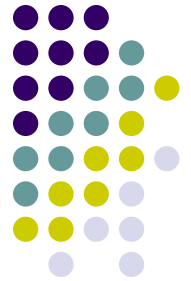
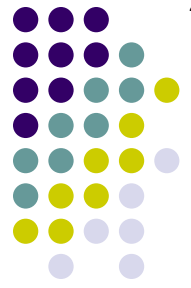


Q

What does the term
Entropion mean?

Ectropion





A

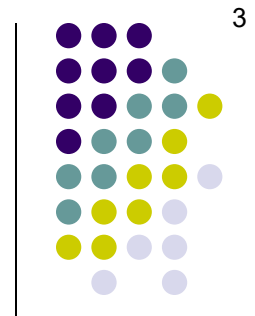
What does the term **Entropion** mean?
It means the eyelid margin is turning **inward**

Ectropion

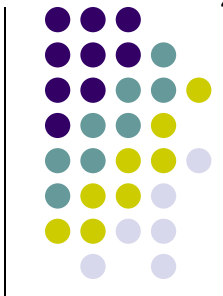


Q

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What does the term
Ectropion mean?



A

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What does the term **Ectropion** mean?
It means the eyelid margin is turning **outward**



Q

The Plastics book identifies six general causes of entropion and/or ectropion. What are they? (Note that while most apply to both entropion and ectropion, a few apply only to one or the other.)

Entropion **Categories** *Ectropion*

?

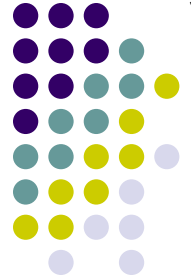
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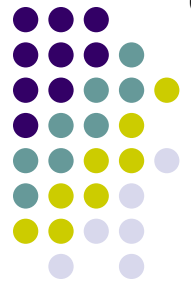
?

?

?

?





A

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Entropion

Categories

Ectropion

Congenital

Involuntional

Paralytic

Cicatricial

Mechanical

Acute Spastic

Q

Of the six, which can result in entropion?

Entropion

?

?

?

?

?

?

Categories

Congenital

Involutional

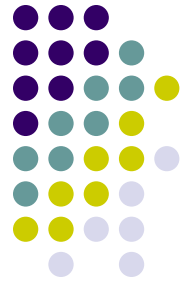
Paralytic

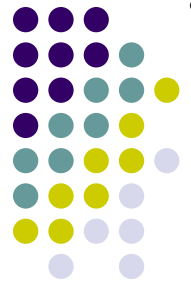
Cicatricial

Mechanical

Acute Spastic

Ectropion





A

Of the six, which can result in entropion?

Entropion

Congenital

Involucional

Cicatricial

Acute Spastic

Categories

Congenital

Involucional

Paralytic

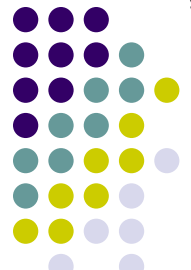
Cicatricial

Mechanical

Acute Spastic

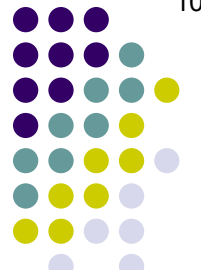
Ectropion

Q



Of the six, which can result in ectropion?

<i>Entropion</i>	<i>Categories</i>	<i>Ectropion</i>
Congenital	Congenital	?
Involucional	Involucional	?
	Paralytic	?
Cicatricial	Cicatricial	?
	Mechanical	?
Acute Spastic	Acute Spastic	?



A

Of the six, which can result in ectropion?

