2° to vitreous or zonular traction

- RPE hyperplasia
  - Present in 100% of adults >20 y.o.

- Enclosed ora bays
  - Spiculated appearance

- RPE hypertrophy

- Peripheral cystoid degeneration
  - Islands of pars plana epithelium surrounded by retina

  --Redundant linear retinal elevations
Retinal Lesions: Matching

- Lattice
  - Actually prevents RD extension

- Cobblestone degeneration
  - RD usually 2° to tractional tear at posterior edge of lesion

- Vitreoretinal tufts
  - Black and flat

- Meridional folds
  - Small peripheral retinal elevations 2° to vitreous or zonular traction

- RPE hyperplasia
  - Present in 100% of adults >20 y.o.
    - Spiculated appearance
    - Islands of pars plana epithelium surrounded by retina
    - Redundant linear retinal elevations

- Enclosed ora bays

- RPE hypertrophy

- Peripheral cystoid degeneration
**Retinal Lesions: Matching**

- **Lattice**
  - Actually prevents RD extension

- **Cobblestone degeneration**
  - RD usually 2° to tractional tear at posterior edge of lesion

- **Vitreoretinal tufts**
  - Black and flat

- **Meridional folds**
  - Small peripheral retinal elevations 2° to vitreous or zonular traction

- **RPE hyperplasia**
  - Present in 100% of adults >20 y.o.

- **Enclosed ora bays**
  - Spiculated appearance

- **RPE hypertrophy**
  - Islands of pars plana epithelium surrounded by retina

- **Peripheral cystoid degeneration**
  - Redundant linear retinal elevations
**Ora bays**

- Pars plana of the ciliary body
- Peripheral retina

**Enclosed ora bays**

- How does an enclosed ora bay differ from the sort we encountered previously?
- Actually prevents RD extension
- RD usually 2° to tractional tear at posterior edge of lesion
- Black and flat
- Small peripheral retinal elevations 2° to vitreous or zonular traction
- Present in 100% of adults >20 y.o.
- Spiculated appearance
- Islands of pars plana epithelium surrounded by retina
- Redundant linear retinal elevations

**Retinal Lesions: Matching**
How does an enclosed ora bay differ from the sort we encountered previously?
It differs in that it is ‘cut off’ from the rest of the pars plana by retina.
Enclosed ora bay (*asterisk*)
Q

Retinal Lesions: Matching

Lattice
- Actually prevents RD extension

Cobblestone degeneration
- RD usually 2° to tractional tear at posterior edge of lesion

Vitreoretinal tufts
- Present in 100% of adults >20 y.o.
- Spiculated appearance

How does an enclosed ora bay differ from the sort we encountered previously?
It differs in that it is ‘cut off’ from the rest of the pars plana by retina

How do enclosed ora bays increase the risk of an RD?

Enclosed ora bays
- Islands of pars plana epithelium surrounded by retina
- Redundant linear retinal elevations

RPE hypertrophy

Peripheral cystoid degeneration
RPE hypertrophy
Peripheral cystoid degeneration

Enclosed ora bays

- Islands of pars plana epithelium surrounded by retina
- Redundant linear retinal elevations
- Spiculated appearance
- Present in 100% of adults > 20 y.o.

Vitreoretinal tufts

Lattice

Cobblestone degeneration

- RD usually 2° to tractional tear at posterior edge of lesion
- Actually prevents RD extension

Retinal Lesions: Matching

How does an enclosed ora bay differ from the sort we encountered previously?
It differs in that it is 'cut off from the rest of the pars plana by retina'

The vitreous base straddles these structures, and post-PVD traction on the retina at the end of the bay can lead to a tear
How do enclosed ora bays increase the risk of an RD?
It actually prevents RD extension
Retinal Lesions: Matching

Lattice — Actually prevents RD extension

Cobblestone degeneration — RD usually 2° to tractional tear at posterior edge of lesion

Vitreoretinal tufts

RPE hypertrophy — Isolated linear retinal elevations

Enclosed ora bays

RPE hyperplasia

Peripheral cystoid degeneration

How does an enclosed ora bay differ from the sort we encountered previously?
It differs in that it is ‘cut off’ from the rest of the pars plana by retina

How do enclosed ora bays increase the risk of an RD?
The vitreous base straddles these structures, and post-PVD traction on the retina at the posterior end of the bay can lead to a tear

Enclosed ora bays — Islands of pars plana epithelium surrounded by retina

— Present in 100% of adults >20 y.o.

