Central Serous Chorioretinopathy/Choroidopathy (CSC)

*In general terms, what is the pathophysiology of CSC?*
Central Serous Chorioretinopathy/Choroidopathy (CSC)

**In general terms, what is the pathophysiology of CSC?**

- Choroidal hyperpermeability
  - serous retinal detachment
  - visual dysfunction

*(not yet)*

**Answer this one first--what directly causes visual dysfunction in CSC?**
In general terms, what is the pathophysiology of CSC?

→ serous retinal detachment → visual dysfunction

Answer this one first--what directly causes visual dysfunction in CSC?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

CSC: Serous RD
In general terms, what is the pathophysiology of CSC?

→ serous retinal detachment → visual dysfunction

Now this one--what causes the serous RD?
In general terms, what is the pathophysiology of CSC?
Choroidal hyperpermeability $\rightarrow$ serous retinal detachment $\rightarrow$ visual dysfunction
+ leakage at level of RPE

Now this one--what causes the serous RD?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Specific visual complaints in CSC:

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

In general terms, what is the pathophysiology of CSC?
Choroidal hyperpermeability $\rightarrow$ serous retinal detachment $\rightarrow$ visual dysfunction
+ leakage at level of RPE
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

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+ leakage at level of RPE
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Decreased VA
- Metamorphopsia
- Micropsia
- Scotomata
- Altered color vision

Is the loss of Snellen acuity usually mild, or severe?

The range is 20/20 - 20/200; the typical value is 20/30 or better

A refractive shift may contribute to the decreased VA. If present, what sort of refractive shift is typical?

A hyperopic shift

Why a hyperopic shift?

Because the submacular fluid elevates the fovea, shortening the effective axial length of the eye, thus rendering it more hyperopic.

In general terms, what is the pathophysiology of CSC?

Choroidal hyperpermeability → serous retinal detachment → visual dysfunction

+ leakage at level of RPE
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Is the loss of Snellen acuity usually mild, or severe?
Mild

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A **hyperopic** shift

Why a hyperopic shift?

In general terms, what is the pathophysiology of CSC?
Choroidal hyperpermeability → serous retinal detachment + leakage at level of RPE

visual dysfunction
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
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  - Scotomata
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**Is the loss of Snellen acuity usually mild, or severe?**
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The range is 20/20 - 20/200; the typical value is 20/30 or better

**A refractive shift may contribute to the decreased VA. If present, what sort of refractive shift is typical?**
A hyperopic shift

**Why a hyperopic shift?**
Because the submacular fluid elevates the fovea, shortening the effective axial length of the eye and rendering it more hyperopic

In general terms, what is the pathophysiology of CSC?
Choroidal hyperpermeability → serous retinal detachment → visual dysfunction
  + leakage at level of RPE
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - **Metamorphopsia**
  - **Micropsia**
  - Scotomata
  - Altered color

*In general terms, what is the pathophysiology of CSC?*

Choroidal hyperpermeability → serous retinal detachment → visual dysfunction + leakage at level of RPE
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - **Metamorphopsia**
  - **Micropsia**
  - Scotomata
  - Altered color vision

What do the terms metamorphopsia and micropsia mean? *Metamorphopsia* refers to a distortion in the shape of an object’s visual image.

In general terms, what is the pathophysiology of CSC? Choroidal hyperpermeability → serous retinal detachment → visual dysfunction + leakage at level of RPE.
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - **Metamorphopsia**
  - **Micropsia**
  - Scotomata
  - Altered color vision

**What do the terms metamorphopsia and micropsia mean?**

Metamorphopsia refers to a distortion in the shape of an object’s visual image. Micropsia occurs when an object appears to be smaller than its actual size.

In general terms, what is the pathophysiology of CSC?

Choroidal hyperpermeability → serous retinal detachment → **visual dysfunction**

+ leakage at level of RPE
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: ?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: **Male**

*What is the male:female ratio?*
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: **Male**

*What is the male:female ratio?*
*About 3:1*
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: **Male**

What is the male:female ratio?