Entropion

Congenital

Involucional

Cicatricial

Acute Spastic

Categories

Congenital

Involucional

Paralytic

Cicatricial

Mechanical

Acute Spastic

Ectropion

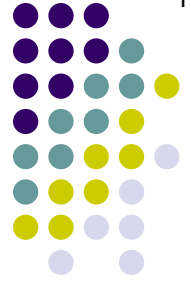
Congenital

Involucional

Paralytic

Cicatricial

Mechanical



Cicatricial Entropion

Entropion

Categories

Ectropion

Congenital

Congenital

Congenital

Involucional

Involucional

Involucional

Let's drill down on cicatricial changes

Cicatricial

Cicatricial

Cicatricial

Mechanical

Mechanical

Acute Spastic

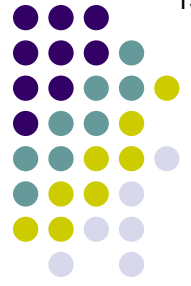
Acute Spastic

Q

Cicatricial E_nctropion



*In a nutshell, what is the pathogenesis of...
--Cicatricial **ectropion**?*

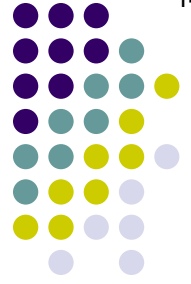


A

Cicatricial E_n^C tropion

In a nutshell, what is the pathogenesis of...

--Cicatricial **ectropion**? Scarring of the lid's anterior lamella causes it (the anterior lamella) to shorten, which in turn causes the lid margin to turn outward



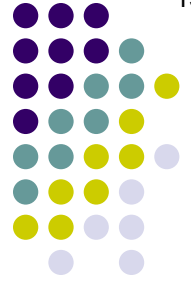
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--Cicatricial **entropion**?



A

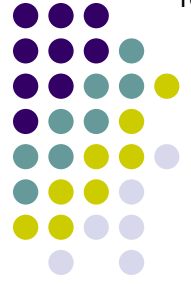
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Cicatricial Entropion



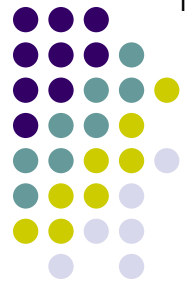
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Note this subtle-but-crucial difference!

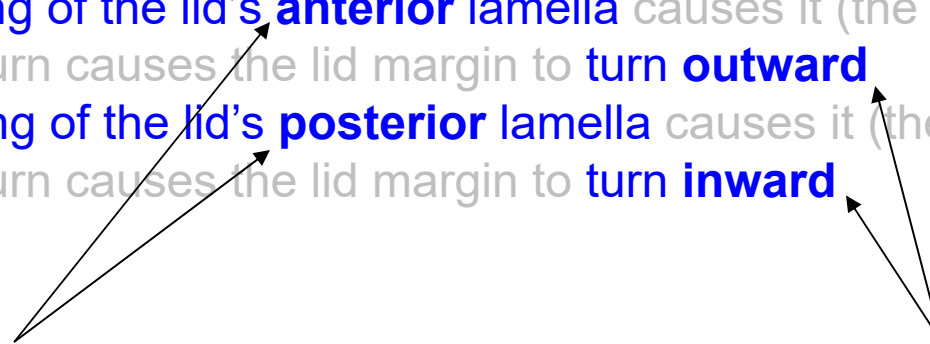
Cicatricial Entropion



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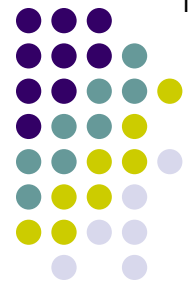
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Note this subtle-but-crucial difference!

This one too!



Q

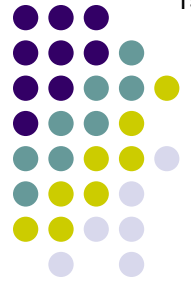
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'Anterior lamella'? 'Posterior lamella'? How many layers does an eyelid have?



Q/A

Cicatricial E_n^c ntropion

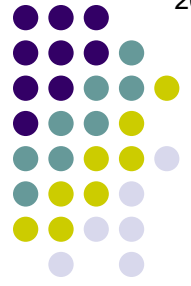
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A

Cicatricial E_nctropion

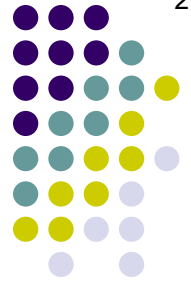
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Cicatricial E_nctropion

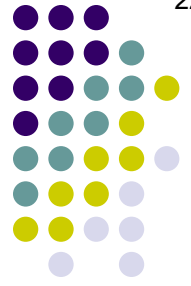
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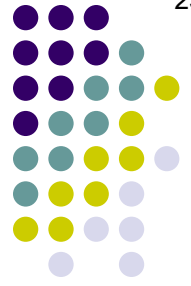
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What structures comprise each lamella?