— Spiculated appearance

— Redundant linear retinal elevations
Lattice
- Actually prevents RD extension

Cobblestone degeneration
- RD usually 2º to tractional tear at posterior edge of lesion

Vitreoretinal tufts
- Black and flat

Meridional folds
- Small peripheral retinal elevations 2º to vitreous or zonular traction

RPE hyperplasia
- Present in 100% of adults >20 y.o.

Enclosed ora bays
- Spiculated appearance

RPE hypertrophy
- Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration
- Redundant linear retinal elevations
A

**Retinal Lesions: Matching**

- **Lattice**
  --Actually prevents RD extension

- **Cobblestone degeneration**
  --RD usually 2° to tractional tear at posterior edge of lesion

- **Vitreoretinal tufts**
  --Black and flat

- **Meridional folds**
  --Small peripheral retinal elevations 2° to vitreous or zonular traction

- **RPE hyperplasia**

- **Enclosed ora bays**
  --Present in 100% of adults >20 y.o.

- **RPE hypertrophy**
  --Spiculated appearance

- **Peripheral cystoid degeneration**
  --Islands of pars plana epithelium surrounded by retina
  --Redundant linear retinal elevations
Lattice
Cobblestone degeneration
Vitreoretinal tufts
Meridional folds
RPE hyperplasia
Enclosed ora bays
RPE hypertrophy
Peripheral cystoid degeneration

--Actually prevents RD extension
--RD usually 2 o to tractional tear at posterior edge of lesion
--Black and flat
--Small peripheral retinal elevations 2 o to vitreous or zonular traction
--Present in 100% of adults >20 y.o.
--Spiculated appearance
--Islands of pars plana epithelium surrounded by retina
--Redundant linear retinal elevations
Retinal Lesions: Matching

Lattice
- Actually prevents RD extension

Cobblestone degeneration

Vitreoretinal tufts
- Black and flat

Meridional folds
- Small peripheral retinal elevations 2° to vitreous or zonular traction

RPE hyperplasia

Enclosed ora bays
- Spiculated appearance

RPE hypertrophy
- Islands of pars plana epithelium surrounded by retina

Peripheral cystoid degeneration
- Redundant linear retinal elevations

RD usually 2° to tractional tear at posterior edge of lesion

100% of adults >20 y.o.
Peripheral cystoid degeneration
There are two subtypes of peripheral cystoid degeneration—what are they?

- Reticular peripheral cystoid degeneration
- Peripheral cystoid degeneration
Retinal Lesions: Matching

Lattice
--Actually prevents RD extension

Cobblestone degeneration
--RD usually 2° to tractional tear at posterior edge of lesion

Vitreoretinal tufts
--Black and flat

Meridional folds
--Small peripheral retinal elevations 2° to vitreous or zonular traction

RPE hyperplasia
--Present in 100% of adults >20 y.o.

Enclosed are boxes:

There are two subtypes of peripheral cystoid degeneration—what are they?
-- Typical peripheral cystoid degeneration
-- Reticular peripheral cystoid degeneration

Peripheral cystoid degeneration
--Redundant linear retinal elevations

88
Lattice
--Actually prevents RD extension
Cobblestone degeneration
--RD usually 2° to tractional tear at posterior edge of lesion
Vitreoretinal tufts
--Black and flat
Enclosed ora bays
--Present in 100% of adults >20 y.o.
RPE hyperplasia
Islands of pars plana epithelium surrounded by retina
Peripheral cystoid degeneration
--Redundant linear retinal elevations

There are two subtypes of peripheral cystoid degeneration—what are they?
-- Typical peripheral cystoid degeneration?
-- Reticular peripheral cystoid degeneration?

