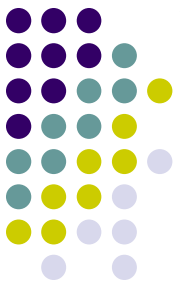


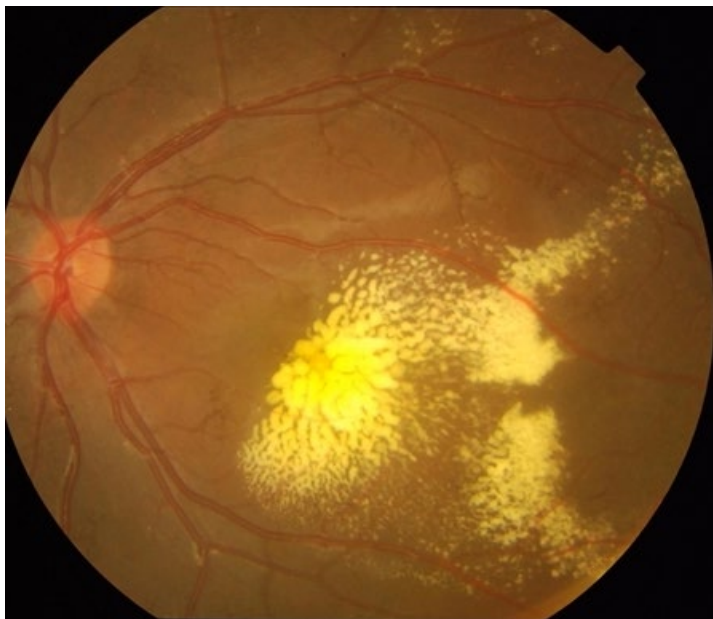
Coats disease

Classic retinal finding?

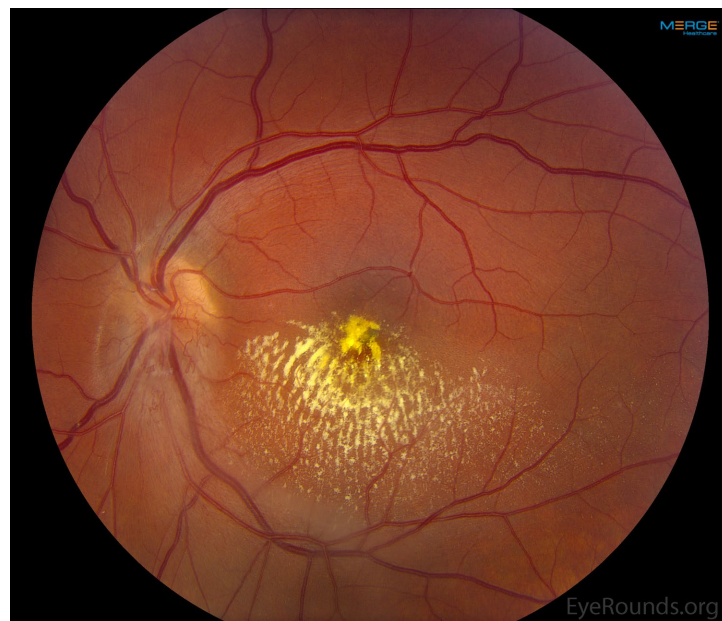


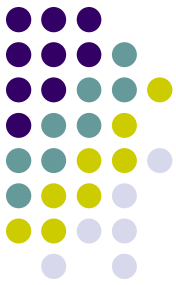
Coats disease

White-yellow subretinal exudates



Coats dz

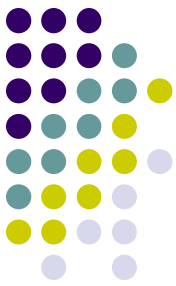




Coats disease

White-yellow subretinal exudates

Two findings are typical of histologic examination of the subretinal exudate—what are they?



Coats disease

White-yellow subretinal exudates

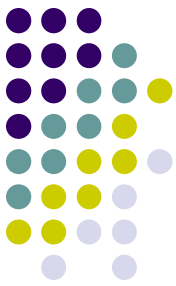
Two findings are typical of histologic examination of the subretinal exudate—what are they?

adjective

histocytes and

noun

crystals

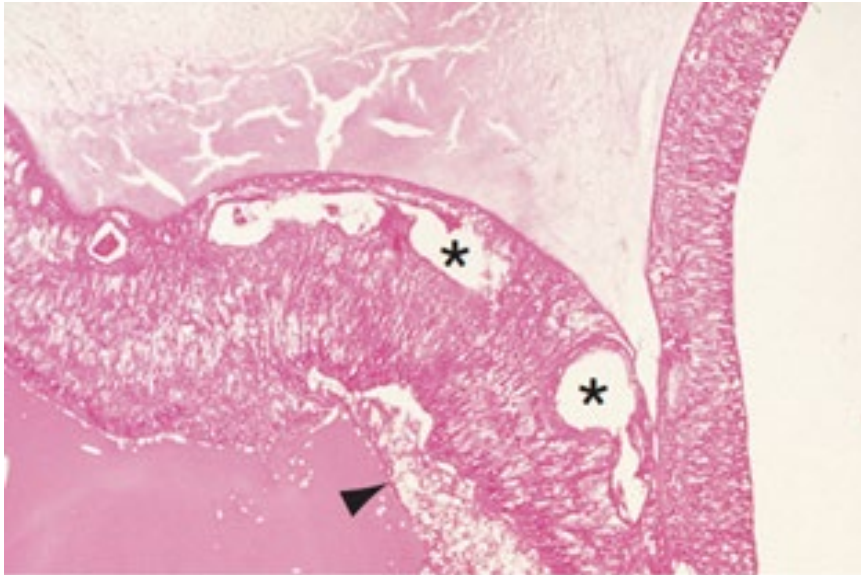
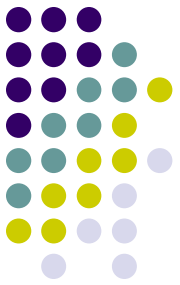


