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

(not yet) → three words → visual dysfunction

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

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

(not yet)
Central Serous Chorioretinopathy/Choroidopathy (CSC)

CSC: Serous RD
Central Serous Chorioretinopathy/Choroidopathy (CSC)

In general terms, what is the pathophysiology of CSC?

- Choroidal hyperpermeability
  - 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
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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

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

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

Mild

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

What is the typical range of Snellen acuity, and the typical value?
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Choroidal hyperpermeability → serous retinal detachment → visual dysfunction → leakage at level of RPE
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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  - Altered color vision

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- 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)

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  - Decreased VA
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  - Altered color vision

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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
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  - Altered color vision

\[ \text{Is the loss of Snellen acuity usually mild, or severe?} \]

- Mild

\[ \text{What is the typical range of Snellen acuity, and the typical value?} \]

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

\[ \text{A refractive shift may contribute to the decreased VA. If present, what sort of refractive shift is typical?} \]

- A hyperopic shift

\[ \text{Why a hyperopic shift?} \]

In general terms, what is the pathophysiology of CSC?

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

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

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

What is the typical range of Snellen acuity, and the typical value?
The range is 20/20 - 20/200; the typical value is 20/30 or better

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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 $\rightarrow$ 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

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

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:
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?
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?
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
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:
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’
Three leakage patterns seen on FA:

- Most common: An expansile dot (aka ink blot)
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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

CSC: Expansile dot
Three leakage patterns seen on FA:

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

Central Serous Chorioretinopathy/Choroidopathy (CSC)
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
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?**

(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?

**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?

Smokestack
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? ‘Tree shaped;’ ie, a narrow, trunk-like portion below with a spread-out, canopy-like portion above.
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 \textit{ink blot})
- Less common, but more classic: \textit{Smokestack}

\textbf{What is the shape of the classic smokestack pattern?}
Um, a smokestack?

\textit{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

So, it’s a smokestack yielding a tree? Isn’t that a rather awkward mixing of metaphors?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Three leakage patterns seen on FA:

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

So, it’s a smokestack yielding a tree? Isn’t that a rather awkward mixing of metaphors?
What can I say--I’m just the messenger
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

*Does OCT have any advantages as an imaging modality for CSC?*
Three leakage patterns seen on FA:

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

---

**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)

CSC: 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

- CSC pathophysiology in a nutshell:
  - Choroidal + altered RPE

*(this question is a recapitulation of the info covered at the outset of the slide-set)*
A

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
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:
- $\%$ resorb spontaneously within *time frame*
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
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 → 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 $\rightarrow$ serous retinal detachment

- Natural course of CSC:
  - **90%** resorb spontaneously within **6 months**
  - Snellen VA usually **returns to baseline**
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 → 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
• 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 \(\rightarrow\) 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
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
  - 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
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 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? **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!
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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)

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
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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
- MEK inhibitors

What class of med is sildenafil?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

- 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 class of med is sildenafil?*
It is a phosphodiesterase-5 (PDE5) inhibitor
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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 class of med is sildenafil? 
It is a phosphodiesterase-5 (PDE5) inhibitor

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

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 class of med is sildenafil?
It is a phosphodiesterase-5 (PDE5) inhibitor

How do PDE5 inhibitors cause CSC?
Probably by inducing dilation of the choroidal vasculature
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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

What are MEK inhibitors (MEKIs) 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
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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

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

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 MEK-associated retinopathy called?

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

How prevalent is MEKAR?

Very--estimates run as high as 90% of MEK users will experience MEKAR.

How visually significant is MEKAR?

Not very--most patients are asymptomatic, or only slightly affected.

Is MEKAR an indication to stop the MEKi?

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Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: Management

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Still more re CSC: Management

Assess for high levels of endogenous or exogenous corticosteroids

Central Serous Chorioretinopathy/Choroidopathy (CSC)

So when faced with a pt with apparent CSCR, be sure to inquire about three meds:
--- Steroids
--- Sildenafil
--- MEK inhibitors

What are MEK inhibitors (MEKs) used to treat?
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Central Serous Chorioretinopathy/Choroidopathy (CSC)

Q

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

Corticosteroids

Sildenafil

MEK inhibitors

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)

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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 [time frame] for spontaneous resolution
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
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
  - 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
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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- 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 changes
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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  - Assess for high levels of endogenous or exogenous corticosteroids
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    - Widespread **RPE** changes
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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  - Recurrence in eye with **previous deficit**
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  - Widespread **RPE** changes
  - **Occupational needs**
Central Serous Chorioretinopathy/Choroidopathy (CSC)

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- Assess for high levels of endogenous or exogenous corticosteroids
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  - Widespread RPE changes
  - Occupational needs
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
- Treatment: Photodynamic therapy
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
  - Treatment: **Photodynamic therapy**
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

Treatment: Photodynamic therapy

**What is 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

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

- 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

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?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSR: Management

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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?
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)

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What is the name of the infused chemical?

What is photodynamic therapy?

Occupational needs

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

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What is the name of the infused chemical?
Verteporfin
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?

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

Treatment: Thermal laser?
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:
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    - Decreased vision in fellow eye from previous episode
    - Cystic retinal changes
    - Widespread RPE changes
    - Occupational needs
  - 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
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: Management

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What is the rare-but-devastating complication associated with thermal laser treatment?

- 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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  *What is the rare-but-devastating complication associated with thermal laser treatment?*
  Inadvertent rupture of Bruch’s membrane leading to iatrogenic CNVM

- 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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Can CSC pts develop CNVM spontaneously?
Central Serous Chorioretinopathy/Choroidopathy (CSC)

Still more re CSC: Management

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

Treatment: Thermal laser? Meh

Can CSC pts develop CNVM spontaneously?
Yes

CNVM
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:
  - Optic nerve pit
  - VKH
  - Wet ARMD
  - PED
  - Toxemia of pregnancy
  - Choroidal nevi
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
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Is it CSC or wet ARMD? An important distinction to make—can you make it?
### Central Serous Chorioretinopathy/Choroidopathy (CSC)

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

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*In the context of CSC, what are descending tracts?*
Is it CSC or wet ARMD? An important distinction to make—can you make it?

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In the context of CSC, what are descending tracts? Long, narrow areas of RPE change extending inferiorly from the areas of SRF.
Central Serous Chorioretinopathy/Choroidopathy (CSC)

CSC: Descending tracts
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*In the context of CSC, what are descending tracts?*  
Long, narrow areas of RPE change extending inferiorly from the areas of SRF

*What is the cause?*
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*In the context of CSC, what are descending tracts?*
Long, narrow areas of RPE change extending inferiorly from the areas of SRF

*What is the cause?*
Gravity-dependent ‘dripping’ of the SRF

*Is it CSC or wet ARMD? An important distinction to make—can you make it?*
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**In the context of CSC, what are descending tracts?**
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?**
Is it CSC or wet ARMD? An important distinction to make—can you make it?

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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)