Anterior: ?

Posterior:



A

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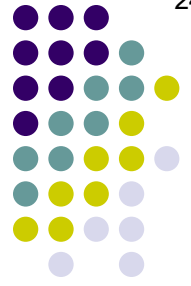
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Anterior: **Skin** and **orbicularis muscle**

Posterior:



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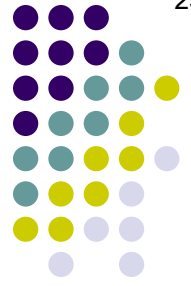
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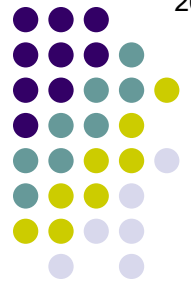
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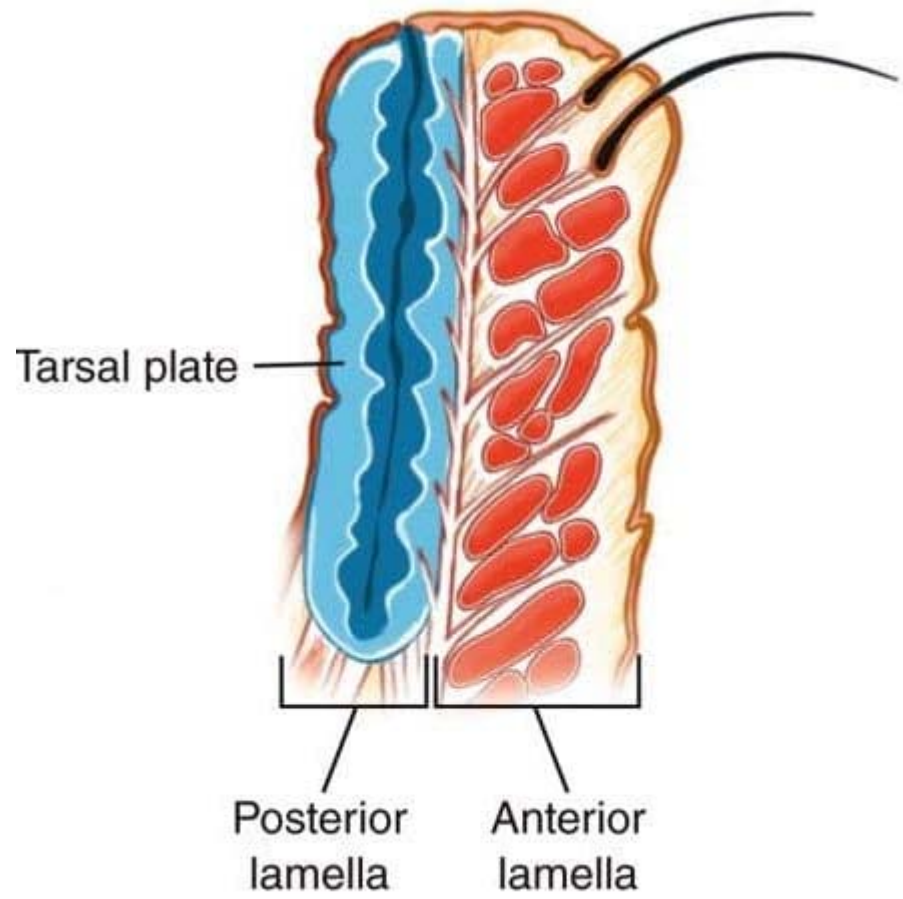
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Posterior: **Tarsal plate** and **conjunctiva**



Cicatricial Entropion



Eyelid lamellae



Q

Cicatricial Entropion

What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations?

anterior lamella

posterior lamella

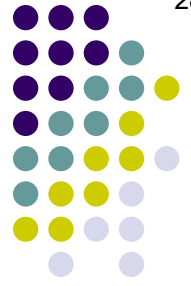
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at the level of the tarsal plates

What structures comprise each lamella?