Coats disease

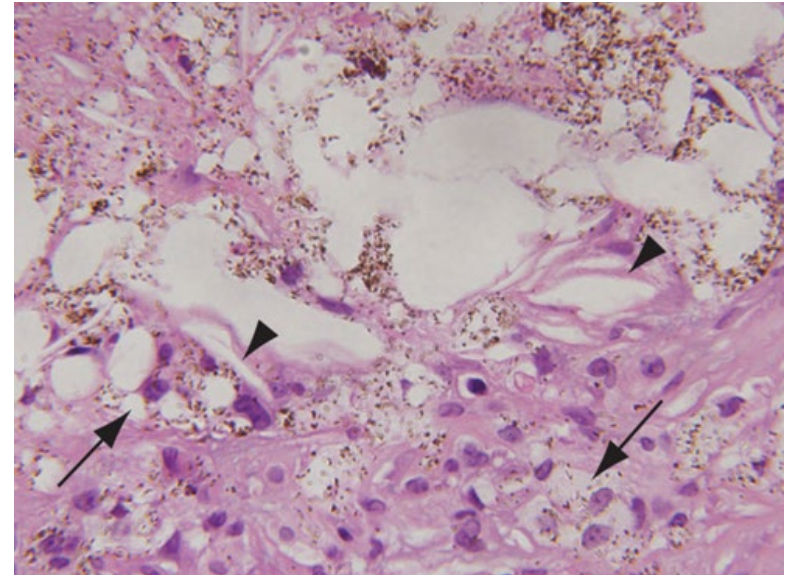
White-yellow subretinal exudates

Two findings are typical of histologic examination of the subretinal exudate—what are they?

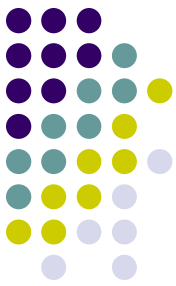
Foamy histocytes and cholesterol crystals



Telangiectatic retinal vessels (*asterisks*) and "foamy" histiocytes (*arrowhead*) typical of Coats disease



High-magnification of subretinal exudate showing lipid-laden and pigment-laden histiocytes (*arrows*) and cholesterol clefts (*arrowheads*).



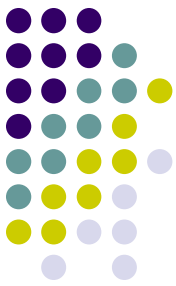
Coats disease

White-yellow subretinal exudates

Two findings are typical of histologic examination of the subretinal exudate—what are they?

Foamy histocytes and cholesterol crystals

‘Foamy histocytes and cholesterol crystals’? Bruh, I’ve read both the Retina and Peds books on Coats, and neither says jack about this. What’s up with the extraneous detail?



Coats disease

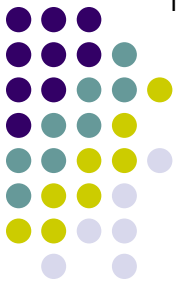
White-yellow subretinal exudates

Two findings are typical of histologic examination of the subretinal exudate—what are they?

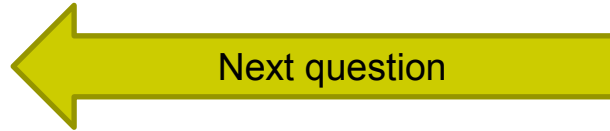
Foamy histocytes and cholesterol crystals

‘Foamy histocytes and cholesterol crystals’? Bruh, I’ve read both the Retina and Peds books on Coats, and neither says jack about this. What’s up with the extraneous detail?

It’s straight outta Path, G—don’t forget about Path

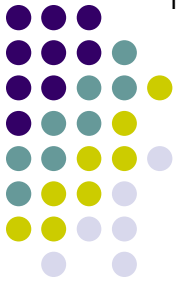


Gender predilection?



**Coats
disease**

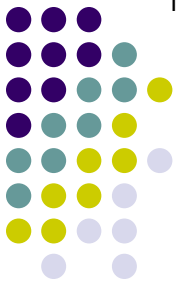
White-yellow subretinal exudates



Gender predilection? **Male**

**Coats
disease**

White-yellow subretinal exudates



Typical age at presentation?

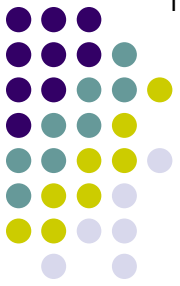
Gender predilection? **Male**

**Coats
disease**

White-yellow subretinal exudates

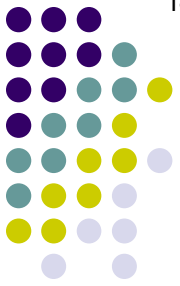
Typical age at presentation? **6-8 years**

Gender predilection? **Male**



Coats disease

White-yellow subretinal exudates



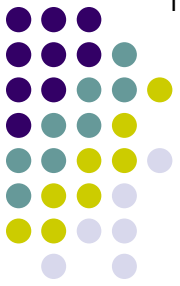
Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)?

Coats disease

White-yellow subretinal exudates



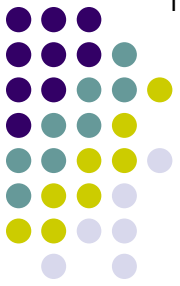
Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Coats disease

White-yellow subretinal exudates



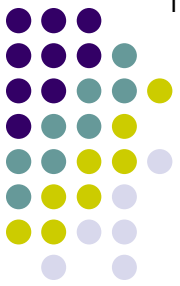
Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Coats is a **disease** of young boys. It presents with unilateral, subretinal, white-yellow exudates.

No question—proceed when ready



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

What proportion of cases are male?

