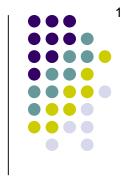
• Dendritiform keratopathy: DDx

Mnemonic forthcoming...



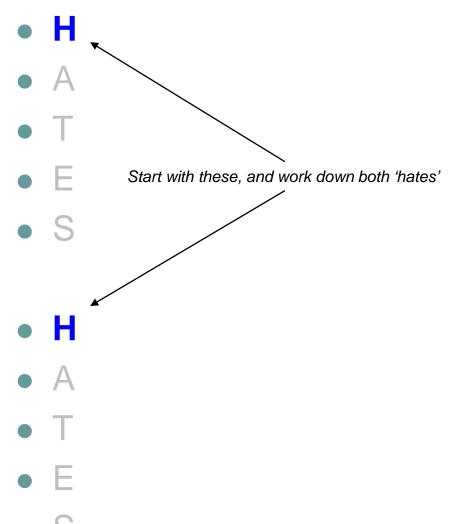
• Dendritiform keratopathy: DDx

• H The Cornea • A Н Α • T Т • E Ε S, • **S** Η Α • H Т • A Ε S Ε **Dendrites!**

S

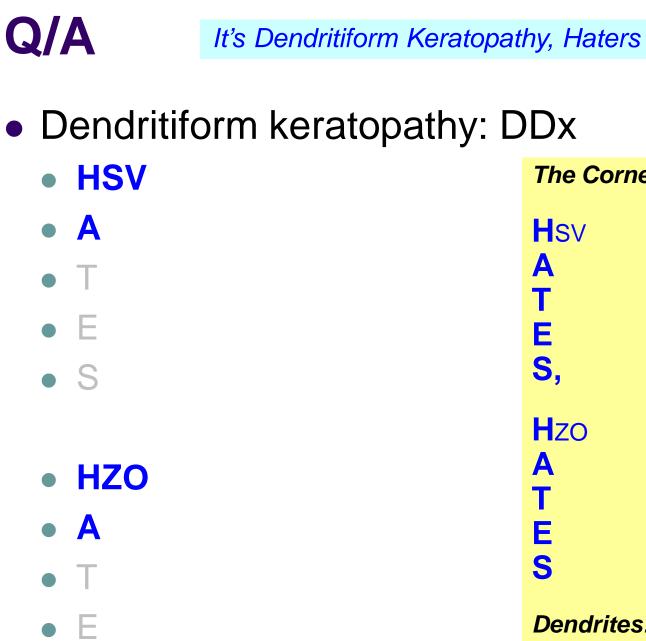








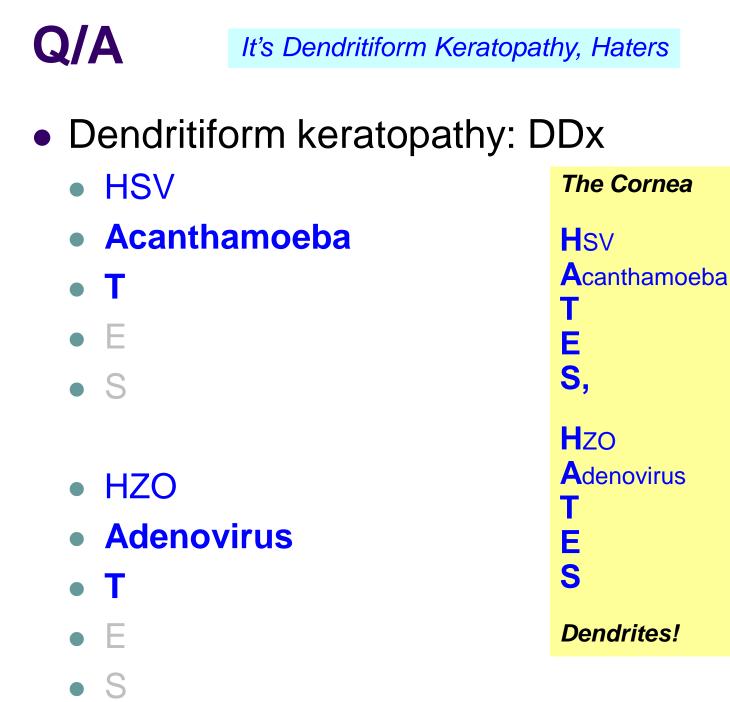




S

The Cornea **Dendrites!**





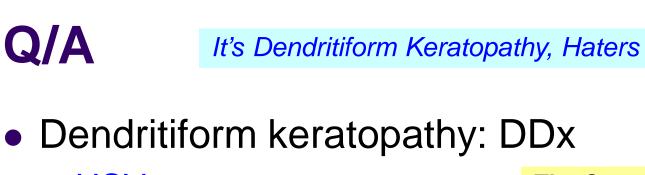




- HZO
- Adenovirus
- Thygeson's
- E

The Cornea HSV Acanthamoeba **T**opical meds Ε S, Hzo **A**denovirus Thygeson's Ε S **Dendrites!**





- HSV
- Acanthamoeba
- Topical meds
- EBV
- \$
- HZO
- Adenovirus
- Thygeson's
- EBMD
- **S**

The Cornea HSV Acanthamoeba **T**opical meds **E**BV S, Hzo **A**denovirus Thygeson's EBMD S **Dendrites!**





- HSV
- Acanthamoeba
- Topical meds
- EBV
- Soft CL wear
- HZO
- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

The Cornea **H**SV **A**canthamoeba **T**opical meds **E**BV Soft CL wear, Hzo **A**denovirus Thygeson's EBMD Sub-epi deposits **Dendrites!**



Q

It's Dendritiform Keratopathy, Haters

The dendrites of herpetic epitheliopathy take stains in a particular manner: The epithelium at the edges of the dendrite stain with two words, while the base of the dendrite stains with one word. It's important to note that the dendrites associated with these other conditions will generally not take stains the same way.

- Acanthamoeba
- Topical meds
- EBV

Dendriti

HSV

- Soft CL wear
- HZO
- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

HSV Acanthamoeba **T**opical meds **E**BV Soft CL wear, Hzo Adenovirus Thygeson's EBMD Sub-epi deposits **Dendrites!**

9

Α

It's Dendritiform Keratopathy, Haters

The dendrites of herpetic epitheliopathy take stains in a particular manner: The epithelium at the edges of the dendrite stain with **rose bengal**, while the base of the dendrite stains with **fluorescein**. It's important to note that the dendrites associated with these other conditions will generally not take stains the same way.