Anterior: **Skin** and **orbicularis muscle**

Posterior: **Tarsal plate** and **conjunctiva**



Cicatricial Entropion

A

What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations?

Three: Anterior, **middle** and posterior

anterior lamella

posterior lamella

causes it (the anterior eyelid margin to turn outward) causes it (the posterior eyelid margin to turn inward)

at the level of the tarsal plates

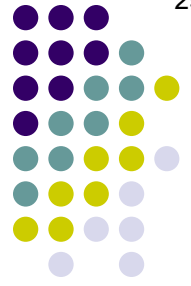
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What structures comprise each lamella?

Anterior: Skin and orbicularis muscle

Posterior: Tarsal plate and conjunctiva

← Middle lamella



Cicatricial Entropion

Q

What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations?

Three: Anterior, **middle** and posterior

What structures comprise each of these three lamellae beyond the tarsal plates?

--The **anterior lamella**...?



--

middle lamella

--

posterior lamella

anterior lamella causes it (the anterior eyelid margin) to turn outward
posterior lamella causes it (the posterior eyelid margin) to turn inward

How many does an eyelid have?
The count depends on whether it's an upper vs lower lid, as well as the distance from the margin at which one does the counting). However, from a surgical perspective, **at the level of the tarsal plates** it's useful to think of them as having two--an anterior lamella, and a posterior lamella.

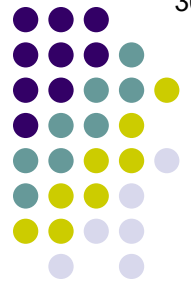
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What structures comprise each lamella?

Anterior: Skin and orbicularis muscle?

Posterior: Tarsal plate and conjunctiva

Middle lamella



Cicatricial Entropion

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What structures comprise each of these three lamellae beyond the tarsal plates?

--The **anterior lamella**...doesn't change; it's still skin and orbicularis

-- middle lamella

-- posterior lamella

anterior lamella

posterior lamella

causes it (the anterior eyelid margin to turn outward causes it (the posterior eyelid margin to turn inward

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Anterior: Skin and orbicularis muscle!

Posterior: Tarsal plate and conjunctiva

Middle lamella



Cicatricial Entropion

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-- middle lamella

--Beyond the location of the tarsal plate, the plate itself isn't part of the posterior lamella (duh), so in these areas the **posterior lamella**...?

anterior lamella

posterior lamella

causes it (the anterior eyelid margin) to turn outward
causes it (the posterior eyelid margin) to turn inward

Next

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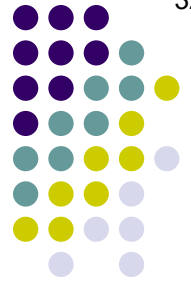
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Anterior: Skin and orbicularis muscle!

Posterior: Tarsal plate and conjunctiva?

Middle lamella



Cicatricial Entropion

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beyond the tarsal plates

What structures comprise each lamella?

Anterior: Skin and orbicularis muscle!

Posterior: Tarsal plate and conjunctiva!

Middle lamella

anterior lamella

posterior lamella

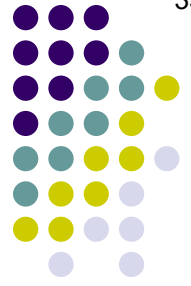
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Cicatricial Entropion

Q

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Three: Anterior, **middle** and posterior

What structures comprise each of these three lamellae beyond the tarsal plates?

--The **anterior lamella**...doesn't change; it's still skin and orbicularis

--As for the newly-arisen **middle lamella**...?

--Beyond the location of the tarsal plate, the plate itself isn't part of the posterior lamella (duh), so in these areas the **posterior lamella**... consists only of the conj

anterior lamella

Finally!

causes it (the anterior lid margin) to turn outward
causes it (the posterior lid margin) to turn inward

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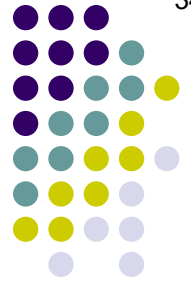
beyond the tarsal plates

What structures comprise each lamella?

Anterior: Skin and orbicularis muscle!

Posterior: Tarsal plate and conjunctiva!

← Middle lamella: ?