Laterality (ie, bi- vs uni-)? **Unilateral**

**Coats
disease**

White-yellow subretinal exudates



Typical age at presentation? **6-8 years**

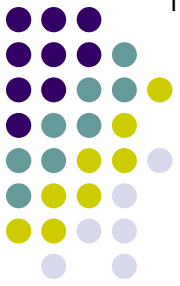
Gender predilection? **Male**

What proportion of cases are male?
About 85%

Laterality (ie, bi- vs uni-)? **Unilateral**

**Coats
disease**

White-yellow subretinal exudates



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

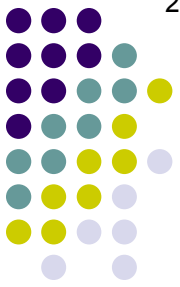
Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations?

Next question

**Coats
disease**

White-yellow subretinal exudates



Typical age at presentation? **6-8 years**

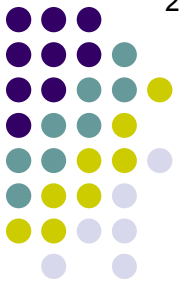
Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Coats disease

White-yellow subretinal exudates



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

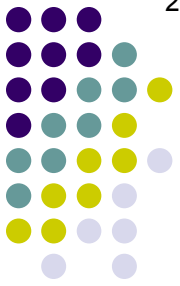
Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern?

Coats disease

White-yellow subretinal exudates



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

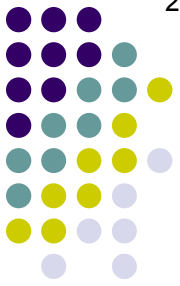
Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Coats disease

White-yellow subretinal exudates



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

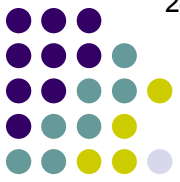
Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Coats disease is sporadic, with no known systemic associations.

No question—proceed when ready



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Characterized by the presence of abnormalities of the

two words

Laterality (ie, bi- vs uni-)? **Unilateral**

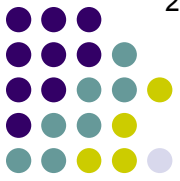
Systemic associations? **None**

Inheritance pattern? **None**

Coats disease

White-yellow subretinal exudates





Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Characterized by the presence of abnormalities of the **retinal vasculature**

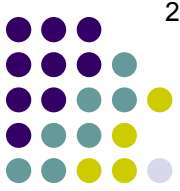
Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Coats disease

White-yellow subretinal exudates



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Characterized by the presence of abnormalities of the **retinal vasculature**:

--?
--?
--?
--?

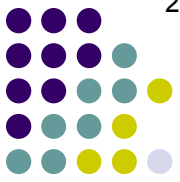
What retinal vasculature abnormalities are commonly present?



The vascular abnormalities lead to...

**Coats
disease**

White-yellow subretinal exudates



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Characterized by the presence of abnormalities of the **retinal vasculature**:

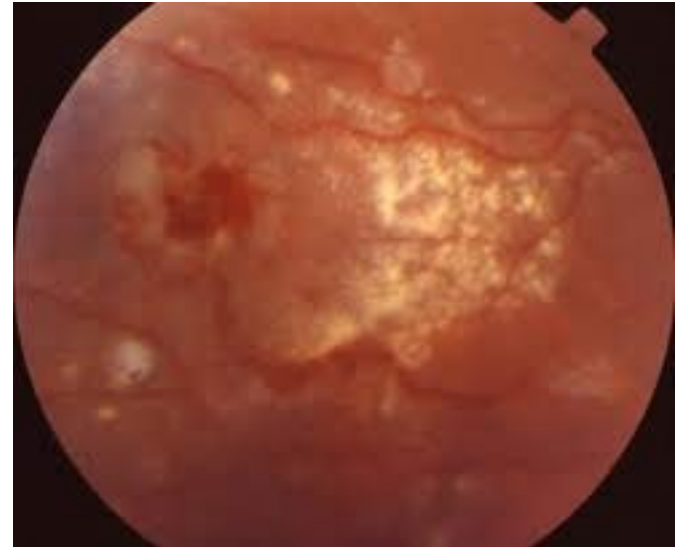
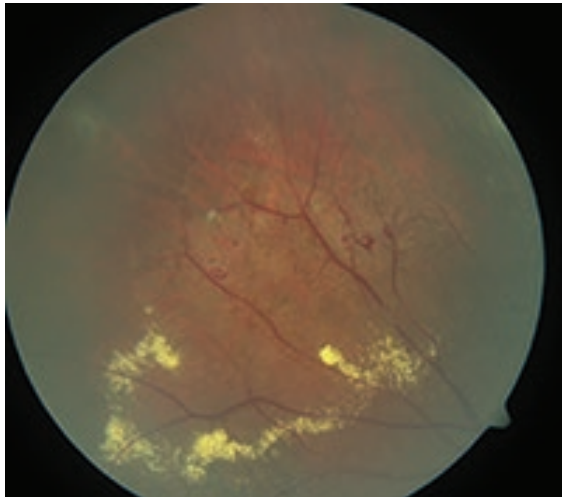
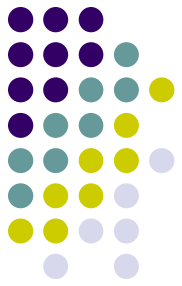
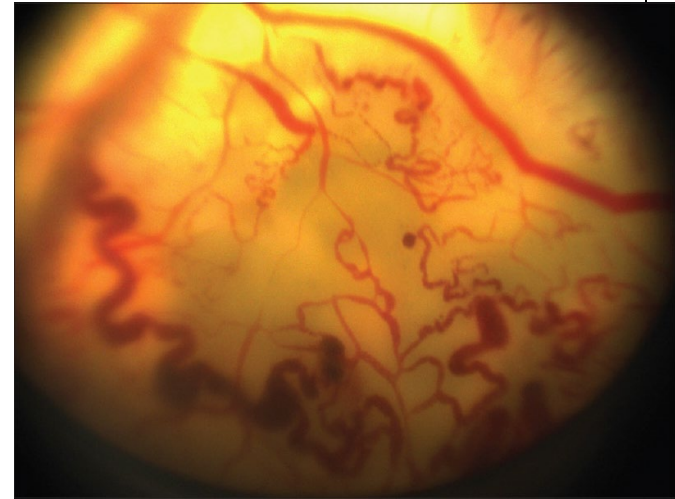
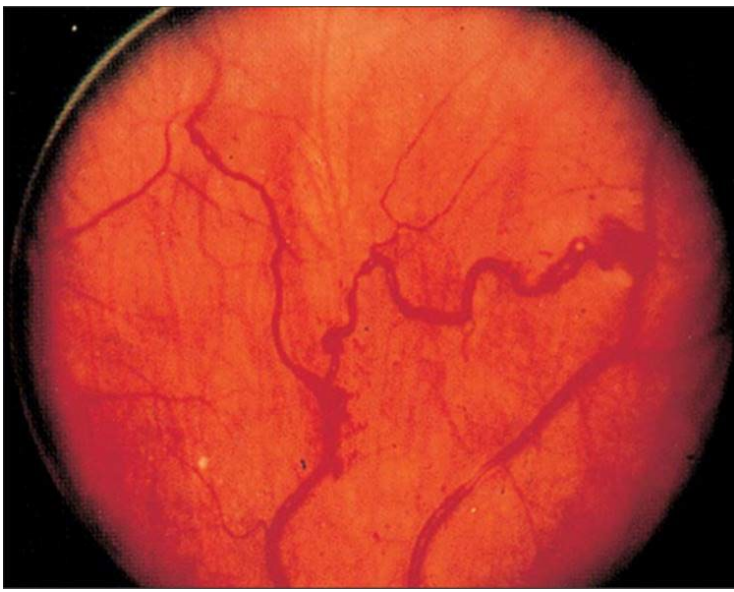
- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

