Coats disease

Classic retinal finding?
Coats disease

White-yellow subretinal exudates
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
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

No question—proceed when ready
Typical age at presentation? 6-8 years

Gender predilection? Male

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

What proportion of cases are male? About 85%
White-yellow subretinal exudates

Coats disease

Typical age at presentation? 6-8 years

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

Gender predilection? Male

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
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

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
Gender predilection? Male

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

Systemic associations? None

Inheritance pattern? None

Typical age at presentation? 6-8 years

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
**Gender predilection?** Male

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

**Systemic associations?** None

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

**Inheritance pattern?** None

Coats disease

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...

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

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
The vascular abnormalities lead to white-yellow subretinal exudates.

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

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

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

Gender predilection? **Male**

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

Systemic associations? **None**

Inheritance pattern? **None**

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
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...

two words
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

Next Q
Coats: RD
**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

If massive, the RD can result in:

Leukocoria or xanthocoria
Coats disease

Inheritance pattern? None

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**

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

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

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...

Retinoblastoma

Leukocoria/xanthocoria place

Coats on the DDx for...

Leukocoria or xanthocoria
Leukocoria or xanthocoria

Coats disease must be differentiated from retinoblastoma

If massive, the RD can result in...

Retinal detachment

White-yellow subretinal exudates

The vascular abnormalities lead to...

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

When it manifests with leukocoria, Coats disease

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

When it manifests with leukocoria, Coats disease

Retinoblastoma

Leukocoria/xanthocoria place

Coats on the DDx for...

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

Inheritance pattern? None

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

Systemic associations? None

Inheritance pattern? None

Gender predilection? Male

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

Systemic associations? None

Inheritance pattern? None

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

When it manifests with leukocoria, Coats disease

Retinoblastoma

Leukocoria/xanthocoria place

Coats on the DDx for...

Leukocoria or xanthocoria
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.)
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

Coats disease

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

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
Retinoblastoma

Leukocoria/xanthocoria place

Coats on the DDx for...

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

Coats disease

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

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

---

**Retinoblastoma**

Leukocoria/xanthocoria place

Coats on the DDx for...

---

**Retinoblastoma**

Leukocoria/xanthocoria place

Coats on the DDx for...

---

**Coats disease**

Characterized by the presence of abnormalities of the retinal vasculature:

-- Telangiectasias
-- Venous dilation
-- Microaneurysms
-- Capillary dilation

**White-yellow** subretinal exudates

If extensive, the exudates lead to...

**Retinal detachment**

If massive, the RD can result in...

---
Leukocoria or xanthocoria place 
Leukocoria or xanthocoria place on the DDx for...

Progression of the exudates in Coats disease can be halted by treating the abnormal vessels... 
White-yellow subretinal exudates lead to detachment

The vascular abnormalities lead to...

Coats disease is characterized by the presence of abnormalities of the retinal vasculature:

--Telangiectasias
--Venous dilation
--Microaneurysms
--Capillary dilation

The vascular abnormalities lead to...

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

Management? Obliterate the vascular anomalies with cryo or photocoagulation

Retinoblastoma

Leukocoria/xanthocoria place Coats on the DDx for...
Coats s/p laser
Leukocoria or xanthocoria place

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...

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

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

Intracranial or lacrimal
Leukocoria or xanthocoria

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

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

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, and cautions it was “associated with a higher incidence” of complications in one study. Caveat emptor.
Coats Disease TL;DR

- Coats is a disease of young boys. It presents with unilateral, subretinal, exudates.
Coats Disease TL;DR

- Coats is a disease of young boys. It presents with unilateral, subretinal, white-yellow exudates.
Coats Disease TL;DR

- 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 TL;DR

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

- 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 TL;DR

- Coats is a disease of young boys. It presents with unilateral, subretinal, white-yellow exudates.
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Coats Disease TL;DR

- 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.
Coats Disease TL;DR

- Coats is a disease of young boys. It presents with unilateral, subretinal, white-yellow exudates.
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Coats Disease TL;DR

- 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 TL;DR

- 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.