Q/A

Cicatricial Entropion

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--As for the newly-arisen **middle lamella**...it is composed of the two words and two diff words

--Beyond the location of the tarsal plate, the plate itself isn't part of the posterior lamella (duh), so in these areas the **posterior lamella**... consists only of the conj



as well as the distance from the margin at which one does the counting). However, from a surgical perspective, **at the level of the tarsal plates** it's useful to think of them as having two--an anterior lamella, and a posterior lamella.

beyond the tarsal plates

What structures comprise each lamella?

Anterior: Skin and orbicularis muscle!

Posterior: Tarsal plate and conjunctiva!

← Middle lamella: ?



A

Cicatricial Entropion

What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations?

Three: Anterior, **middle** and posterior

What structures comprise each of these three lamellae beyond the tarsal plates?

--The **anterior lamella**...doesn't change; it's still skin and orbicularis

--As for the newly-arisen **middle lamella**...it is composed of the eyelid retractors and orbital septum

--Beyond the location of the tarsal plate, the plate itself isn't part of the posterior lamella (duh), so in these areas the **posterior lamella**... consists only of the conj

anterior lamella

posterior lamella

causes it (the anterior eyelid margin to turn outward causes it (the posterior eyelid margin to turn inward

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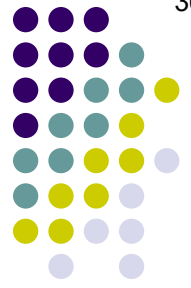
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What structures comprise each lamella?

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← Middle lamella: Eyelid retractors, orbital septum



Q

Cicatricial Entropion

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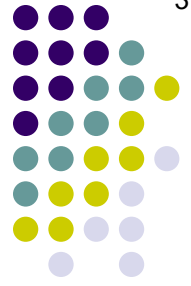
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anterior lamella

posterior lamella

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beyond the tarsal plates

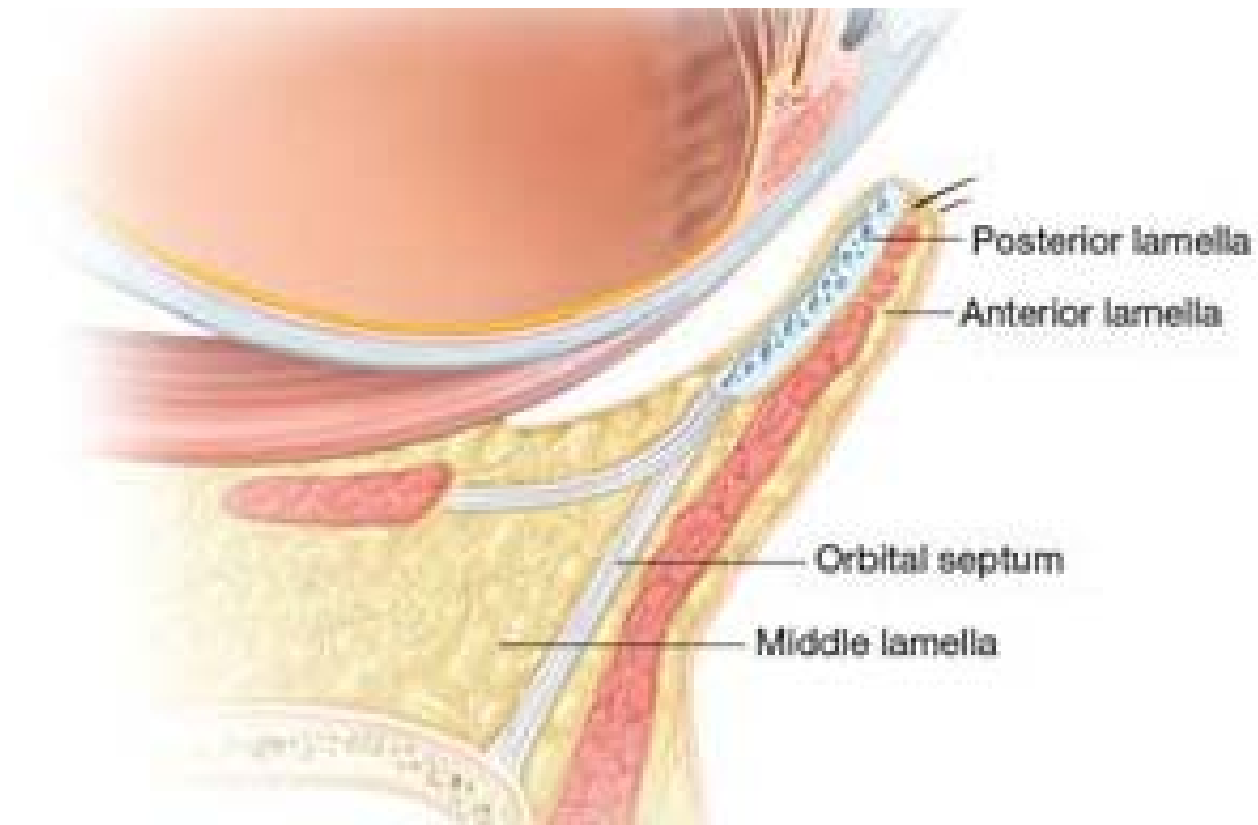
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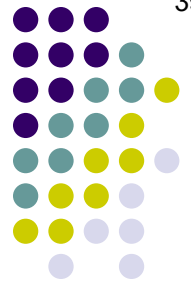
Posterior: Tarsal plate and conjunctiva!