What retinal vasculature abnormalities are commonly present?

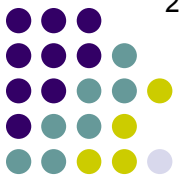
The vascular abnormalities lead to...

**Coats
disease**

White-yellow subretinal exudates



Coats: Telangiectasias, venous dilation, microaneurysms



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

**The retinal
vascular
abnormalities in Coats
disease...**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

The vascular abnormalities lead to...

White-yellow subretinal exudates

No question—proceed when ready



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

The vascular abnormalities lead to...



**The retinal
vascular
abnormalities in Coats
disease...are responsible
for the classic
subretinal exudates**

No question—proceed when ready



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Characterized by the presence of abnormalities of the retinal vasculature:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

There is a variant of Coats in which the retinal vasculature abnormalities are limited to the temporal macula. What is this condition called?

lead to...

xudates



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Characterized by the presence of abnormalities of the retinal vasculature:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

Inheritance **There is a variant of Coats in which the retinal vasculature abnormalities are limited to the temporal macula. What is this condition called?**
Macular telangiectasia Type I (MacTel I)

lead to...

xudates



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Characterized by the presence of abnormalities of the retinal vasculature:

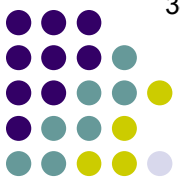
- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

Inheritance There is a variant of Coats in which the retinal vasculature abnormalities are inherited. This is Macular telangiectasia type 1 (MacTel1).

For more on MacTel, see slide-set R53

lead to...

xudates



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

Coats disease

The vascular abnormalities lead to...

White-yellow subretinal exudates

Next Q

If extensive, the exudates lead to...

two words



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

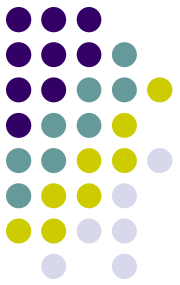
Coats disease

The vascular abnormalities lead to...

White-yellow subretinal exudates

If extensive, the exudates lead to...

Retinal detachment



Coats: RD



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

Coats disease

The vascular abnormalities lead to...

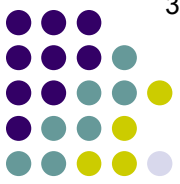
White-yellow subretinal exudates

If extensive, the exudates lead to...

Retinal detachment

If massive, the RD can result in...

two words



Typical age at presentation



Inheritance pattern? **None**

Coats disease

The vascular

White-yellow subretinal exudates

If extensive, the exudates lead to...

Retinal detachment

If massive, the RD can result in...

Leukocoria or xanthocoria





Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

Coats disease

The vascular abnormalities lead to...

White-yellow subretinal exudates

If extensive, the exudates lead to...

Retinal detachment

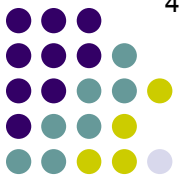
If massive, the RD can result in...

Leukocoria or xanthocoria

Leukocoria/xanthocoria place

Coats on the DDx for...





Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

Coats disease

The vascular abnormalities lead to...

White-yellow subretinal exudates

If extensive, the exudates lead to...

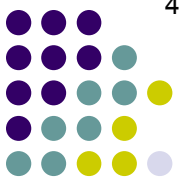
Retinal detachment

If massive, the RD can result in...

Leukocoria or xanthocoria

Retinoblastoma

*Leukocoria/xanthocoria place
Coats on the DDx for...*



Typical age at presentation? 6-8 years

Gender predilection? Male

Laterality (ie, bi- vs uni-)? Unilateral

Systemic associations? None
Inheritance pattern? None
 When it manifests with
 leukocoria, **Coats disease**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

The vascular abnormalities lead to...

White-yellow subretinal exudates
if extensive, may lead to...
 must be differentiated from retinoblastoma

Retinal detachment

If massive, the RD can result in...