Which form is present in 100% of 20+ individuals?
Retinal Lesions: Matching

There are two subtypes of peripheral cystoid degeneration—what are they?

- **Typical** peripheral cystoid degeneration
- **Reticular** peripheral cystoid degeneration

Which form is present in 100% of 20+ individuals?
Typical (that’s why it’s called ‘typical’)

- Lattice
- Cobblestone degeneration
- Vitreoretinal tufts
- Enclosed ora bays

**Peripheral cystoid degeneration**

- Redundant linear retinal elevations
- Present in 100% of adults >20 y.o.

- Actually prevents RD extension
- RD usually 2° to tractional tear at posterior edge of lesion
- Black and flat
- Small peripheral retinal elevations 2° to vitreous or zonular traction

There are two subtypes of peripheral cystoid degeneration—what are they?

- **Typical** peripheral cystoid degeneration
- **Reticular** peripheral cystoid degeneration
There are two subtypes of peripheral cystoid degeneration—what are they?

- **Typical** peripheral cystoid degeneration
- Reticular peripheral cystoid degeneration

Which form is present in 100% of 20+ individuals?
Typical (that’s why it’s called ‘typical’)

Where is typical cystoid degeneration found?

- Present in 100% of adults >20 y.o.
- Small peripheral retinal elevations 2° to vitreous or zonular traction
- Black and flat
- RD usually 2° to tractional tear at posterior edge of lesion
- Actually prevents RD extension

Retinal Lesions: Matching

**Q**
There are two subtypes of peripheral cystoid degeneration—what are they?

--- Typical peripheral cystoid degeneration
--- Reticular peripheral cystoid degeneration

Which form is present in 100% of 20+ individuals? Typical (that’s why it’s called ‘typical’)

Where is typical cystoid degeneration found? In the far periphery—it starts at the ora and extends several millimeters posteriorly

-- Actually prevents RD extension
-- RD usually 2° to tractional tear at posterior edge of lesion
-- Black and flat
-- Small peripheral retinal elevations 2° to vitreous or zonular traction
-- Present in 100% of adults >20 y.o.

Peripheral cystoid degeneration
Retinal Lesions: Matching

Typical peripheral cystoid degeneration. (A) Ultra-widefield pseudocolor image (B) High-magnification view (C) Near-Infrared reflectance image (D) SD-OCT
Lattice

Cobblestone degeneration

Vitreoretinal tufts

Which form is present in 100% of 20+ individuals? Typical (that’s why it’s called ‘typical’)

How prevalent is reticular cystoid degeneration?

RPE

-- Typical peripheral cystoid degeneration

-- Reticular peripheral cystoid degeneration

Peripheral cystoid degeneration

-- Actually prevents RD extension

-- RD usually 2° to tractional tear at posterior edge of lesion

-- Black and flat

-- Small peripheral retinal elevations 2° to vitreous or zonular traction

-- Present in 100% of adults >20 y.o.

Retinal Lesions: Matching

There are two subtypes of peripheral cystoid degeneration—what are they?

-- Typical peripheral cystoid degeneration—Reticular peripheral cystoid degeneration

Where is typical cystoid degeneration located?

It is always adjacent and just posterior to a section of the ‘typical’ form

Where is reticular cystoid degeneration located?

In the far periphery—it starts at the ora and extends several millimeters posteriorly

How prevalent is reticular cystoid degeneration?

It is found in ~20% of adults

How prevalent is typical cystoid degeneration?