- Acanthamoeba
- Topical meds
- EBV

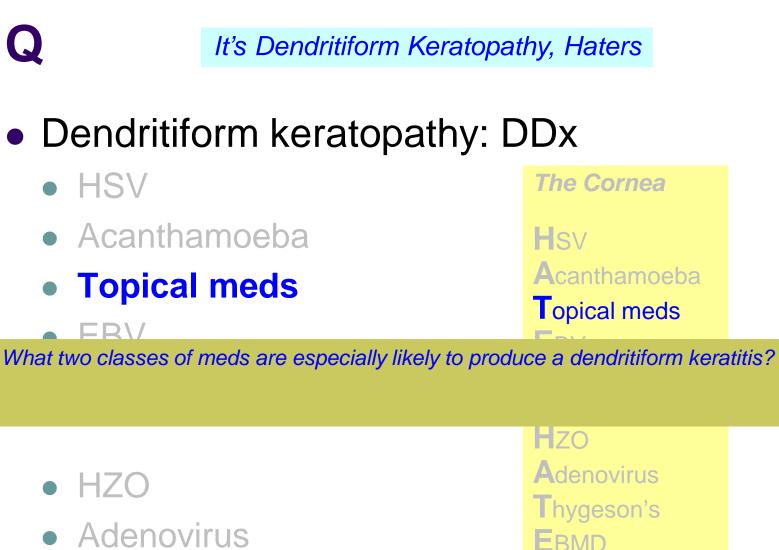
Dendriti

HSV

- Soft CL wear
- HZO
- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

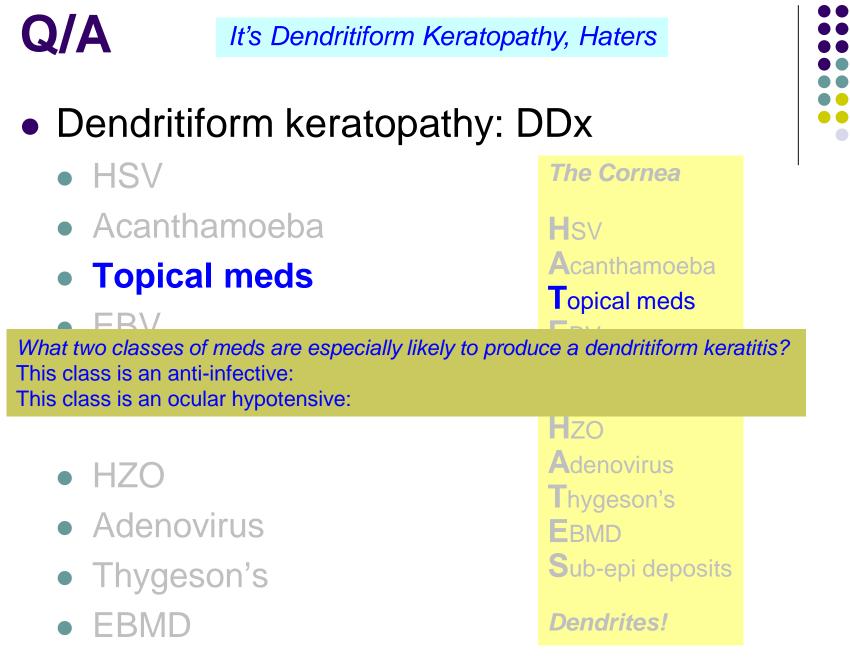
HSV Acanthamoeba opical meds **E**BV Soft CL wear, Hzo Adenovirus Thygeson's EBMD Sub-epi deposits **Dendrites!**

10



- Thygeson's
- EBMD
- Subepithelial deposits





Subepithelial deposits



Subepithelial deposits

 HSV The Cornea Acanthamoeba HSV Acanthamoeba Topical meds Topical meds What two classes of meds are especially likely to produce a dendritiform keratitis? This class is an anti-infective: Antivirals This class is an ocular hypotensive: Beta-blockers Hzo Adenovirus HZO Thygeson's Adenovirus EBMD Sub-epi deposits Thygeson's EBMD **Dendrites!**





- HSV
- Acanthamoeba
- Topical meds

What specifically about soft CL wear is the culprit?

Soft CL wear

- HZO
- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

The Cornea HSV Acanthamoeba Topical meds **E**BV Soft CL wear Hzo Adenovirus Thygeson's EBMD Sub-epi deposits **Dendrites!**





- HSV
- Acanthamoeba
- Topical meds

What specifically about soft CL wear is the culprit? The preservative **thimerosal** in the CL solution

• Soft CL wear

- HZO
- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

The Cornea HSV Acanthamoeba **T**opical meds **E**BV Soft CL wear Hzo Adenovirus Thygeson's EBMD Sub-epi deposits **Dendrites!**





- Dendritiform keratopathy: DDx
 - HSV
 - Acanthamoeba
 - Topical meds

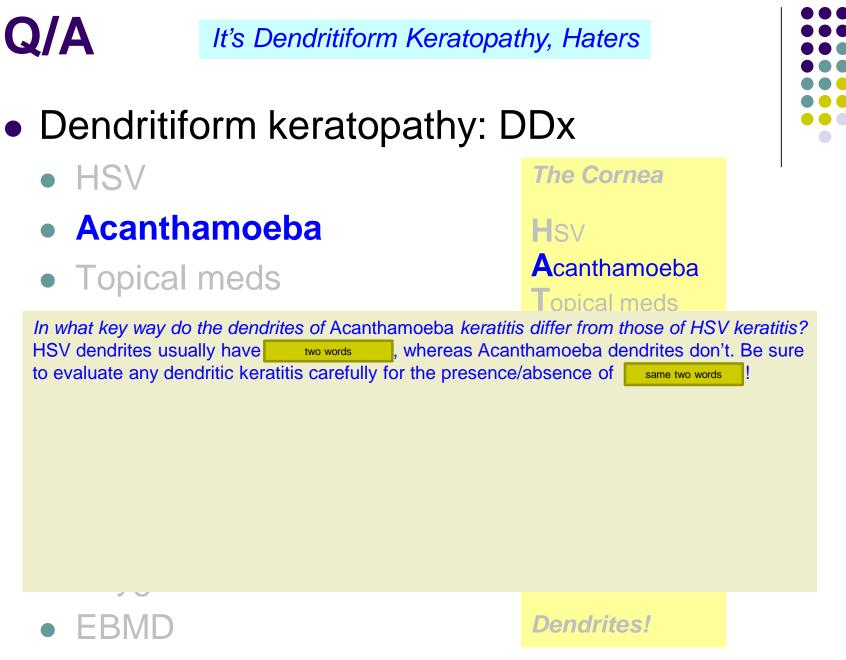
The Cornea HSV Acanthamoeba Topical meds

In what key way do the dendrites of Acanthamoeba keratitis differ from those of HSV keratitis?