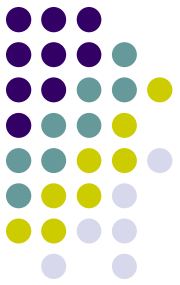
Leukocoria or xanthocoria

Retinoblastoma

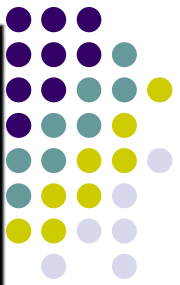
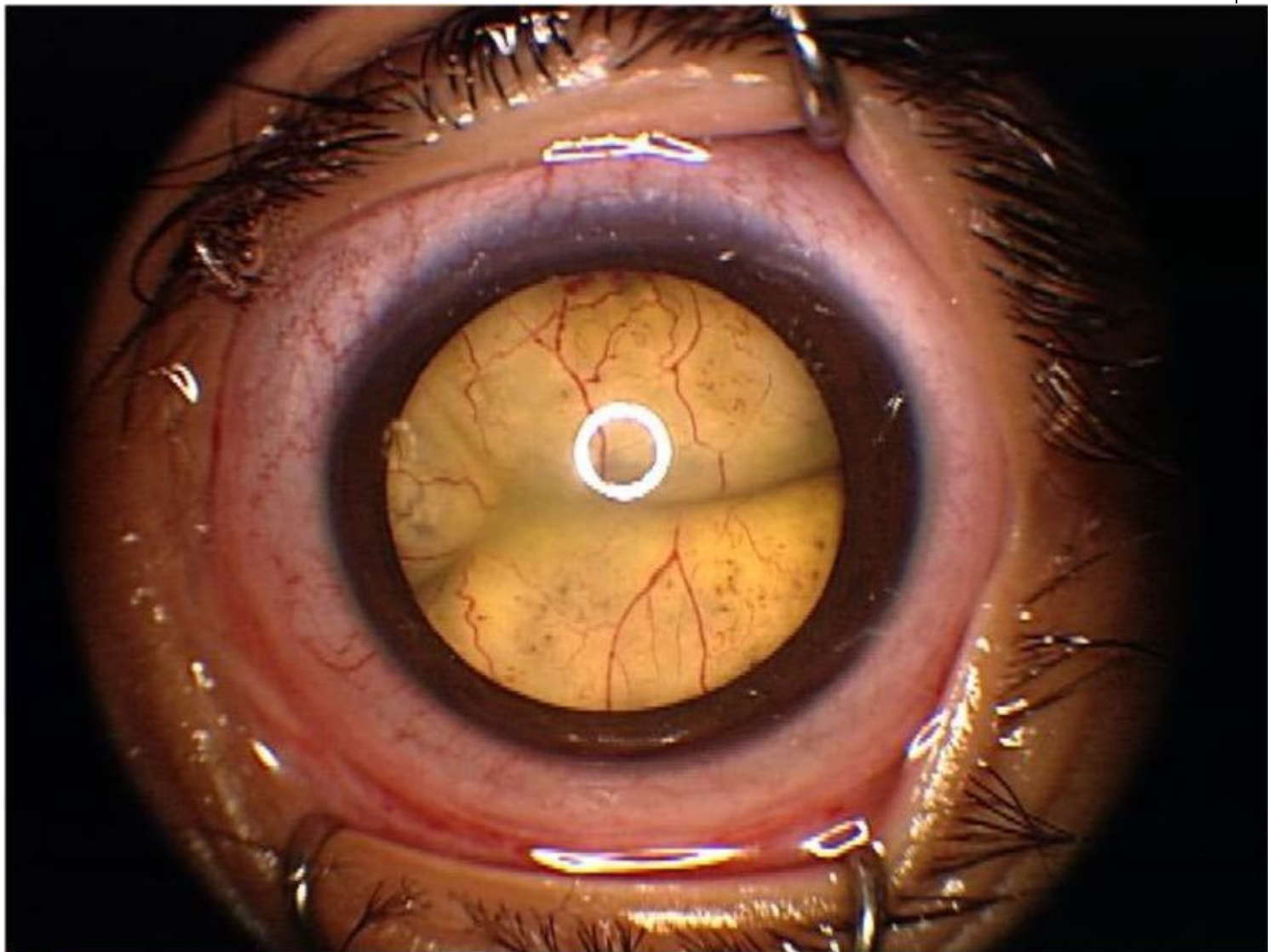
Leukocoria/xanthocoria place

Coats on the DDx for...