It is found in 100% of adults >20 y.o.
A

Retinal Lesions: Matching

- Lattice
  - Actually prevents RD extension
- Cobblestone degeneration
  - RD usually 2° to tractional tear at posterior edge of lesion
- Vitreoretinal tufts
  - Black and flat
- Small peripheral retinal elevations 2° to vitreous or zonular traction
  - Present in 100% of adults >20 y.o.
- RPE hyperplasia
  - Islands of pars plana epithelium surrounded by retina
- Enclosed ora bays
  - Redundant linear retinal elevations
- Peripheral cystoid degeneration
  - Typical peripheral cystoid degeneration
    - Reticular peripheral cystoid degeneration
- Which form is present in 100% of 20+ individuals?
  - Typical (that's why it's called 'typical')
- How prevalent is reticular cystoid degeneration?
  - It is found in ~20% of adults

There are two subtypes of peripheral cystoid degeneration—what are they?
- Typical peripheral cystoid degeneration
- Reticular peripheral cystoid degeneration

Where is typical cystoid degeneration found?
- It is always adjacent and just posterior to a section of the 'typical' form

How prevalent is reticular cystoid degeneration?
- It is found in ~20% of adults

Where is typical cystoid degeneration located?
- In the far periphery—it starts at the ora and extends several millimeters posteriorly
Retinal Lesions: Matching

1. Lattice
   - Actually prevents RD extension

2. Cobblestone degeneration
   - RD usually 2° to tractional tear at posterior edge of lesion

3. Vitreoretinal tufts
   - Black and flat
   - Small peripheral retinal elevations 2° to vitreous or zonular traction

4. RPE hyperplasia
   - Present in 100% of adults >20 y.o.

- Which form is present in 100% of 20+ individuals?
  - Typical (that’s why it’s called ‘typical’)

- How prevalent is reticular cystoid degeneration?
  - It is found in ~20% of adults

- Where is reticular cystoid degeneration located?
  - It is always adjacent and just posterior to a section of the ‘typical’ form

- What are the subtypes of peripheral cystoid degeneration?
  - Typical peripheral cystoid degeneration
  - Reticular peripheral cystoid degeneration

- Peripheral cystoid degeneration
  - Redundant linear retinal elevations

- RPE
  - Islands of pars plana epithelium surrounded by retina
Retinal Lesions: Matching

Lattice

Cobblestone degeneration

Vitreoretinal tufts

Which form is present in 100% of 20+ individuals?
Typical (that's why it's called 'typical')

How prevalent is reticular cystoid degeneration?
It is found in ~20% of adults

Where is reticular cystoid degeneration located?
It is always adjacent and just posterior to a section of the 'typical' form

RPE

-- Typical peripheral cystoid degeneration
-- Reticular peripheral cystoid degeneration

Peripheral cystoid degeneration

--- Actually prevents RD extension

--- RD usually 2° to tractional tear at posterior edge of lesion

--- Black and flat

--- Small peripheral retinal elevations 2° to vitreous or zonular traction

--- Present in 100% of adults >20 y.o.

--- RPE hypertrophy

--- Isolated islands of RPE surrounded by retina

--- Redundant linear retinal elevations
Typical and reticular cystoid degeneration
Typical peripheral cystoid degeneration consists of cystoid spaces in the outer plexiform layer (asterisk) on the lower left (anterior retina). In the upper right (posterior retina), reticular peripheral cystoid degeneration (arrow) is present.
What is a retinal dialysis?

What is a retinal Dialysis?

Horseshoe tear

Operculated hole

Atrophic hole

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

Horseshoe tear

Operculated hole

Atrophic hole

Lattice
**Retinal Lesions: Not Matching**

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

**What is the inciting event?**

**Horseshoe tear**

**Operculated hole**

**Atrophic hole**

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

What is the inciting event?
Usually blunt trauma

Horseshoe tear
Operculated hole
Atrophic hole
Lattice
What is a retinal *Dialysis*?

A circumferential disinsertion of the peripheral retina from the ora serrata

What is the inciting event?

Usually blunt trauma

In general terms, what is the process by which dialysis occurs and proceeds?
What is a retinal dialysis?
A circumferential disinsertion of the peripheral retina from the ora serrata

What is the inciting event?
Usually blunt trauma

In general terms, what is the process by which dialysis occurs and proceeds?
Compression of the globe produces vitreous-based mechanical stress that gets focused at the ora region. This stress causes several clock-hours of neurosensory retina to ‘let go’ at the ora.
What is a retinal dialysis?
A circumferential disinsertion of the peripheral retina from the ora serrata

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

What is the inciting event?
Usually blunt trauma

Horseshoe tear

In general terms, what is the process by which dialysis occurs and proceeds?
Compression of the globe produces vitreous-based mechanical stress that gets focused at the ora region. This stress causes several clock-hours of neurosensory retina to ‘let go’ at the ora. After disinserting, the vitreous-based mechanical stress ‘peels’ the NS retina posteriorly, separating it from the underlying RPE
Retinal dialysis
What is a horseshoe tear?
Dialysis

What is a **Horseshoe tear**?

Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina

Operculated hole

Atrophic hole

Lattice
Horseshoe tear
What is a **Horseshoe tear**?

Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

Where are they typically found?
What is a **Horseshoe tear**?

Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

Where are they typically found?

In the far periphery, near the ora serrata.
Retinal Lesions: Not Matching

What is a Horseshoe tear?
Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

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

How do they develop?
Horseshoe tear

What is a horseshoe tear?
Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

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 Lesions: Not Matching

**What is a Horseshoe tear?**

Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

**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 and peels it back, producing the flap.
Retinal Lesions: Not Matching

Horseshoe tear mechanism
What is a **Horseshoe tear**?

Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

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 and peels it back, producing the flap.

What event most commonly precipitates this tension?

The occurrence of a posterior vitreous detachment.
Dialysis

**What is a Horseshoe tear?**

Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

**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 and peels it back, producing the flap.

**What event most commonly precipitates this tension?**

The occurrence of a posterior vitreous detachment.
What is a horseshoe tear?

Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

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 and peels it back producing the flap.

‘Vitreous tension tearing the retina and peeling it back’ sounds an awful lot like the description of retinal dialysis we saw a few slides ago. Are these fundamentally the same lesion?

Not at all—in fact, in an important sense they are the opposite of one another. In a retinal dialysis, the disinserted retina peels posteriorly, away from the vitreous base. In contrast, in a horseshoe tear the retina peels anteriorly, towards the vitreous base.
**What is a Horseshoe Tear?**

Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

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 and peels it back, producing the flap.

‘Vitreous tension tearing the retina and peeling it back’ sounds an awful lot like the description of retinal dialysis we saw a few slides ago. Are these fundamentally the same lesion?

Not at all—in fact, in an important sense they are the opposite of one another. In a retinal dialysis, the disinserted retina peels posteriorly, away from the vitreous base.

Retinal Lesions: Not Matching
What is a horseshoe tear? Just what it sounds like—a horseshoe-shaped defect torn in the neurosensory retina.

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.

Vitreous tension gets focused at this site, and the tongue of vitreous tears the retina and peels it back, producing the flap.

‘The flap’ (The black part is the tear itself)

‘Vitreous tension tearing the retina and peeling it back’ sounds an awful lot like the description of retinal dialysis we saw a few slides ago. Are these fundamentally the same lesion?

Not at all—in fact, in an important sense they are the opposite of one another. In a retinal dialysis, the disinserted retina peels posteriorly, away from the vitreous base. In contrast, in a horseshoe tear the retina peels anteriorly, towards the vitreous base.
Horseshoe tear: Retina peels *toward* vitreous base

Retinal dialysis: Retina peels *away* from vitreous base

Retinal Lesions: Not Matching
Retinal Lesions: Not Matching

Dialysis

Horseshoe tear

What is an Operculated hole?

Atrophic hole

Lattice

What does operculated mean?
Dialysis

Horseshoe tear

What is an Operculated hole?

Atrophic hole

Lattice
Dialysis
Horseshoe tear
What is an Operculated hole?
Atrophic hole
Lattice

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

OK, so what’s an operculum?
Dialysis

Horseshoe tear

What is an Operculated hole?

Atrophic hole

Lattice

Retinal Lesions: Not Matching

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 hole is a full-thickness break in the retina with the missing piece of retina suspended within the vitreous above the break.
Operculated retinal tear/hole: Mechanism

Operculated retinal tear/hole (far right of the pic) with the operculum floating in the vitreous
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 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?
What is an Operculated hole?
It means, ‘covered by an operculum’

OK, so what’s an operculum?
An operculum is a lid, or a cover. Thus, an operculated 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; ie, the operculum is the amputated flap (see above)
Retinal Lesions: Not Matching

Dialysis

Horseshoe tear

Operculated hole

What is an **Atrophic hole**?