- EBMD
- Subepithelial deposits

Dendrites!



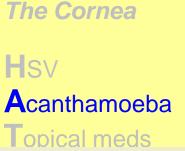


Subepithelial deposits

17



- Dendritiform keratopathy: DDx
 - HSV
 - Acanthamoeba
 - Topical meds



In what key way do the dendrites of Acanthamoeba keratitis differ from those of HSV keratitis? HSV dendrites usually have terminal bulbs, whereas Acanthamoeba dendrites don't. Be sure to evaluate any dendritic keratitis carefully for the presence/absence of terminal bulbs !

• EBMD

• Subepithelial deposits

Dendrites!





- Dendritiform keratopathy: DDx
 - HSV
 - Acanthamoeba
 - Topical meds

The Cornea HSV Acanthamoeba Topical meds

In what key way do the dendrites of Acanthamoeba *keratitis differ from those of HSV keratitis?* HSV dendrites usually have terminal bulbs , whereas Acanthamoeba dendrites don't. Be sure to evaluate any dendritic keratitis carefully for the presence/absence of terminal bulbs !

In what key way might the presenting complaint of an Acanthamoeba keratitis patient differ from that of an HSV keratitis patient?



• Subepithelial deposits

Dendrites!





- HSV
- Acanthamoeba
- Topical meds

The Cornea HSV Acanthamoeba Topical meds



In what key way do the dendrites of Acanthamoeba keratitis differ from those of HSV keratitis? HSV dendrites usually have terminal bulbs, whereas Acanthamoeba dendrites don't. Be sure to evaluate any dendritic keratitis carefully for the presence/absence of terminal bulbs!

In what key way might the presenting complaint of an Acanthamoeba keratitis patient differ from that of an HSV keratitis patient?

The patient with *Acanthamoeba* keratitis will complain of pain that seems out of proportion to the clinical picture, while the HSV keratitis patient will have **less** pain than would be expected given the appearance of the cornea.

• EBMD

Dendrites!

Subepithelial deposits



- HSV
- Acanthamoeba
- Topical meds

The Cornea HSV Acanthamoeba Topical meds



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Why is Acanthamoeba keratitis so painful?



• Subepithelial deposits

Dendrites!



- HSV
- Acanthamoeba
- Topical meds

The Cornea HSV Acanthamoeba Topical meds



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The patient with *Acanthamoeba* keratitis will complain of pain that seems out of proportion to the clinical picture, while the HSV keratitis patient will have **less** pain than would be expected given the appearance of the cornea.

Why is Acanthamoeba *keratitis so painful?* Because the bug has a propensity for perineural invasion



• Subepithelial deposits

Dendrites!



Dendritiform keratopathy: DDx

In this context, what does EBMD stand for?



- Thygeson's
- EBMD
- Subepithelial deposits





Dendritiform keratopathy: DDx

In this context, what does EBMD *stand for?* Epithelial basement membrane dystrophy



- Thygeson's
- EBMD
- Subepithelial deposits





Dendritiform keratopathy: DDx

In this context, what does EBMD *stand for?* Epithelial basement membrane dystrophy

What are three other common names for EBMD?

- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits





In this context, what does EBMD *stand for?* Epithelial basement membrane dystrophy

What are three other common names for EBMD?

- --Map-dot-fingerprint dystrophy
- --Cogan's microcystic dystrophy
- --Anterior basement membrane dystrophy



- Thygeson's
- EBMD
- Subepithelial deposits





In this context, what does EBMD *stand for?* Epithelial basement membrane dystrophy

What are three other common names for EBMD?

- --Map-dot-fingerprint dystrophy
- --Cogan's microcystic dystrophy
- --Anterior basement membrane dystrophy

What is the slit-lamp appearance of EBMD?

- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits





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- --Map-dot-fingerprint dystrophy
- --Cogan's microcystic dystrophy
- --Anterior basement membrane dystrophy

What is the slit-lamp appearance of EBMD? It can present in any combo of the following:

--Fingerprint lines: Thin, curvy lines that occur in groups and follow the same course

--Map lines: Thicker lines that follow a more jagged course

--Dots/cysts

- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits





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- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits





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What do pts complain of?

Most cases present with symptoms related to recurrent epithelial erosions (REE)

- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits





In this context, what does EBMD *stand for?* Epithelial basement membrane dystrophy

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- --Cogan's microcystic dystrophy
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It can present in any combo of the following:

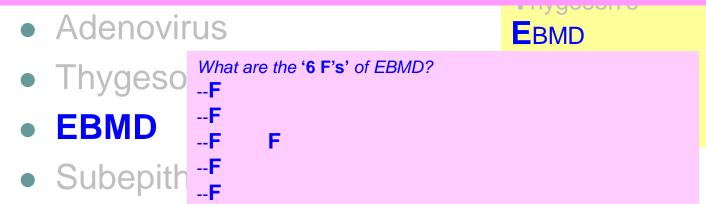
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Most cases present with symptoms related to recurrent epithelial erosions (REE)







In this context, what does EBMD *stand for?* Epithelial basement membrane dystrophy

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- --Cogan's microcystic dystrophy
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It can present in any combo of the following:

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--Dots/cysts

What do pts complain of?

Most cases present with symptoms related to recurrent epithelial erosions (REE)

1		· · · · ·
Adenovi	^r US	EBMD
 Thygeso 	What are the '6 F's' of EBMD? Female	
• EBMD	Fifties and older (usually) Five to Fifteen percent of the population are afflicted	
 Subepith 	Fifty percent of pts who suffer REE have it Fibrillar material accumulates under the basement membrane	





- HSV
- Acanthamoeba
- Topical meds
- EBV
- Soft CL wear
- HZO
- Adenovirus

• Thygeson's What does this mean, sub-epi deposits?

Subepithelial deposits

The Cornea HSV Acanthamoeba **T**opical meds **E**BV Soft CL wear Hzo Adenovirus Thygeson's EBMD Sub-epi deposits





- HSV
- Acanthamoeba
- Topical meds
- EBV
- Soft CL wear
- HZO
- Adenovirus

Thvaeson's

The Cornea HSV Acanthamoeba **T**opical meds **E**BV **S**oft CL wear Hzo Adenovirus Thygeson's EBMD Sub-epi deposits



What does this mean, sub-epi deposits? Deposits as found in diseases such as Fabry's, as well as with certain systemic drugs

Subepithelial deposits



- Dendritifor
 - HSV?

The strength-of-association with dendritiform lesions is not the same for all of these conditions. For which three conditions is the association especially **weak**?