← Middle lamella: Eyelid retractors, orbital septum, eyelid fat pads (lower lid)

Cicatricial Entropion



Eyelid lamellae below the tarsal plate in the lower lid



Cicatricial Ectropion

Entropion

Categories

Ectropion

Congenital

Congenital

Congenital

Involucional

Let's look at cicatricial ectropion in more detail

Paralytic

Paralytic

Cicatricial

Cicatricial

Cicatricial

Mechanical

Mechanical

Acute Spastic

Acute Spastic



Q

Cicatricial Ectropion

- Common causes of cicatricial **ectropion**:

-
-
-
-
-
-



A

Cicatricial Ectropion

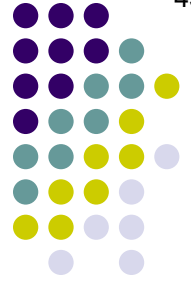
- Common causes of cicatricial **ectropion**:
 - Trauma
 - Burn
 - Iatrogenic
 - Actinic skin changes
 - Inflammatory disease
 - Rosacea



Cicatricial Ectropion



Cicatricial ectropion



Q

Cicatricial Ectropion

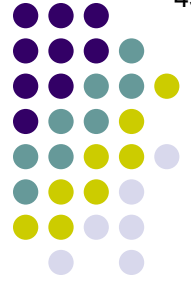
- Managing cicatricial ectropion of the lower lid involves three steps:
 - 1) **Release/relax...** *(finish the thought)*
 - 2)
 - 3)



A

Cicatricial Ectropion

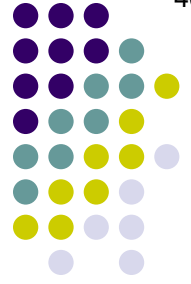
- Managing cicatricial ectropion of the lower lid involves three steps:
 - 1) **Release/relax...**the traction caused by the cicatrix
 - 2)
 - 3)



Q

Cicatricial Ectropion

- Managing cicatricial ectropion of the lower lid involves three steps:
 - 1) **Release/relax**...the traction caused by the cicatrix
 - 2) **Lengthen**... (*ditto*)
 - 3)



A

Cicatricial Ectropion

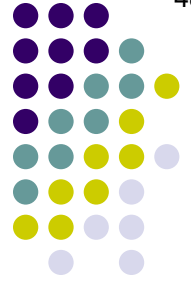
- Managing cicatricial ectropion of the lower lid involves three steps:
 - 1) **Release/relax**...the traction caused by the cicatrix
 - 2) **Lengthen**...the lid *vertically* (with a FTSG) (full-thickness skin graft)
 - 3)



Q

Cicatricial Ectropion

- Managing cicatricial ectropion of the lower lid involves three steps:
 - 1) **Release/relax**...the traction caused by the cicatrix
 - 2) **Lengthen**...the lid *vertically* (with a FTSG)
 - 3) **Shorten**...*(ditto)*