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.”

Lattice
Dialysis

Horseshoe tear

Operculated hole

What is an Atrophic hole?

Lattice

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.
Atrophic retinal hole
Figure 16-6  Lattice degeneration with atrophic hole. **A,** Fundus photograph of lattice degeneration with a small atrophic hole as viewed with scleral depression. **B,** Fundus photograph of an example of an atrophic hole as may be observed in lattice degeneration without scleral depression. *(Part A courtesy of Norman E. Byer, MD.)*
Dialysis

Horseshoe tear

Operculated hole

Atrophic hole

(We already know about Lattice)
With respect to retinal breaks, what does it mean to say a pt is ‘symptomatic’?

Symptomatic

Dialysis

Horseshoe tear

Operculated hole

Atrophic hole

Lattice
With respect to retinal breaks, what does it mean to say a pt is ‘symptomatic’?
It means the patient is c/o photopsias and/or floaters.
For each retinal break, state whether it should be treated *prophylactically*.

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operculated hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atrophic hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lattice</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operculated hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atrophic hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lattice</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**For each retinal break, state whether it should be treated prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The Retina book states there is ‘no consensus’ regarding whether asymptomatic dialyses should be treated*
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th>Retinal Break</th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No, <strong>unless</strong>...</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Under what circumstances should you consider treating asymptomatic horseshoe tears?
For each retinal break, state whether it should be treated prophylactically.

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating asymptomatic horseshoe tears?**

--If they are associated with two words
<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless...)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For each retinal break, state whether it should be treated **prophylactically**.

Under what circumstances should you consider treating asymptomatic horseshoe tears?

-- If they are associated with lattice degeneration.
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th><strong>Q/A</strong></th>
<th><strong>Symptomatic</strong></th>
<th><strong>Asymptomatic</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No, <strong>unless</strong>...</td>
</tr>
<tr>
<td>Operculated hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atrophic hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lattice</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating asymptomatic horseshoe tears?**

--If they are associated with lattice degeneration

--If the eye is significantly...
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating asymptomatic horseshoe tears?**
- If they are associated with lattice degeneration
- If the eye is significantly myopic
<table>
<thead>
<tr>
<th>Q/A</th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No, <strong>unless…</strong></td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating asymptomatic horseshoe tears?**

--If they are associated with lattice degeneration
--If the eye is significantly myopic
--If the eye is **unknown** or **unknown**

**Lattice**

**Atrophic hole**

**Operculated hole**

**For each retinal break, state whether it should be treated **prophylactically****
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No unless...</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Under what circumstances should you consider treating asymptomatic horseshoe tears?*

- If they are associated with lattice degeneration
- If the eye is significantly myopic
- If the eye is aphakic or pseudophakic
- ...
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (\textit{unless...})</td>
</tr>
<tr>
<td>Operculated hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atrophic hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lattice</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating asymptomatic horseshoe tears?**

---If they are associated with lattice degeneration
---If the eye is significantly myopic
---If the eye is aphakic or pseudophakic
---If there was a hx of in the fellow eye
For each retinal break, state whether it should be treated prophylactically.

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No <strong>unless...</strong></td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Under what circumstances should you consider treating asymptomatic horseshoe tears?

- If they are associated with lattice degeneration
- If the eye is significantly myopic
- If the eye is aphakic or pseudophakic
- If there was a hx of retinal detachment in the fellow eye
For each retinal break, state whether it should be treated **prophylactically**.

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For each retinal break, state whether it should be treated prophylactically

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th>Retinal Break</th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
</tbody>
</table>

Under what circumstances should you consider treating symptomatic operculated holes?

---

---

---
For each retinal break, state whether it should be treated prophylactically.

