Coats disease

Classic retinal finding?
Coats disease

White-yellow subretinal exudates
Coats dz
Gender predilection?

Coats disease

White-yellow subretinal exudates
Gender predilection? **Male**

**Coats disease**

*White-yellow* subretinal exudates
Typical age at presentation?

Gender predilection? Male
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
Coats disease is a disease of young boys. It presents with unilateral, subretinal, white-yellow exudates.
Typical age at presentation? **6-8 years**

**Gender predilection?** Male

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

**What proportion of cases are male?** About 85%

**Coats disease**

**White-yellow subretinal exudates**
White-yellow subretinal exudates

Coats disease

Typical age at presentation? 6-8 years

Gender predilection? Male

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

What proportion of cases are male? About 85%
Typical age at presentation? 6-8 years

Gender predilection? Male

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

Systemic associations? 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
Gender predilection? Male

Typical age at presentation? 6-8 years

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**

- Subretinal exudates
- White-yellow 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
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

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

**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

Characterized by the presence of abnormalities of the retinal vasculature:

What retinal vasculature abnormalities are commonly present?

The vascular abnormalities lead to…

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**

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**Coats disease**

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

- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

**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...

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

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

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
The vascular abnormalities lead to white-yellow subretinal exudates.

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?

Typical age at presentation? 6-8 years

Gender predilection? Male

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

Systemic associations? None

Inheritance pattern? None

Typical age at presentation? 6-8 years

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

Gender predilection? Male

Systemic associations? None

Inheritance pattern? None
The vascular abnormalities lead to white-yellow subretinal exudates.

Coats disease

**Inheritance pattern?** None

**Systemic associations?** None

**Gender predilection?** Male

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

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

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?

Macular telangiectasia Type I (MacTel I)
The vascular abnormalities lead to... White-yellow subretinal exudates, Coats disease.

**Inheritance pattern?** None

**Systemic associations?** None

**Gender predilection?** Male

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

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

**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? Macular telangiectasia Type I (MacTel I).

For more on MacTel, see slide-set R53.
Coats disease

- 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...

If extensive, the exudates lead to...

**White-yellow** subretinal exudates

Next Q
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
Coats: RD
White-yellow subretinal exudates

Coats disease

Characterized by the presence of abnormalities of the retinal vasculature:
--Telangiectasias
--Venous dilation
--Microaneurysms
--Capillary dilation

The vascular abnormalities lead to...

If extensive, the exudates lead to...

Retinal detachment

If massive, the RD can result in...

two words

Typical age at presentation? 6-8 years

Gender predilection? Male

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

Systemic associations? None

Inheritance pattern? None
Coats disease

Typical age at presentation? 6-8 years
Inheritance pattern? None
Systemic associations? None
Gender predilection? Male
Typical age at presentation? 6-8 years
Laterality (ie, bi- vs uni-)? Unilateral

Characterized by the presence of abnormalities of the retinal vasculature:
- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

The vascular abnormalities lead to...
If extensive, the exudates lead to...
If massive, the RD can result in...

Inheritance pattern? None

White-yellow subretinal exudates

Retinal detachment

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

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Characterized by the presence of abnormalities of the retinal vasculature:
- Telangiectasias
- Venous dilation
- Microaneurysms
- Capillary dilation

The vascular abnormalities lead to...

**Leukocoria or xanthocoria**

If extensive, the exudates lead to...

**Retinal detachment**

If massive, the RD can result in...

---

**Leukocoria/xanthocoria place**

**Coats disease 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**

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**
**Leukocoria/xanthocoria** place 

Coats on the DDx for...

- **Retinal detachment**
  - If massive, the RD can result in...
  - If extensive, the exudates lead to...

- **Retinoblastoma**
  - White-yellow subretinal exudates
  - Characterized by the presence of abnormalities of the retinal vasculature:
    - Telangiectasias
    - Venous dilation
    - Microaneurysms
    - Capillary dilation

**Inheritance pattern?** None

**Gender predilection?** Male

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

**Systemic associations?** None

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

**Inheritance pattern?** None

**Gender predilection?** Male

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

**Systemic associations?** None

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

When it manifests with leukocoria, **Coats disease** must be differentiated from retinoblastoma.

- **Retinal detachment**
  - If massive, the RD can result in...

**Retinoblastoma**

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

**Leukocoria or xanthocoria**

No question—proceed when ready
One child has Coats, the other Rb. Which is which?
Is it Coats, or Rb?
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.)
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.)

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

*For more on Coats vs Rb, see slide-set R1*
Typical age at presentation? 6-8 years

Gender predilection? Male

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

Systemic associations? None

Inheritance pattern? None

Management? Next question

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

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

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** cryo **or** photocoagulation

Characterized by the presence of abnormalities of the **retinal vasculature**: 
--Telangiectasias
--Venous dilation
--Microaneurysms
--Capillary dilation

The vascular abnormalities lead to…

If extensive, the exudates lead to…

**Retinal detachment**

If massive, the RD can result in…

**Leukocoria or xanthocoria**

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 cryo or photocoagulation

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

Retinoblastoma

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

Progression of the exudates in Coats disease can be halted by treating the abnormal vessels

Management? Obliterate the vascular abnormalities with cryo or photocoagulation

Retinoblastoma

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

Leukocoria or xanthocoria

The vascular abnormalities lead to...

If massive, the RD can result in...

Characterized by the presence of abnormalities of the retinal vasculature:
--Telangiectasias
--Venous dilation
--Microaneurysms
--Capillary dilation

No question—proceed when ready
Coats s/p laser
Coats disease

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...

White-yellow subretinal exudates

If extensive, the exudates lead to...

Retinal detachment

If massive, the RD can result in...

Leukocoria or xanthocoria

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 (i.e., 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...

- If extensive, the exudates lead to...
  - Retinal detachment
  - Leukocoria or xanthocoria

*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 young boys. It presents with unilateral, subretinal, 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 inherited, 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 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.
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.
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...
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.