No question—proceed when ready

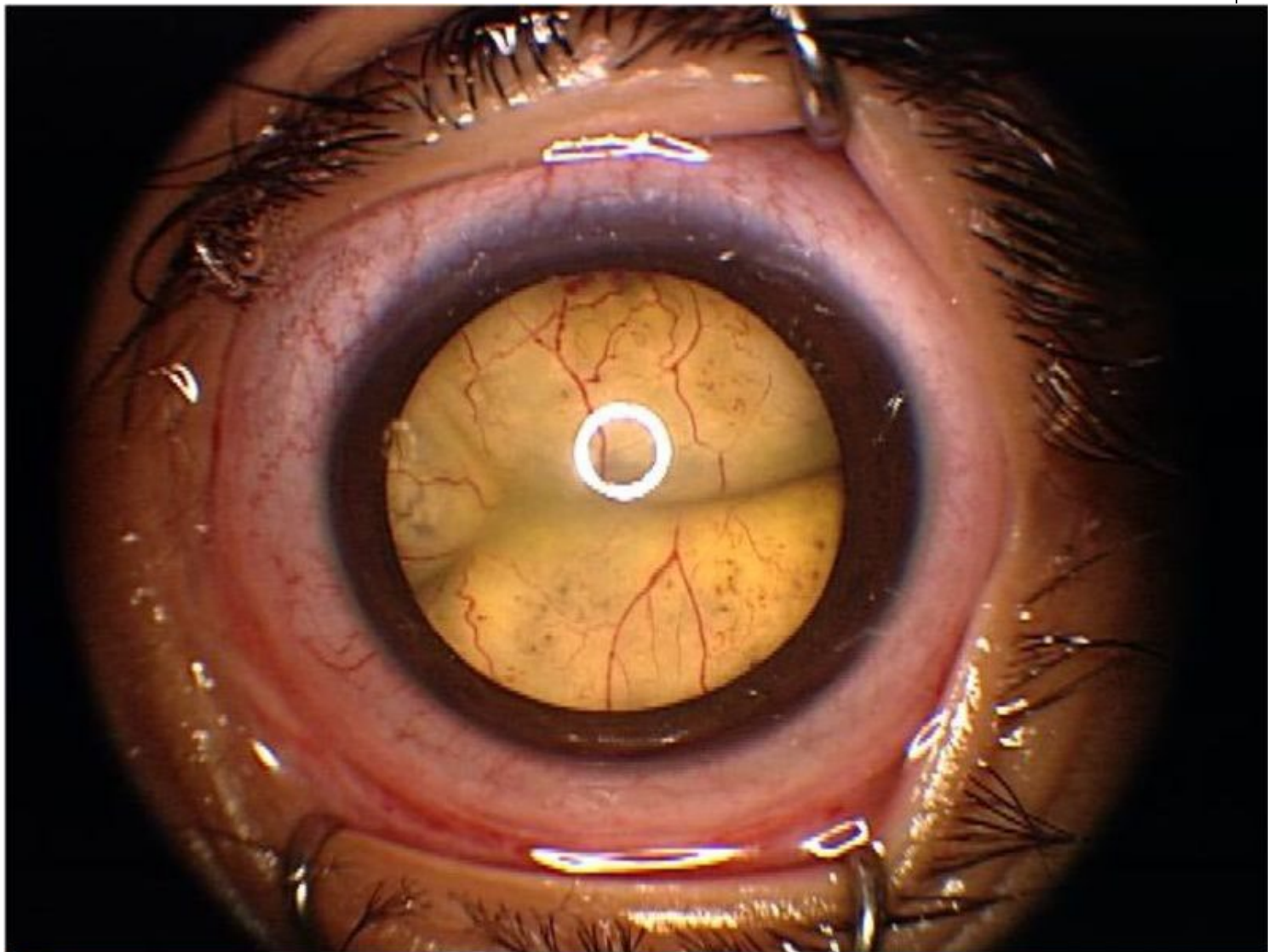


One child has Coats, the other Rb. Which is which?



Medscape

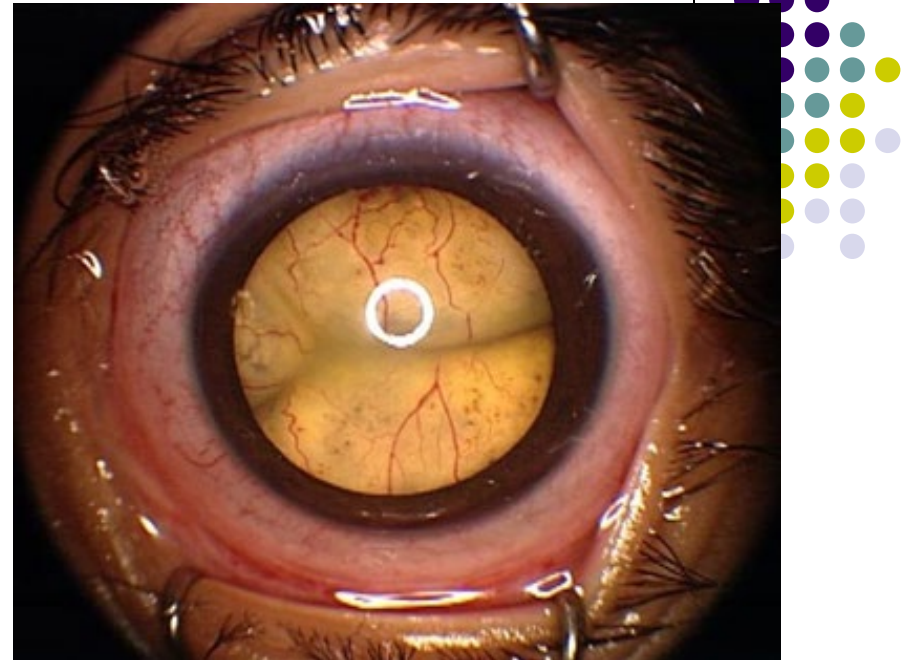
Is it Coats, or Rb?



Medscape

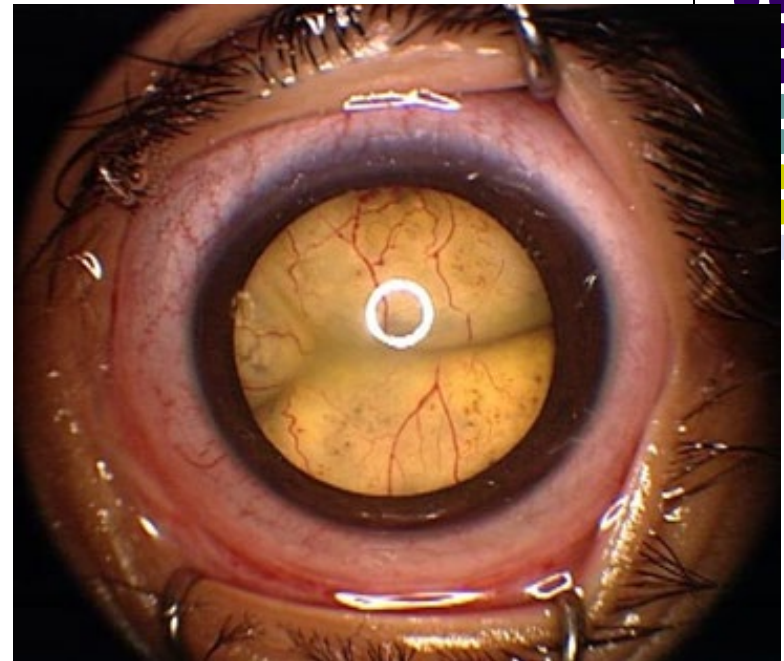
To figure it out, look at the vasculature

In Coats, the retinal vessels are dilated, with microaneurysms and telangiectasias. (Further, the appearance often has a yellow hue.)