- Acanthamoeba?
- Topical meds?
- *EBV*?
- Soft CL wear?
- *HZO*?
- Adenovirus?
- Thygeson's?
- EBMD?
- Subepithelial deposits?

HSV Acanthamoeba Topical meds **E**BV Soft CL wear Hzo Adenovirus Thygeson's EBMD Sub-epi deposits **Dendrites!**



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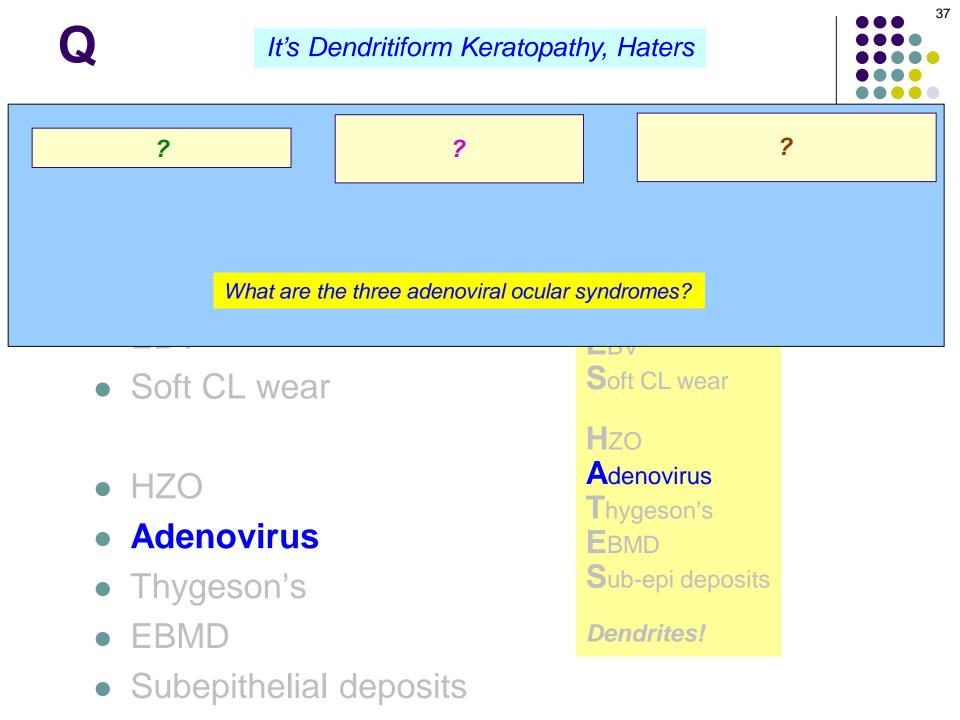
Dendritifor

• HSV

The strength-of-association with dendritiform lesions is not the same for all of these conditions. For which three conditions is the association especially **weak**?

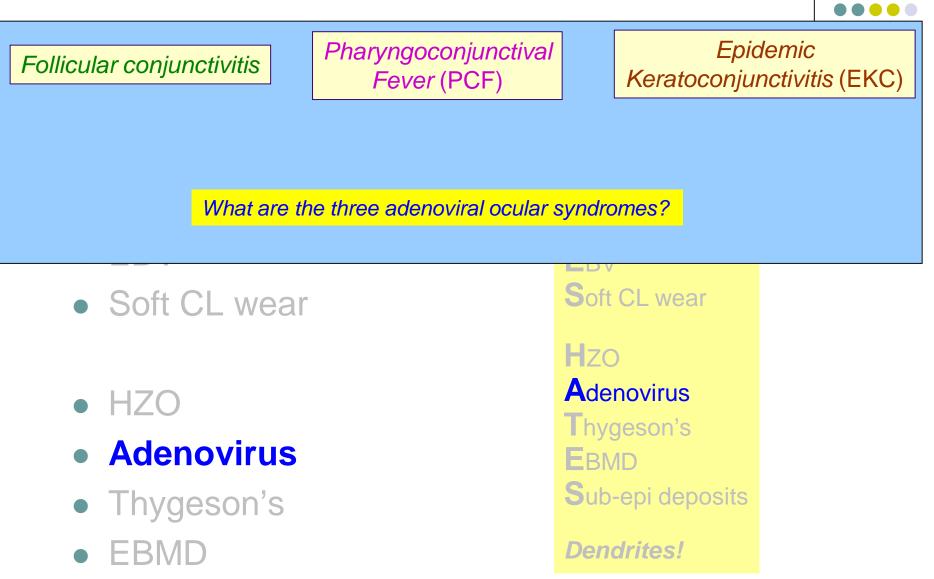
- Acanthamoeba
- Topical meds
- EBV
- Soft CL wear
- HZO
- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

HSV Acanthamoeba Topical meds **E**BV Soft CL wear Hzo Adenovirus Thygeson's EBMD Sub-epi deposits **Dendrites!**













Follicular conjunctivitis?

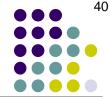
Pharyngoconjunctival Fever (PCF) ? Epidemic Keratoconjunctivitis (EKC)?

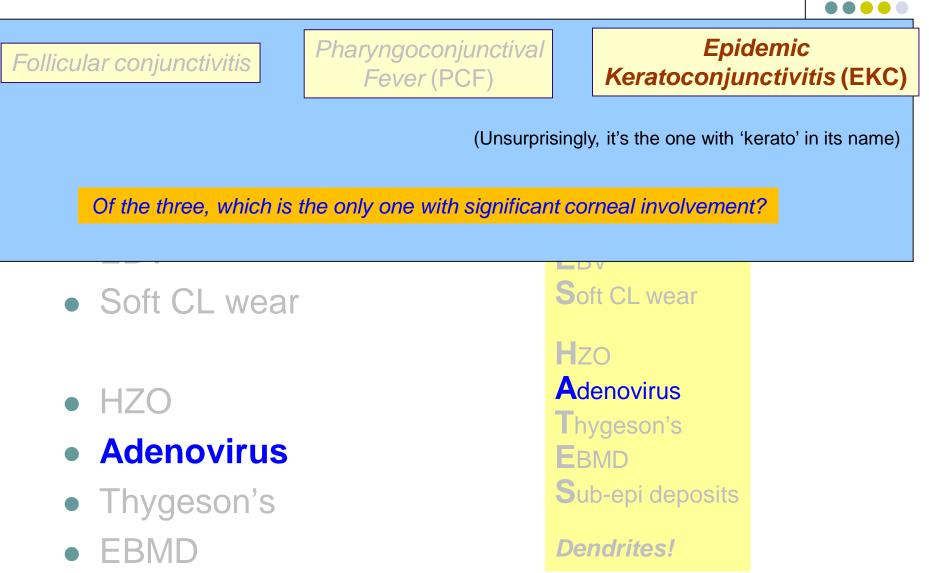
Of the three, which is the only one with significant corneal involvement?