A

Cicatricial Ectropion

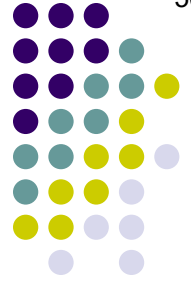
- Managing cicatricial ectropion of the lower lid involves three steps:
 - 1) **Release/relax**...the traction caused by the cicatrix
 - 2) **Lengthen**...the lid *vertically* (with a FTSG)
 - 3) **Shorten**...the lid *horizontally* (with a lateral tarsal strip)



Cicatricial Ectropion



Cicatricial ectropion: Pre- and post-repair



Q

Cicatricial Ectropion

- Managing cicatricial ectropion of the ^{upper}~~lower~~ lid involves ~~three~~[?] steps:
 - 1) **Release/relax**...the traction caused by the cicatrix
 - 2) **Lengthen**...the lid *vertically* (with a FTSG)
 - 3) **Shorten**...the lid *horizontally* (with a lateral tarsal strip)

Which of these steps are involved in repair of UPPER lid cicatricial ectropion?

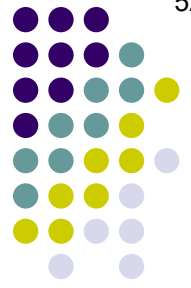


A

Cicatricial Ectropion

- Managing cicatricial ectropion of the ^{upper}~~lower~~ lid involves ^{two}~~three~~ steps:
 - 1) **Release/relax**...the traction caused by the cicatrix
 - 2) **Lengthen**...the lid *vertically* (with a FTSG)
 - ~~3) **Shorten**...the lid *horizontally* (with a lateral tarsal strip)~~

Which of these steps are involved in repair of UPPER lid cicatricial ectropion?
 1 and 2, but **not** 3: The upper lid generally does not suffer horizontal laxity, so tightening is not required



Cicatricial Entropion

Entropion

Congenital

Categories

Congenital

Entropion

Congenital

Now let's look at cicatricial entropion

Involuntal

Involuntal

Paralytic

Paralytic

Cicatricial

Cicatricial

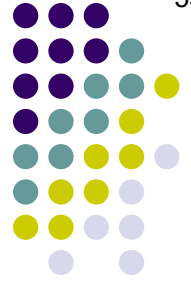
Cicatricial

Mechanical

Mechanical

Acute Spastic

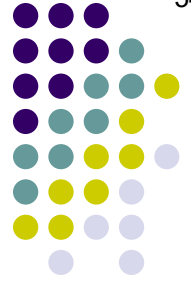
Acute Spastic



Q

Cicatricial Entropion

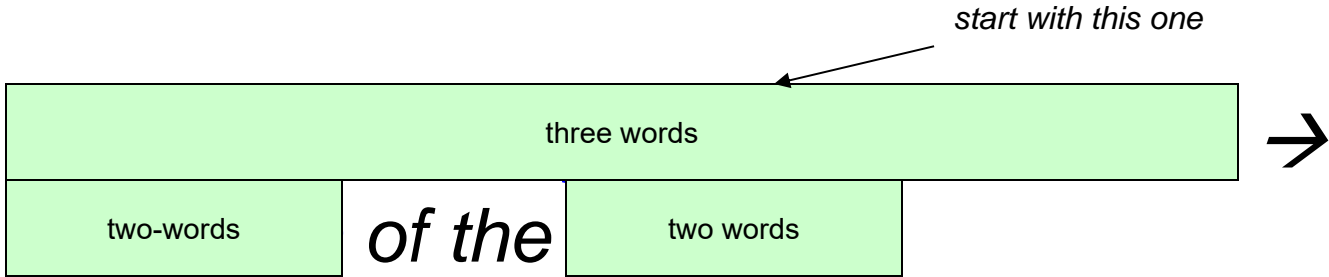
- In another nutshell, what is the pathogenesis of cicatricial entropion?



Q/A

Cicatricial Entropion

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Q/A

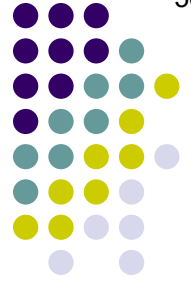
Cicatricial Entropion

- In another nutshell, what is the pathogenesis of cicatricial entropion?