<table>
<thead>
<tr>
<th>Retinal Break</th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No (unless…)</td>
<td>No</td>
</tr>
</tbody>
</table>

Under what circumstances should you consider treating symptomatic operculated holes?
--If there is three words at the edge of the hole
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>--<strong>unless</strong>--</td>
<td>No</td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating symptomatic operculated holes?**

--If there is ongoing vitreous traction at the edge of the hole
--
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating symptomatic operculated holes?**
--If there is ongoing vitreous traction at the edge of the hole
--If the hole is
For each retinal break, state whether it should be treated prophyllactically.

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No (unless…)</td>
<td>No</td>
</tr>
</tbody>
</table>

Under what circumstances should you consider treating symptomatic operculated holes?
-- If there is ongoing vitreous traction at the edge of the hole
-- If the hole is large
--
<table>
<thead>
<tr>
<th>Q/A</th>
<th>For each retinal break, state whether it should be treated <strong>prophylactically</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Symptomatic</strong></td>
</tr>
<tr>
<td>Dialysis</td>
<td>Yes</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating symptomatic operculated holes?**

--If there is ongoing vitreous traction at the edge of the hole
--If the hole is large
--If **two words** is present
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating symptomatic operculated holes?**

--If there is ongoing vitreous traction at the edge of the hole
--If the hole is large
--If vitreous hemorrhage is present
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th>Retinal Break</th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td>Atrophic hole</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Lattice</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Symptomatic</td>
<td>Asymptomatic</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For each retinal break, state whether it should be treated **prophylactically**.
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td>n/a</td>
<td>?</td>
</tr>
</tbody>
</table>

(Lattice itself can’t be symptomatic—only a lesion associated with it can)
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td>n/a</td>
<td>No (unless…)</td>
</tr>
</tbody>
</table>
For each retinal break, state whether it should be treated *prophylactically*.

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
</tbody>
</table>

*Under what circumstances should you consider treating lattice?*

- **Lattice**: n/a | No (unless…)

---
For each retinal break, state whether it should be treated prophylactically

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td>Atrophic hole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lattice</td>
<td>n/a</td>
<td>No (unless…)</td>
</tr>
</tbody>
</table>

Under what circumstances should you consider treating lattice?

--If horseshoe tears are present

Q/A

165
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td>n/a</td>
<td>No (unless…)</td>
</tr>
</tbody>
</table>

*Under what circumstances should you consider treating lattice?*

--If horseshoe tears are present

---
<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No (unless…)</td>
<td>No</td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating lattice?**

--If horseshoe tears are present
--If the eye is or

**Lattice**

n/a

No, unless...
For each retinal break, state whether it should be treated *prophylactically*

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td>Atrophic</td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td>n/a</td>
<td>No <em>unless…</em></td>
</tr>
</tbody>
</table>

*Under what circumstances should you consider treating lattice?*

--If horseshoe tears are present
--If the eye is aphakic or pseudophakic
--
**Q/A**

*For each retinal break, state whether it should be treated *prophylactically*

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td><strong>Operculated hole</strong></td>
<td>No (unless…)</td>
<td>No</td>
</tr>
<tr>
<td><strong>Atrophic hole</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td>n/a</td>
<td>No (unless…)</td>
</tr>
</tbody>
</table>

**Under what circumstances should you consider treating lattice?**

--If horseshoe tears are present
--If the eye is aphakic or pseudophakic
--If there was a hx of retinal detachment in the fellow eye
For each retinal break, state whether it should be treated prophylactically

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td>Horseshoe tear</td>
<td>Yes</td>
<td>No (unless…)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No (unless…)</td>
<td>No</td>
</tr>
</tbody>
</table>

*Under what circumstances should you consider treating lattice?*

--If horseshoe tears are present
--If the eye is aphakic or pseudophakic
--If there was a hx of retinal detachment in the fellow eye

Lattice: n/a (unless…).
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis?</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear?</strong></td>
<td>Yes</td>
<td>No (unless… )</td>
</tr>
<tr>
<td><strong>Operculated hole?</strong></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Atrophic hole?</strong></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Lattice?</strong></td>
<td>n/a</td>
<td>No (unless… )</td>
</tr>
</tbody>
</table>
For each retinal break, state whether it should be treated **prophylactically**.