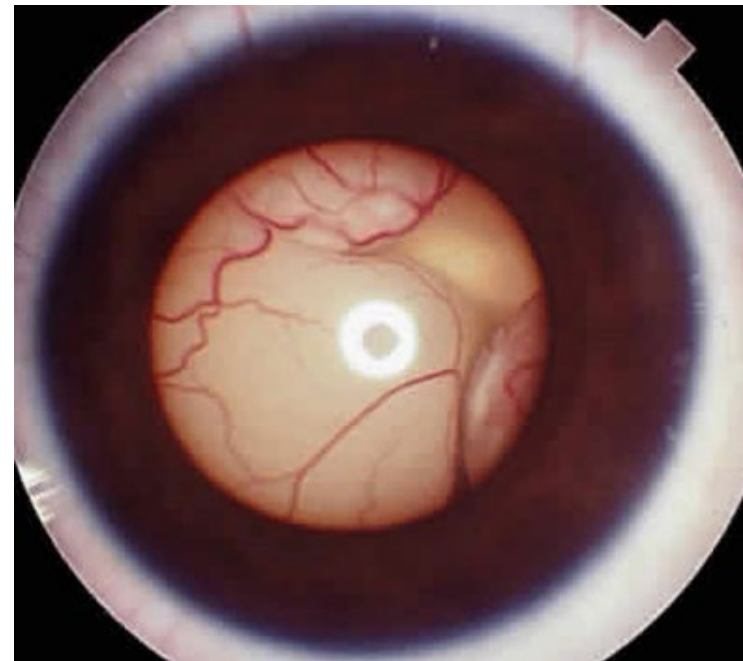


No question—proceed when ready

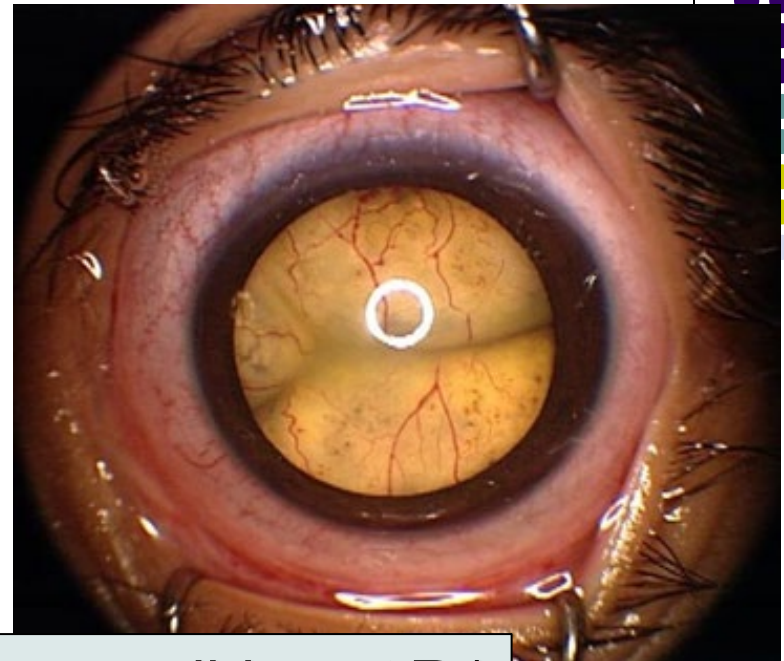
In Coats, the retinal vessels are dilated, with microaneurysms and telangiectasias. (Further, the appearance often has a yellow hue.)



Contrast with Rb, in which the retinal vessels are *normal* in appearance. (And the hue tends to be white.)

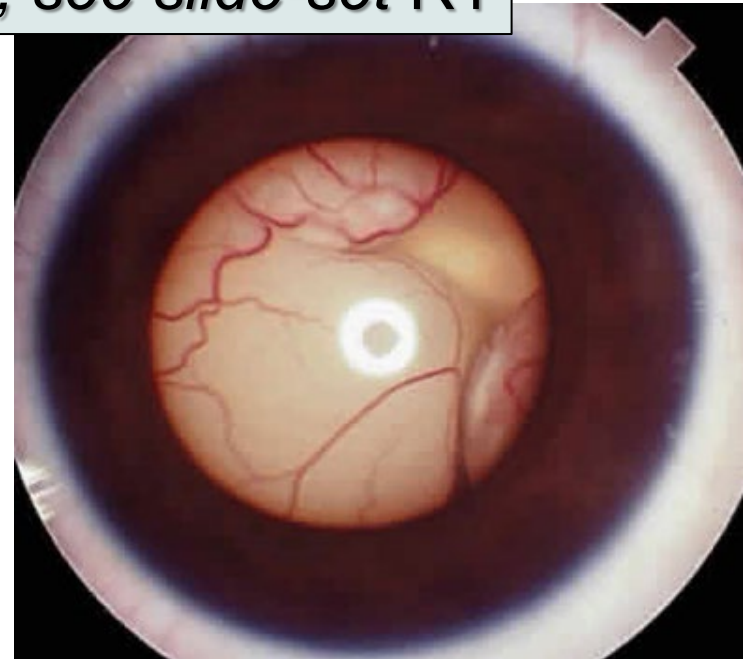


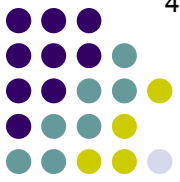
In Coats, the retinal vessels are dilated, with microaneurysms and telangiectasias. (Further, the appearance often has a yellow hue.)



For more on Coats vs Rb, see slide-set R1

Contrast with Rb, in which the retinal vessels are *normal* in appearance. (And the hue tends to be white.)





Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Management?