About 3:1

3:1??!! I thought it was more like 10:1, or at least 6:1. What gives?
Specific visual complaints in CSC:
- Decreased VA
- Metamorphopsia
- Micropsia
- Scotomata
- Altered color vision

Classic CSC demographics:
- Sex: **Male**

What is the male:female ratio?**
About 3:1

3:1?!?! I thought it was more like 10:1, or at least 6:1. What gives? It's true that early studies found ratios in the 6:1 to 10:1 range. However, upon further review it is clear that the early research heavily overrepresented males. So 3:1 it is.
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Age: ?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Age: 35 – 55
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Age: 35 – 55

What diagnosis must you consider carefully before deciding an individual over 50 has CSC?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Age: 35 – 55

What diagnosis must you consider carefully before deciding an individual over 50 has CSC?
Wet ARMD
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Age: 35 – 55
  - Racial predilection: ?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Age: 35 – 55
  - Racial predilection: None
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Age: 35 – 55
  - Racial predilection: None
  - General health: ?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Age: 35 – 55
  - Racial predilection: None
  - General health: Good
Specific visual complaints in CSC:
- Decreased VA
- Metamorphopsia
- Micropsia
- Scotomata
- Altered color vision

Classic CSC demographics:
- Sex: Male
- Age: 35 – 55
- Racial predilection: None
- General health: Good
- Personality: ?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Age: 35 – 55
  - Racial predilection: None
  - General health: Good
  - Personality: ‘Type A’
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male
  - Personality: ‘Type A’
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Specific visual complaints in CSC:
  - Decreased VA
  - Metamorphopsia
  - Micropsia
  - Scotomata
  - Altered color vision

- Classic CSC demographics:
  - Sex: Male

What words are we looking for to clue us in we’re dealing with someone predisposed personality-wise to CSC?
  -- ‘Tense’
  -- ‘Driven’
  -- ‘Stressed’

- Personality: ‘**Type A**’
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An **ink blot** (aka two words)
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An **expansile dot** (aka **ink blot**)
Central Serous Chorioretinopathy/Choroidopathy (CSC)

CSC: Expansile dot
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Three leakage patterns seen on FA:

- Most common: An **expansile dot** (aka *ink blot*)
- Less common, but more classic:
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An **expansile dot** (aka *ink blot*)
  - Less common, but more classic: **Smokestack**
Central Serous Chorioretinopathy/Choroidopathy (CSC)

CSC: Smokestack pattern
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Three leakage patterns seen on FA:

- Most common: An expansile dot (aka ink blot)
- Less common, but more classic: Smokestack

What is the shape of the classic smokestack pattern?

'tree shape'; ie, a narrow, trunk-like portion below with a spread-out, canopy-like portion above

Smokestack
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Three leakage patterns seen on FA:

- Most common: An expansile dot (aka *ink blot*)
- Less common, but more classic: *Smokestack*

What is the shape of the classic smokestack pattern? Um, **a smokestack**?

(aka *ink blot*)

*Smokestack*
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Three leakage patterns seen on FA:

- Most common: An expansile dot (aka *ink blot*)
- Less common, but more classic: *Smokestack*

---

**What is the shape of the classic smokestack pattern?**
Um, a smokestack?

*Importantly, it is *not* smokestack-shaped. Rather, it is so named because the dye behaves as if it’s smoke billowing from a smokestack. And the Retina book provides a particular description of this behavior. What is it?*
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Three leakage patterns seen on FA:

- Most common: An expansile dot (aka ink blot)
- Less common, but more classic: Smokestack

What is the shape of the classic smokestack pattern? Um, a smokestack?

Importantly, it is not smokestack-shaped. Rather, it is so named because the dye behaves as if it’s smoke billowing from a smokestack. And the Retina book provides a particular description of this behavior. What is it? ‘Tree shaped;’ ie, a narrow, trunk-like portion below with a spread-out, canopy-like portion above

What can I say— I’m just the messenger…
Central Serous Chorioretinopathy/Choroidopathy (CSC)

CSC: ‘Tree shaped’ FA pattern
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Three leakage patterns seen on FA:

- Most common: An expansile dot (aka ink blot)
- Less common, but more classic: Smokestack

What is the shape of the classic smokestack pattern?
Um, a smokestack?