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dialysis</strong></td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless...)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Atrophic hole</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Lattice</strong></td>
<td>n/a</td>
<td>No (unless...)</td>
</tr>
</tbody>
</table>

In general, which carries the highest risk of RD? Horseshoe tears.
For each retinal break, state whether it should be treated **prophylactically**

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless...)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No</td>
<td>No (unless...)</td>
</tr>
<tr>
<td>Atrophic hole</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Lattice</td>
<td>n/a</td>
<td>No (unless...)</td>
</tr>
</tbody>
</table>

In general, which carries the highest risk of RD? **Horseshoe tears**

**Why?**
For each retinal break, state whether it should be treated *prophylactically*

<table>
<thead>
<tr>
<th></th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialysis</td>
<td>Yes</td>
<td>‘Consider it’</td>
</tr>
<tr>
<td><strong>Horseshoe tear</strong></td>
<td>Yes</td>
<td>No (unless...)</td>
</tr>
<tr>
<td>Operculated hole</td>
<td>No</td>
<td>No (unless...)</td>
</tr>
<tr>
<td>Atrophic hole</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Lattice</td>
<td>n/a</td>
<td>No (unless...)</td>
</tr>
</tbody>
</table>

*In general, which carries the highest risk of RD?*  
Horseshoe tears

*Why?*  
Because of *ongoing vitreous traction*
of eyes harbor a retinal break, but only 1 in big number get an RD
● 6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD

Goal of RD prophylaxis: Creation of a prophylaxis goal (2 words) around the break
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD

Goal of RD prophylaxis: Creation of a chorioretinal scar around the break
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD.

Goal of RD prophylaxis: **Creation of a chorioretinal scar** around the break.

*How does one go about creating the chorioretinal scar?*
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD.

Goal of RD prophylaxis: **Creation of a chorioretinal scar** around the break.

How does one go about creating the chorioretinal scar? By inducing an inflammatory response in the chorioretinal tissue immediately surrounding the break.
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD

Goal of RD prophylaxis: **Creation of a chorioretinal scar** around the break

*How does one go about creating the chorioretinal scar?*
By inducing an inflammatory response in the chorioretinal tissue immediately surrounding the break

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

---

---
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD

Goal of RD prophylaxis: **Creation of a chorioretinal scar** around the break

**How does one go about creating the chorioretinal scar?**
By inducing an inflammatory response in the chorioretinal tissue immediately surrounding the break

**What are the two main surgical approaches for inducing the inflammatory response?**
--Laser
--Transscleral cryotherapy
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD

Goal of RD prophylaxis: Creation of a chorioretinal scar around the break

If a flap or horseshoe tear is being prophylaxed, be sure to treat a larger area, especially anterior to the lesion. Continuing traction can pull through a chorioretinal scar.
- 6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD
- Goal of RD prophylaxis: Creation of a chorioretinal scar around the break
- If a flap or horseshoe tear is being prophylaxed, be sure to treat a larger area, especially anterior to the lesion (continuing traction can pull through a chorioretinal scar)
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD

Goal of RD prophylaxis: Creation of a chorioretinal scar around the break

If a flap or horseshoe tear is being prophylaxed, be sure to treat a larger area, especially anterior to the lesion (continuing traction can pull through a chorioretinal scar)

How far anterior should treatment extend?
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD

Goal of RD prophylaxis: Creation of a chorioretinal scar around the break

If a flap or horseshoe tear is being prophylaxed, be sure to treat a larger area, especially anterior to the lesion (continuing traction can pull through a chorioretinal scar)

How far anterior should treatment extend?
As a general rule, all the way to the ora serrata
6% of eyes harbor a retinal break, but only 1 in 12,000 get an RD

Goal of RD prophylaxis: Creation of a chorioretinal scar around the break

If a flap or horseshoe tear is being prophylaxed, be sure to treat a larger area, especially anterior to the lesion (continuing traction can pull through a chorioretinal scar)

How far anterior should treatment extend?
As a general rule, all the way to the ora serrata