- Soft CL wear
- HZO
- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

Soft CL wear HZO Adenovirus Thygeson's EBMD Sub-epi deposits Dendrites!





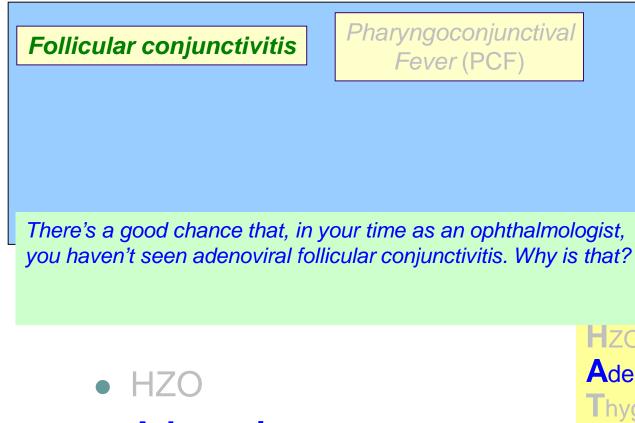






Epidemic

Keratoconjunctivitis (EKC)



- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

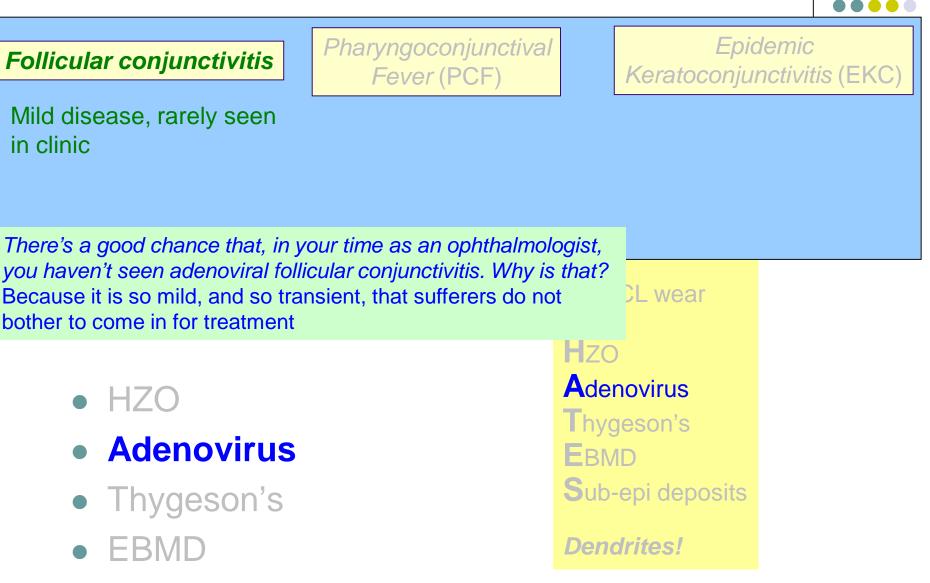
HZO Adenovirus Thygeson's EBMD Sub-epi deposits

L wear

Dendrites!