Important, it is not smokestack-shaped. Rather, it is so named because the dye behaves as if it’s smoke billowing from a smokestack. And the Retina book provides a particular description of this behavior. What is it?
‘Tree shaped;’ ie, a narrow, trunk-like portion below with a spread-out, canopy-like portion above

So, it’s a smokestack yielding a tree? Isn’t that a rather awkward mixing of metaphors?
Three leakage patterns seen on FA:

- Most common: An expansile dot (aka *ink blot*).
- Less common, but more classic: *Smokestack*.

Central Serous Chorioretinopathy/Choroidopathy (CSC)

What is the shape of the classic smokestack pattern?
Um, a smokestack?

Importantly, it is not smokestack-shaped. Rather, it is so named because the dye behaves as if it’s smoke billowing from a smokestack. And the Retina book provides a particular description of this behavior. What is it?
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Central Serous Chorioretinopathy/Choroidopathy (CSC)

Three leakage patterns seen on FA:
- Most common: An expansile dot (aka ink blot)
- Less common, but more classic: Smokestack

What imaging technique has largely supplanted FA in diagnosing CSC?

OCT

Does OCT have any advantages as an imaging modality for CSC?

It does indeed. In addition to being noninvasive, OCT can reveal subtle amounts of subretinal fluid (SRF) and/or sub-RPE fluid that may be too scant to be detected via FA.
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An expansive dot (aka *ink blot*)
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*What imaging technique has largely supplanted FA in diagnosing CSC?*  
OCT
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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What imaging technique has largely supplanted FA in diagnosing CSC? OCT

Does OCT have any advantages as an imaging modality for CSC?
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**Central Serous Chorioretinopathy/Choroidopathy (CSC)**

What imaging technique has largely supplanted FA in diagnosing CSC?

OCT

Does OCT have any advantages as an imaging modality for CSC?

It does indeed. In addition to being noninvasive, OCT can reveal subtle amounts of subretinal fluid (SRF) and/or sub-RPE fluid that may be too scant to be detected via FA.

What is the typical appearance of CSC on OCT?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Three leakage patterns seen on FA:
- Most common: An expansile dot (aka ink blot)
- Less common, but more classic: Smokestack

What imaging technique has largely supplanted FA in diagnosing CSC?
OCT

Does OCT have any advantages as an imaging modality for CSC?
It does indeed. In addition to being noninvasive, OCT can reveal subtle amounts of subretinal fluid (SRF) and/or sub-RPE fluid that may be too scant to be detected via FA.

What is the typical appearance of CSC on OCT?
A sharply demarcated elevation of the neurosensory retina or RPE (or both) with an optically empty space beneath
Central Serous Chorioretinopathy/Choroidopathy (CSC)
Central Serous Chorioretinopathy/Choroidopathy (CSC)

CSC: OCT
Three leakage patterns seen on FA:
- Most common: An expansile dot (aka *ink blot*)
- Less common, but more classic: Smokestack

CSC pathophysiology in a nutshell:
- Choroidal + altered RPE

*(this question is a recapitulation of the info covered at the outset of the slide-set)*
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An expansive dot (aka *ink blot*)
  - Less common, but more classic: Smokestack

- CSC pathophysiology in a nutshell:
  - Choroidal hyperpermeability + altered RPE barrier function $\rightarrow$ serous retinal detachment
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An expansile dot (aka *ink blot*)
  - Less common, but more classic: Smokestack

- CSC pathophysiology in a nutshell:
  - Choroidal hyperpermeability + altered RPE barrier function → serous retinal detachment

- Natural course of CSC:
  - 90% resorb spontaneously within 6 months
Three leakage patterns seen on FA:
- Most common: An expansile dot (aka *ink blot*)
- Less common, but more classic: Smokestack