Coats disease

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

The vascular abnormalities lead to...

White-yellow subretinal exudates

If extensive, the exudates lead to...

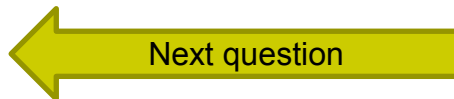
Retinal detachment

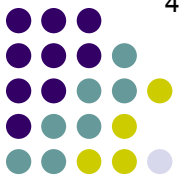
If massive, the RD can result in...

Leukocoria or xanthocoria

*Leukocoria/xanthocoria place
Coats on the DDx for...*

Retinoblastoma





Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Management? Obliterate the vascular anomalies with or

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

Coats disease

The vascular abnormalities lead to...

White-yellow subretinal exudates

If extensive, the exudates lead to...

Retinal detachment

If massive, the RD can result in...

Leukocoria or xanthocoria

Retinoblastoma

Leukocoria/xanthocoria place
Coats on the DDx for...



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Management? Obliterate the vascular anomalies with **cryo** or **photocoagulation**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

Coats disease

The vascular abnormalities lead to...

White-yellow subretinal exudates

If extensive, the exudates lead to...

Retinal detachment

If massive, the RD can result in...

Leukocoria or xanthocoria

Retinoblastoma

*Leukocoria/xanthocoria place
Coats on the DDx for...*



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Management? Obliterate the vascular anomalies with **cryo** or **photocoagulation**

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

The vascular abnormalities lead to...



White-yellow subretinal exudates



can be halted by
treating the abnormal
vessels



If massive, the RD can result in...

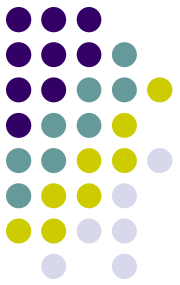
**Leukocoria or
xanthocoria**

Leukocoria/xanthocoria place

Coats on the DDx for...

Retinoblastoma

No question—proceed when ready



Coats s/p laser



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Coats disease

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

The vascular abnormalities lead to...

White-yellow subretinal exudates

If extensive, the exudates lead to...

Retinal detachment

Extensive, the RD can result in...

**Blindness or
depression**

Management? Obliterate the vascular anomalies with intravitreal anti-VEGF therapy?

What about intravitreal anti-VEGF injections—are they appropriate?



Typical age at presentation? **6-8 years**

Gender predilection? **Male**

Laterality (ie, bi- vs uni-)? **Unilateral**

Systemic associations? **None**

Inheritance pattern? **None**

Coats disease

Characterized by the presence of abnormalities of the **retinal vasculature**:

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

The vascular abnormalities lead to...

White-yellow subretinal exudates

If extensive, the exudates lead to...

Retinal detachment

If extensive, the RD can result in...

Strabismic amblyopia or myopia

Management? **Obliterate the vascular anomalies with intravitreal anti-VEGF therapy?**

What about intravitreal anti-VEGF injections—are they appropriate?
The *BCSC* is unclear on this score. The *Retina* book says it “may be a useful adjunctive treatment,” but the *Peds* book pointedly does **not** endorse it, cautioning it was “associated with a higher incidence” of complications in one study. Caveat emptor.

Coats Disease: TLDR



No question—proceed when ready

Coats Disease: TLDR



- Coats is a disease of demographic (two words). It presents with unilateral , subretinal , two-words exudates.

Coats Disease: TLDR



- Coats is a disease of **young boys**. It presents with unilateral , subretinal , **white-yellow** exudates.

Coats Disease: TLDR



- Coats is a disease of **young boys**. It presents with unilateral , subretinal , **white-yellow** exudates.
- It is **inheritance** , with **yes/no** systemic associations

Coats Disease: TLDR



- Coats is a disease of **young boys**. It presents with unilateral, subretinal, **white-yellow** exudates.
- It is **sporadic**, with **no** systemic associations

Coats Disease: TLDR



- Coats is a disease of **young boys**. It presents with unilateral , subretinal , **white-yellow** exudates.
- It is **sporadic** , with **no** systemic associations
- The

three words

 in Coats disease are responsible for the classic subretinal exudates

Coats Disease: TLDR



- Coats is a disease of **young boys**. It presents with unilateral, subretinal, **white-yellow** exudates.
- It is **sporadic**, with **no** systemic associations
- The **retinal vascular abnormalities** in Coats disease are responsible for the classic subretinal exudates

Coats Disease: TLDR



- Coats is a disease of **young boys**. It presents with unilateral, subretinal, **white-yellow** exudates.
- It is **sporadic**, with **no** systemic associations
- The **retinal vascular abnormalities** in Coats disease are responsible for the classic subretinal exudates
- When it manifests with **finding**, Coats must be differentiated from **disease**

Coats Disease: TLDR



- Coats is a disease of **young boys**. It presents with unilateral, subretinal, **white-yellow** exudates.
- It is **sporadic**, with **no** systemic associations
- The **retinal vascular abnormalities** in Coats disease are responsible for the classic subretinal exudates
- When it manifests with **leukocoria**, Coats must be differentiated from **retinoblastoma**

Coats Disease: TLDR



- Coats is a disease of **young boys**. It presents with unilateral, subretinal, **white-yellow** exudates.
- It is **sporadic**, with **no** systemic associations
- The **retinal vascular abnormalities** in Coats disease are responsible for the classic subretinal exudates
- When it manifests with **leukocoria**, Coats must be differentiated from **retinoblastoma**
- Progression of the exudates can be halted by treating the

two words

Coats Disease: TLDR



- Coats is a disease of **young boys**. It presents with unilateral, subretinal, **white-yellow** exudates.
- It is **sporadic**, with **no** systemic associations
- The **retinal vascular abnormalities** in Coats disease are responsible for the classic subretinal exudates
- When it manifests with **leukocoria**, Coats must be differentiated from **retinoblastoma**
- Progression of the exudates can be halted by treating the **abnormal vessels**