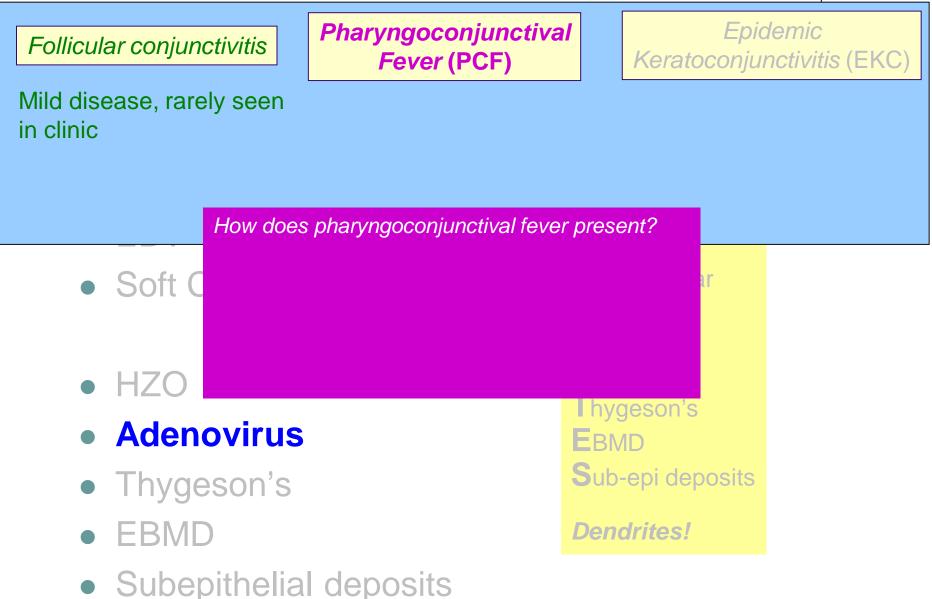






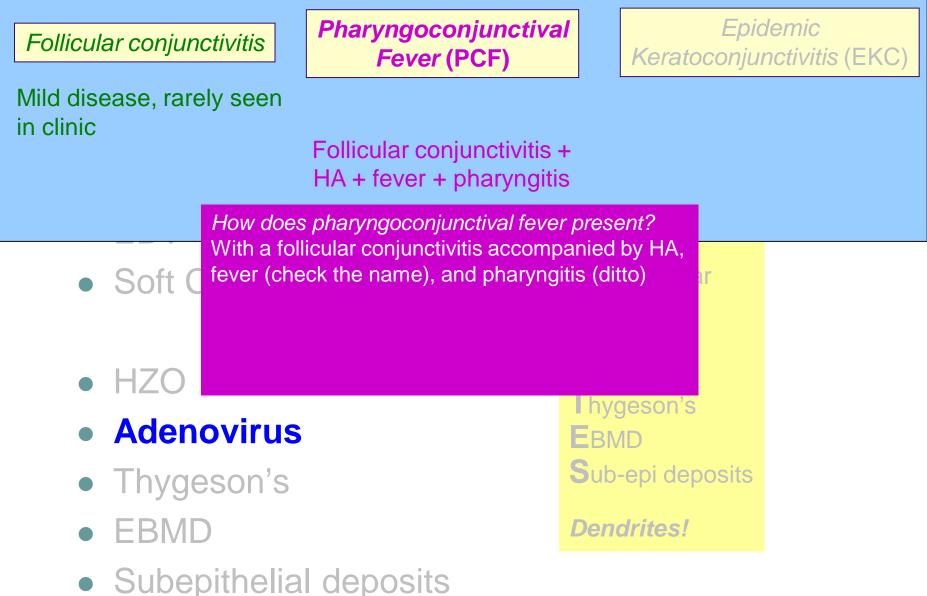






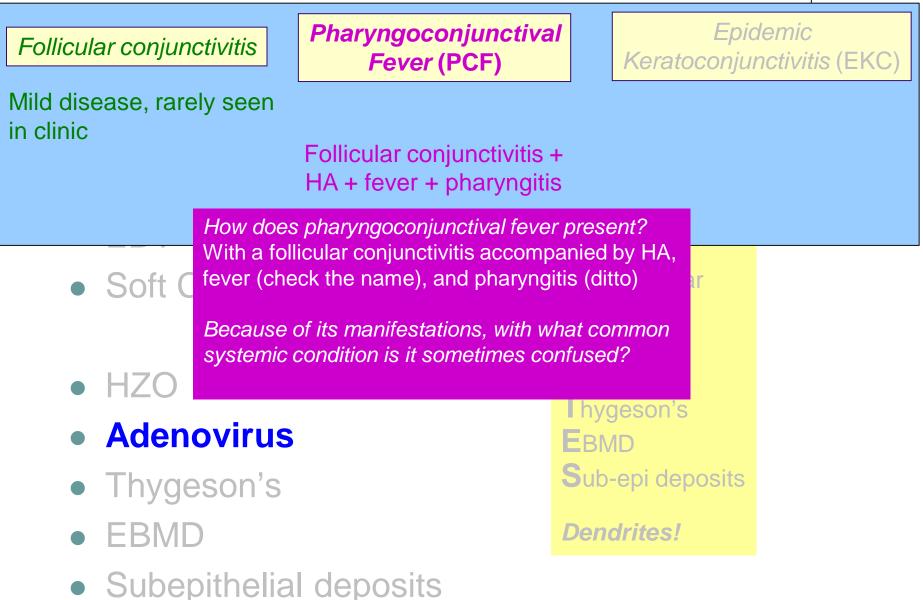






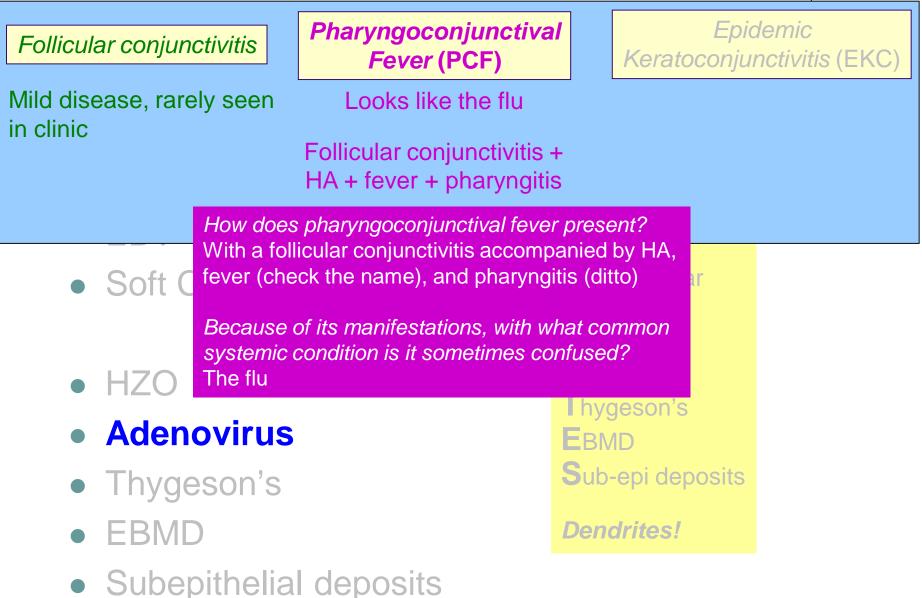
Q





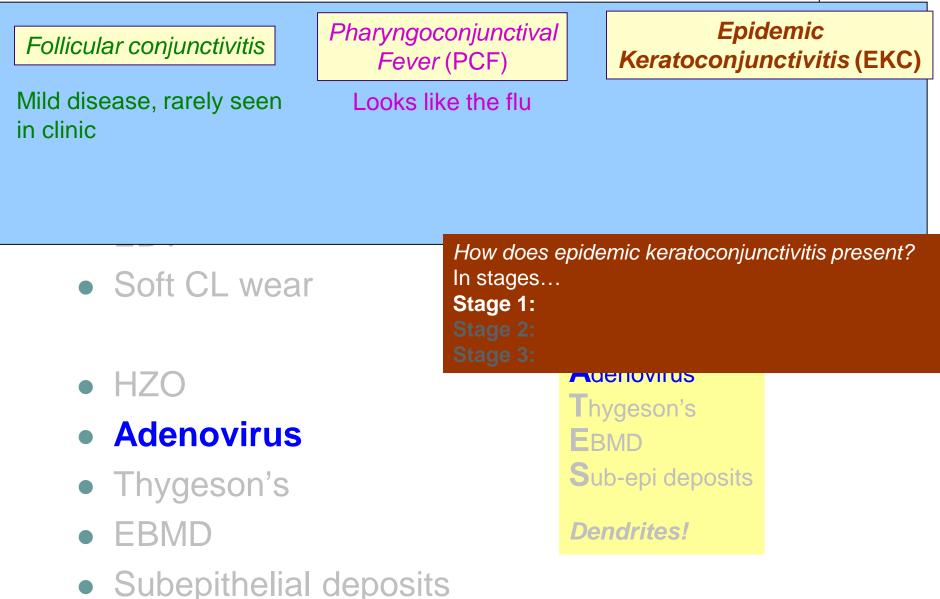




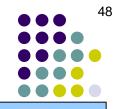












Epidemic

Keratoconjunctivitis (EKC)

Follicular conjunctivitis

Pharyngoconjunctival Fever (PCF)

Looks like the flu

Mild disease, rarely seen in clinic

• Soft CL wear

How does epidemic keratoconjunctivitis present? In stages... Stage 1: Upper respiratory tract infection Stage 2: Stage 3:

• HZO

- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

Thygeson's EBMD Sub-epi deposits

Dendrites!