CSC pathophysiology in a nutshell:
- Choroidal hyperpermeability + altered RPE barrier function → serous retinal detachment

Natural course of CSC:
- 90% resorb spontaneously within 6 months
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An **expansile dot** (aka *ink blot*)
  - Less common, but more classic: **Smokestack**

- CSC pathophysiology in a nutshell:
  - Choroidal **hyperpermeability** + altered RPE **barrier function** $\rightarrow$ **serous retinal detachment**

- Natural course of CSC:
  - 90% resorb spontaneously within **6 months**
  - Snellen VA usually **returns to baseline vs remains poor**
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An expansile dot (aka ink blot)
  - Less common, but more classic: Smokestack

- CSC pathophysiology in a nutshell:
  - Choroidal hyperpermeability + altered RPE barrier function → serous retinal detachment

- Natural course of CSC:
  - 90% resorb spontaneously within 6 months
  - Snellen VA usually returns to baseline
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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  - Most common: An expansile dot (aka *ink blot*)
  - Less common, but more classic: Smokestack

- CSC pathophysiology in a nutshell:
  - Choroidal hyperpermeability + altered RPE barrier function → serous retinal detachment

- Natural course of CSC:
  - 90% resorb spontaneously within 6 months
  - Snellen VA usually returns to baseline
  - Residual mild deficits common or uncommon
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An *expansile dot* (aka *ink blot*)
  - Less common, but more classic: *Smokestack*

- CSC pathophysiology in a nutshell:
  - Choroidal *hyperpermeability* + altered RPE barrier function → serous retinal detachment

- Natural course of CSC:
  - 90% resorb spontaneously within 6 months
  - Snellen VA usually returns to baseline
    - Residual mild deficits common
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An expansile dot (aka *ink blot*)
  - Less common, but more classic: Smokestack

- CSC pathophysiology in a nutshell:
  - Choroidal *hyperpermeability* + altered RPE barrier function → serous retinal detachment

- Natural course of CSC:
  - 90% resorb spontaneously within 6 months
  - Snellen VA usually returns to baseline
    - Residual mild deficits common
    - % have recurrence
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Three leakage patterns seen on FA:
  - Most common: An expansive dot (aka *ink blot*)
  - Less common, but more classic: Smokestack

- CSC pathophysiology in a nutshell:
  - Choroidal hyperpermeability + altered RPE barrier function $\rightarrow$ serous retinal detachment

- Natural course of CSC:
  - 90% resorb spontaneously within 6 months
  - Snellen VA usually returns to baseline
    - Residual mild deficits common
  - 50% have recurrence
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- **Still more re CSC: Management**
  - Assess for high levels of endogenous or exogenous can be a drug, or not
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more re CSC: Management
  - Assess for high levels of endogenous or exogenous corticosteroids
Still more re CSC: Management

- Assess for high levels of **endogenous** or exogenous corticosteroids

What is the classic cause of endogenous hypercortisolism?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: Management

- Assess for high levels of endogenous or exogenous corticosteroids

What is the classic cause of endogenous hypercortisolism?
Cushing syndrome
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: Management

- Assess for high levels of endogenous or exogenous corticosteroids

Which of these corticosteroid administration routes have been associated with CSC?
--PO?
--IV?
--Topical?
--Intra-articular?
--Intranasal?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more re CSC: Management
  - Assess for high levels of endogenous or **exogenous** corticosteroids

*Which of these corticosteroid administration routes have been associated with CSC?*

- PO!
- IV!
- Topical!
- Intra-articular!
- Intranasal!

*All* have been implicated in CSC
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more re CSC: Management
  - Assess for high levels of endogenous or exogenous corticosteroids

Which of these corticosteroid administration routes have been associated with CSC?
- PO!
- IV!
- Topical!
- Intra-articular!
- Intranasal!
- Intravitreal?

All have been implicated in CSC

What about intravitreal steroids? Surely these can cause CSC as well?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more on CSC: Management
  - Assess for high levels of endogenous or exogenous corticosteroids

Which of these corticosteroid administration routes have been associated with CSC?
- PO!
- IV!
- Topical!
- Intra-articular!
- Intranasal!
- Intravitreal? NO!

All have been implicated in CSC

What about intravitreal steroids? Surely these can cause CSC as well?
You’d think so, but no--there is no evidence that it does
Still more re CSC: Management

- Assess for high levels of endogenous or exogenous corticosteroids

Corticosteroids are the classic cause of med-induced CSC, but two other meds are mentioned in the BCSC Retina book. What are they?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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*Corticosteroids are the classic cause of med-induced CSC, but two other meds are mentioned in the BCSC Retina book. What are they? Sildenafil, and MEK inhibitors*
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What class of med is sildenafil?
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What class of med is sildenafil?
It is a phosphodiesterase-5 (PDE5) inhibitor
Q

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How do PDE5 inhibitors cause CSC?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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How do PDE5 inhibitors cause CSC?
Probably by inducing dilation of the choroidal vasculature
Still more re CSC: Management

Assess for high levels of endogenous or exogenous corticosteroids

What does MEK stand for in this context?
Still more re CSC: Management

- Assess for high levels of endogenous or exogenous corticosteroids.

Corticosteroids are the classic cause of med-induced CSC, but two other meds are mentioned in the BCSC Retina book. What are they?

- Sildenafil and MEK inhibitors.

What does MEK stand for in this context? Don't ask—it's complicated.

MEK inhibitors are used to treat metastatic cancer.

What is MEKi-associated retinopathy called?

It is called 'MEKi-associated retinopathy' (MEKAR).

How prevalent is MEKAR?

Very—estimates run as high as 90% of MEKi users will experience MEKAR.

How visually significant is MEKAR?

Not very—most pts are asymptomatic, or only slightly affected.

Is MEKAR an indication to stop the MEKi?

No.
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So when faced with a pt with apparent CSCR, be sure to inquire about three meds:
--- Steroids
--- Sildenafil
--- MEK inhibitors

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So when faced with a pt with apparent CSCR, be sure to inquire about three meds:
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If the pt is not taking these meds, but s/he has evidence of extensive intraocular inflammation, the presence of bilateral serous RDs should cause what diagnosis to spring to mind?

- Vogt-Koyanagi-Harada dz

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Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: Management

- Assess for high levels of endogenous or exogenous corticosteroids
- Wait about \textit{time frame} for spontaneous resolution
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: Management

- Assess for high levels of endogenous or exogenous corticosteroids
- Wait about 3 months for spontaneous resolution
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more re CSC: Management
  - Assess for high levels of endogenous or exogenous corticosteroids
  - Wait about 3 months for spontaneous resolution

Why should intervention be considered at around the 3-month point?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more re CSC: Management
  - Assess for high levels of endogenous or exogenous corticosteroids
  - Wait about **3 months** for spontaneous resolution

*Why should intervention be considered at around the 3-month point? Because photoreceptor atrophy will begin to occur at this juncture*
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: **Management**

- Assess for high levels of endogenous or exogenous **corticosteroids**
- Wait about **3 months** for spontaneous resolution
- Reasons to treat sooner than 3 months:
  - Recurrence in eye with **two words**
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more re CSC: **Management**
  - Assess for high levels of endogenous or exogenous corticosteroids
  - Wait about **3 months** for spontaneous resolution
  - Reasons to treat sooner than 3 months:
    - Recurrence in eye with previous deficit
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: Management

- Assess for high levels of endogenous or exogenous corticosteroids
- Wait about 3 months for spontaneous resolution
- Reasons to treat sooner than 3 months:
  - Recurrence in eye with previous deficit
  - this reason has nothing to do with the current eye/episode
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: **Management**

- Assess for high levels of endogenous or exogenous **corticosteroids**
- Wait about **3 months** for spontaneous resolution
- Reasons to treat sooner than 3 months:
  - Recurrence in eye with **previous deficit**
  - Decreased vision in fellow eye from previous episode
Still more re CSC: **Management**