Epidemic

Keratoconjunctivitis (EKC)

Follicular conjunctivitis

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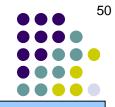
Stage 1: Upper respiratory tract infection
Stage 2: Severe follicular conjunctivitis
Stage 3:

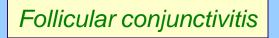
• HZO

- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

Thygeson's EBMD Sub-epi deposits Dendrites!







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How does epidemic keratoconjunctivitis present?
In stages...
Stage 1: Upper respiratory tract infection
Stage 2: Severe follicular conjunctivitis
Stage 3: Subepithelial infiltrates

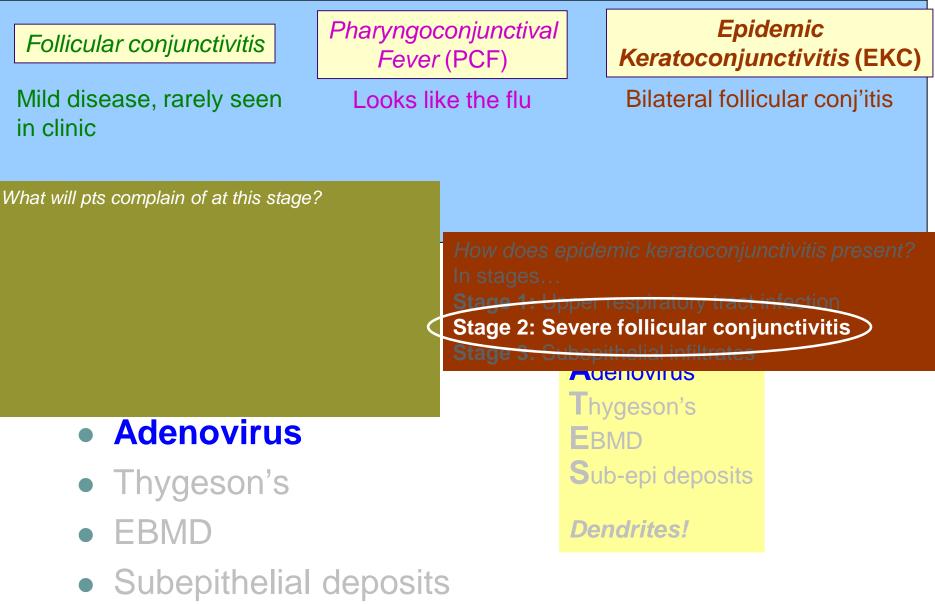
• HZO

- Adenovirus
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- EBMD
- Subepithelial deposits

Thygeson's EBMD Sub-epi deposits Dendrites!

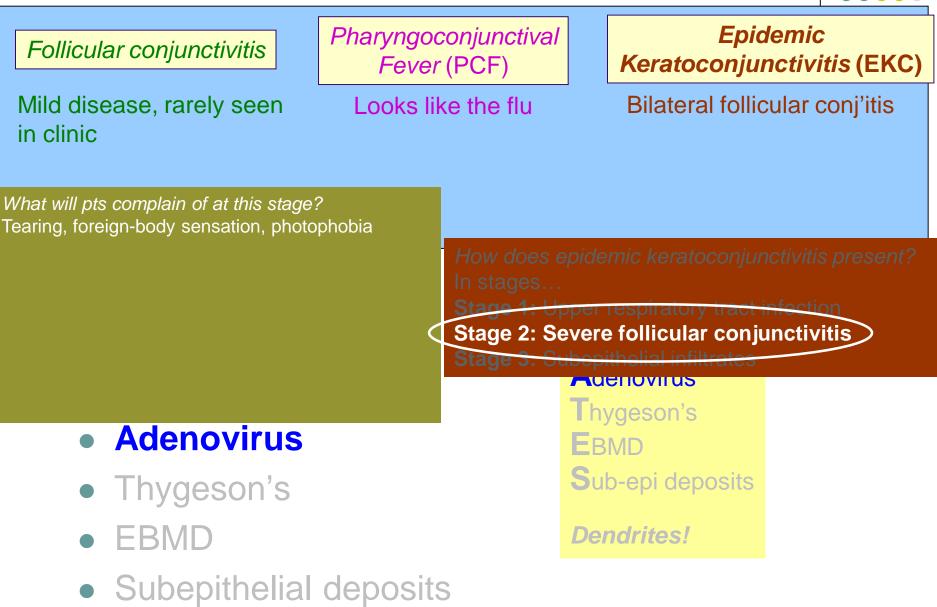






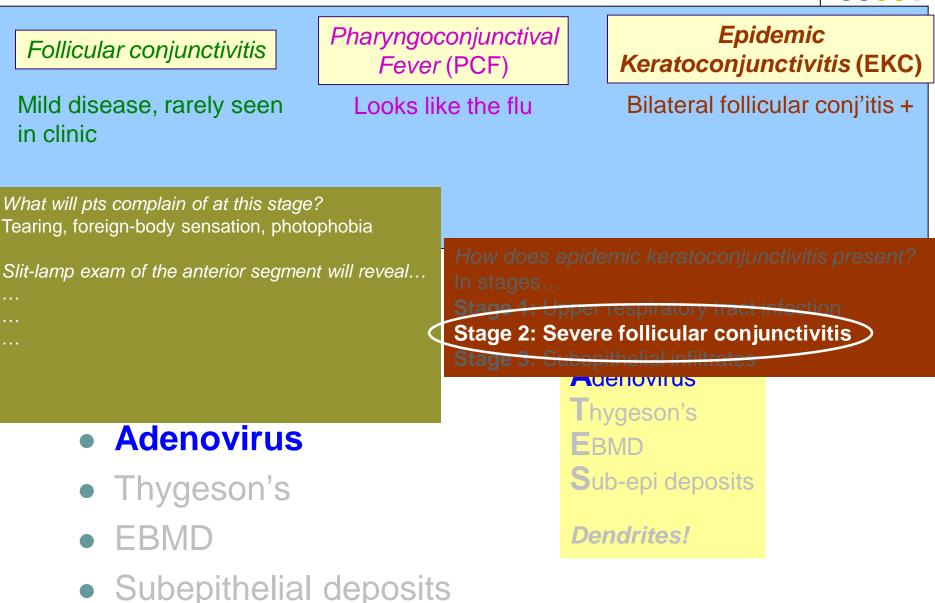


















Pharyngoconjunctival Fever (PCF)

Looks like the flu

Epidemic Keratoconjunctivitis (EKC)

Mild disease, rarely seen in clinic

Bilateral follicular conj'itis + punctate keratopathy +

What will pts complain of at this stage? Tearing, foreign-body sensation, photophobia

Slit-lamp exam of the anterior segment will reveal... ... Punctate epithelial keratopathy

Stage 1: Upper respiratory tract infection

Stage 2: Severe follicular conjunctivitis

opithelial infiltre Stage 3: Sub

Adenovirus

- Thygeson's
- EBMD
- Subepithelial deposits

hygeson's EBMD Sub-epi deposits **Dendrites!**





Follicular conjunctivitis

Mild disease, rarely seen

Pharyngoconjunctival Fever (PCF)

Looks like the flu

Epidemic Keratoconjunctivitis (EKC)

Bilateral follicular conj'itis + punctate keratopathy + petechial hemorrhages +

What will pts complain of at this stage? Tearing, foreign-body sensation, photophobia

Slit-lamp exam of the anterior segment will reveal... ...Punctate epithelial keratopathy ...Sub-conj heme *How does epidemic keratoconjunctivitis present?* In stages...