- Assess for high levels of endogenous or exogenous corticosteroids
- Wait about **3 months** for spontaneous resolution
- Reasons to treat sooner than 3 months:
  - Recurrence in eye with *previous deficit*
  - Decreased vision in fellow eye from previous episode
  - Retinal changes
Still more re CSC: Management

- Assess for high levels of endogenous or exogenous corticosteroids
- Wait about 3 months for spontaneous resolution
- Reasons to treat sooner than 3 months:
  - Recurrence in eye with previous deficit
  - Decreased vision in fellow eye from previous episode
  - Cystic retinal changes
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: **Management**

- Assess for high levels of endogenous or exogenous **corticosteroids**
- Wait about **3 months** for spontaneous resolution
- Reasons to treat sooner than 3 months:
  - Recurrence in eye with **previous deficit**
  - **Decreased vision in fellow eye from previous episode**
  - **Cystic** retinal changes
  - Widespread **abb.** changes
Still more re CSC: Management

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Still more re CSC: **Management**

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- Reasons to treat sooner than 3 months:
  - Recurrence in eye with **previous deficit**
  - **Decreased vision** in fellow eye from previous episode
  - **Cystic** retinal changes
  - Widespread **RPE** changes
  - **Occupational needs**
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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  - Widespread RPE changes
  - Occupational needs

Treatment: Photodynamic therapy
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more re CSC: **Management**
  - Assess for high levels of endogenous or exogenous **corticosteroids**
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  - Reasons to treat sooner than 3 months:
    - Recurrence in eye with **previous deficit**
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    - Widespread **RPE** changes
    - **Occupational** needs
  - Treatment: **Photodynamic therapy**
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSR: Management

- Assess for high levels of endogenous or exogenous corticosteroids
- Wait about 3 months for spontaneous resolution
- Reasons to treat sooner than 3 months:
  - Recurrence in eye with previous deficit
  - Decreased vision in fellow eye from previous episode
  - Cystic retinal changes
  - Widespread RPE changes
  - Occupational needs

What is photodynamic therapy?

Treatment: Photodynamic therapy
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSR: Management

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Reasons to treat sooner than 3 months:
- Recurrence in eye with previous deficit
- Decreased vision in fellow eye from previous episode
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- Widespread RPE changes
- Occupational needs

Treatment: Photodynamic therapy

What is photodynamic therapy?
A form of phototherapy for vascular lesions, usually within the posterior segment of the eye
Still more re CSR: Management

- Assess for high levels of endogenous or exogenous corticosteroids
- Wait about 3 months for spontaneous resolution
- Reasons to treat sooner than 3 months:
  - Recurrence in eye with previous deficit
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  - Widespread RPE changes
  - Occupational needs

**Treatment:** Photodynamic therapy

What is photodynamic therapy?
A form of phototherapy for vascular lesions, usually within the posterior segment of the eye

Briefly, how does it work?
Still more re CSR: Management

- Assess for high levels of endogenous or exogenous corticosteroids
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Treatment: Photodynamic therapy

What is photodynamic therapy?
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Briefly, how does it work?
A light-sensitive chemical is injected intravenously, and time sufficient to allow concentration of the chemical in the lesion is allowed to pass. Light of the wavelength needed to activate the chemical is then delivered. The chemical is stimulated to react with oxygen to create free radicals, which degrade the lesion and/or its vasculature.
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSR: Management

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What is the name of the infused chemical?

Verteporfin
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Occupational needs
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more re CSC: Management
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  - Wait about 3 months for spontaneous resolution
  - Reasons to treat sooner than 3 months:
    - Recurrence in eye with previous deficit
    - Decreased vision in fellow eye from previous episode
    - Cystic retinal changes
    - Widespread RPE changes
    - Occupational needs
  - Treatment: Thermal laser?

What about thermal laser? It is an effective treatment?