Stage 1: Upper respiratory tract infection

Stage 2: Severe follicular conjunctivitis

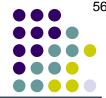
Stage 3. Subopitholial infiltrate

Thygeson's EBMD Sub-epi deposits Dendrites!

Adenovirus

- Thygeson's
- EBMD
- Subepithelial deposits





Follicular conjunctivitis

Mild disease, rarely seen

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Looks like the flu

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Adenovirus

- Thygeson's
- EBMD
- Subepithelial deposits

Stage 1: Upper respiratory tract infection

Stage 2: Severe follicular conjunctivitis

Stage 3: Subopithelial infiltra

hygeson's EBMD Sub-epi deposits **Dendrites!**





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Mild disease, rarely seen

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Looks like the flu

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What will pts complain of at this stage? Tearing, foreign-body sensation, photophobia

Slit-lamp exam of the anterior segment will reveal... ...Punctate epithelial keratopathy ...Sub-conj heme ...Conjunctival membranes

What nonocular sign might be found?

- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

How does epidemic keratoconjunctivitis present? In stages...

Stage 1: Upper respiratory tract infection

Stage 2: Severe follicular conjunctivitis

Stage 3: Subopithelial infiltrate

Thygeson's EBMD Sub-epi deposits Dendrites!





Follicular conjunctivitis

Mild disease, rarely seen

Pharyngoconjunctival Fever (PCF)

Looks like the flu

Epidemic Keratoconjunctivitis (EKC)

Bilateral follicular conj'itis + punctate keratopathy + petechial hemorrhages + conj membranes + lymphadenopathy

What will pts complain of at this stage? Tearing, foreign-body sensation, photophobia

Slit-lamp exam of the anterior segment will reveal... ... Punctate epithelial keratopathy ...Sub-conj heme ...Conjunctival membranes

What nonocular sign might be found? Preauricular lymphadenopathy

- Adenovirus
- Thygeson's
- EBMD
- Subepithelial deposits

Stage 1: Upper respiratory tract infection

Stage 2: Severe follicular conjunctivitis Stage S. Subepithelial infiltrat

hygeson's EBMD Sub-epi deposits **Dendrites!**





Dendritifor

HSV

The strength-of-association with dendritiform lesions is not the same for all of these conditions. For which three conditions is the association especially weak?

HSV

Acanthamoeba

Topical mode

Acanthamoeba What is the complete name of the condition listed here as simply 'Thygeson's'?



Subepithelial deposits

Dendrites!

I hygeson's

EBMD





Dendritifor

• HSV

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Acanthamoeba

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Topical mode

What is the complete name of the condition listed here as simply 'Thygeson's'? Thygeson's superficial punctate keratitis

Adenovirus Thygeson's superficial punctate keratitis EBMD





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Acanthamoeba

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What do Thygeson's pts c/o?

Adenovirus
 Adenovirus
 Thygeson's superficial punctate keratitis
 EBMD
 Denomes!





Dendritifor

HSV

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Acanthamoeba

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What do Thygeson's pts c/o? Photophobia and foreign-body sensation

I hygeson's

Acanthamoeba

Adenovirus Thygeson's superficial punctate keratitis





Dendritifor

• HSV

The strength-of-association with dendritiform lesions is not the same for all of these conditions. For which three conditions is the association especially **weak**?

Acanthamoeba

Topical mode

HSV Acanthamoeba

What is the complete name of the condition listed here as simply 'Thygeson's'? Thygeson's superficial punctate keratitis

What do Thygeson's pts c/o? Photophobia and foreign-body sensation

What is the classic corneal finding on exam (hint: it's **not** dendritiform lesions)?

Adenovirus
 Thygeson's superficial punctate keratitis
 EBMD





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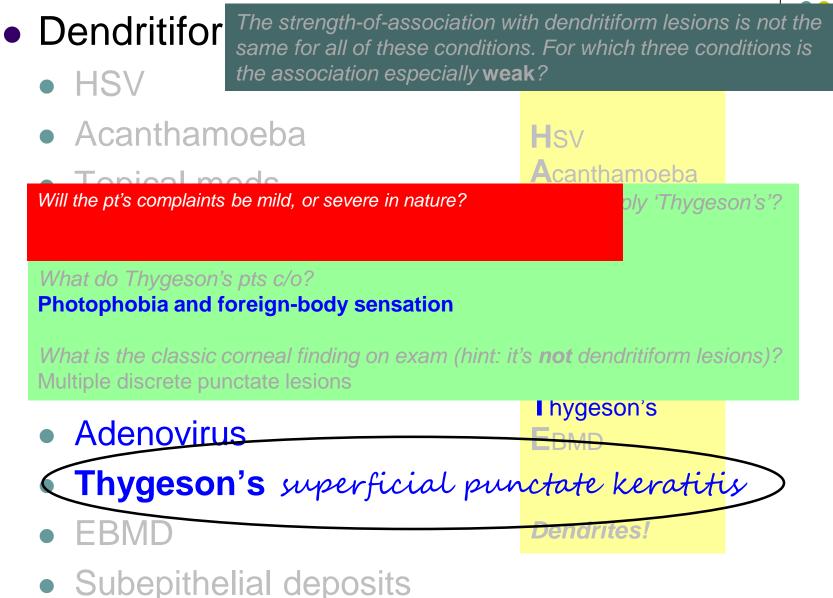
I hygeson's



- Subepithelial deposits











Dendritifor

HSV

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HSV

Acanthamoeba

Topical mode

Will the pt's complaints be mild, or severe in nature? Like those with Acanthamoeba keratitis, Thygeson's pts will complain of pain that seems out of proportion to the clinical picture

What do Thygeson's pts c/o?

Adenovirus

Photophobia and foreign-body sensation

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I hygeson's

Dendrite

Acanthamoeba

oly 'Thygeson's'?

Thygeson's superficial punctate keratitis

• EBMD