- Decreased vision in fellow eye from previous episode
  - Cystic retinal changes
  - Widespread RPE changes
  - Occupational needs

Thermal laser?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Still more re CSC: Management
  - Assess for high levels of endogenous or exogenous corticosteroids
  
  **What about thermal laser? It is an effective treatment?**
  Yes and no. Thermal laser does hasten fluid resorption, and thus facilitates faster visual recovery.

- Decreased vision in fellow eye from previous episode
- Cystic retinal changes
- Widespread RPE changes
- Occupational needs

- Treatment: **Thermal laser? Meh**
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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- Treatment: **Thermal laser? Meh**

- What about thermal laser? It is an effective treatment?
  - Yes and no. Thermal laser does hasten fluid resorption, and thus facilitates faster visual recovery.
  - However, when studies compare treated vs untreated eyes:
    - Final visual acuity was no different between groups
    - Recurrence rate was no different between groups

- Inadvertent rupture of Bruch’s membrane leading to iatrogenic CNVM
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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What is the rare-but-devastating complication associated with thermal laser treatment?
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Can CSC pts develop CNVM spontaneously?

Treatment: Thermal laser? Meh
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Can CSC pts develop CNVM spontaneously? Yes

Treatment: Thermal laser? Meh
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: Management
- Assess for high levels of endogenous or exogenous corticosteroids
- Wait about 3 months for spontaneous resolution
- Reasons to treat sooner than 3 months:
  - Recurrence in eye with previous deficit
  - Decreased vision in fellow eye from previous episode
  - Cystic retinal changes
  - Widespread RPE changes
  - Occupational needs

Remember, the treatment of choice in most CSC cases is observation
- Decreased vision in fellow eye from previous episode
- Cystic retinal changes
- Widespread RPE changes
- Occupational needs

Treatment: Photodynamic therapy
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Differential for CSC:
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- Differential for CSC:
  - Optic nerve pit
  - Vogt-Koyanagi-Harada (VKH) disease
  - Wet age-related macular degeneration (ARMD)
  - Pigment epithelial detachment (PED)
  - Toxemia of pregnancy
  - Choroidal nevi
  - Polypoidal choroidal vasculopathy
**Central Serous Chorioretinopathy/Choroidopathy (CSC)**

**Is it CSC or wet ARMD? An important distinction to make—can you make it?**

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Central Serous Chorioretinopathy/Choroidopathy (CSC)

The choroid is seen in cross section. Subfoveal choroidal thickness was measured vertically from the outer border of the RPE to the inner border of the sclera (brackets) in a healthy eye in a 55-year-old man (A) and in 3 representative eyes with CSC: in a 44-year-old man (B), a 57-year-old man (C), and a 63-year-old man (D).
Is it CSC or wet ARMD? An important distinction to make—can you make it?

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Choroidal thickness may not be readily interpretable on spectral-domain OCT (SD-OCT). What OCT modality is preferred for assessing the choroid?
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*Choroidal thickness may not be readily interpretable on spectral-domain OCT (SD-OCT). What OCT modality is preferred for assessing the choroid? Enhanced-depth imaging OCT (EDI-OCT; this was the modality used to create the images on the previous slide)*

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**In the context of CSC, what are descending tracts?**

Descending tracts are best visualized via Fundus autofluorescence (FAF).

Long, narrow areas of RPE change extending inferiorly from the areas of SRF

What is the cause?

Gravity-dependent 'dripping' of the SRF

By what other name is this phenomenon known?

'Guttering'
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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- **Is it CSC or wet ARMD?**
  - An important distinction to make—can you make it?

- **Is it CSC?**
  - **Yes**

- **Is it ARMD?**
  - **No**

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Central Serous Chorioretinopathy/Choroidopathy (CSC)

CSC: Descending tracts/guttering (FAF images)
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In CNVM there is usually a concomitant **two words**, whereas this will not be present in CSC

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Central Serous Chorioretinopathy/Choroidopathy (CSC)

**ARMD:** PED (△) and SRF (↓), along with subretinal hemorrhage (*)

**CSC:** PED and SRF, but no hemorrhage