Vertical tarsoconjunctival contracture →



next
↗



Q/A

Cicatricial Entropion

- In another nutshell, what is the pathogenesis of cicatricial entropion?

Vertical tarsoconjunctival contracture →
in-rotation of the two words

finally →

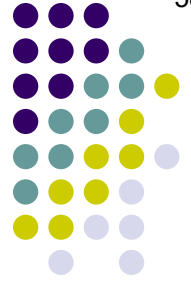


A

Cicatricial Entropion

- In another nutshell, what is the pathogenesis of cicatricial entropion?

Vertical tarsoconjunctival contracture →
in-rotation of the lid margin



Q

Cicatricial Entropion

- In another nutshell, what is the pathogenesis of cicatricial entropion? **How does this lead to cornea problems?**

Vertical tarsoconjunctival contracture →

in-rotation of the *lid margin* →

two-words *of the* one word → cornea problems

answer these simultaneously



A

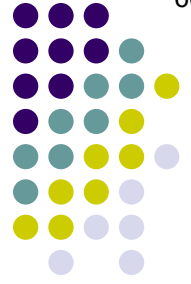
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Vertical tarsoconjunctival contracture →

in-rotation of the *lid margin* →

in-rotation of the *eyelashes* → cornea problems



Q

Cicatricial Entropion

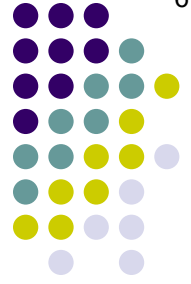
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Vertical tarsoconjunctival contracture →

in-rotation of the lid margin →

in-rotation of the eyelashes → cornea problems

'In-rotation of the eyelashes'? Why not just say 'trichiasis'?



A

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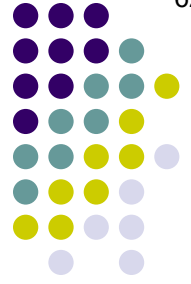
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Because trichiasis is not present



Q

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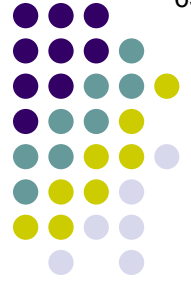
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*Huh? But the lashes are touching the cornea--isn't that the **definition** of trichiasis?*



A

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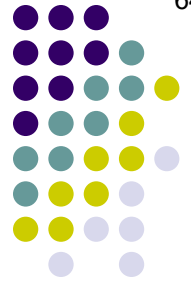
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A

Cicatricial Entropion

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 in-rotation of the lid margin →

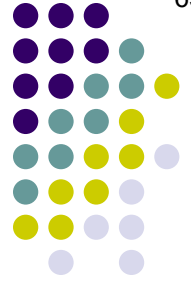
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Cicatricial Entropion

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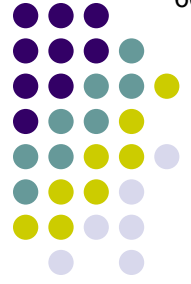
in-rotation of the eyelashes → cornea problems

'In-rotation of the eyelashes'? Why not just say 'trichiasis'?

Because trichiasis is not present

Technically incorrect, sure. But in fairness, many clinicians aren't this persnickety about the term *trichiasis*--and neither are the BCSC books. So this is not the hill you want to die on when taking the Boards.

a normally-positioned lid margin. In any form of entropion (ie, not just cicatricial), the position of the lid margin is rotated inward, and therefore **not** normal. Thus, the term *trichiasis*, while often employed, **is technically incorrect.**



Q

Cicatricial Entropion

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~~in-rotation of the lid margin~~ →

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How does distichiasis differ from trichiasis?

'In-
Be

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Q/A

Cicatricial Entropion

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Vertical tarsoconjunctival contracture →

~~in-rotation of the lid margin~~ →

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How does distichiasis differ from trichiasis?

In trichiasis, the lashes are growing from their usual location (albeit in an abnormal direction), whereas in distichiasis, lashes are growing from

three words

Hint: But the lashes are touching the cornea—isn't that the definition of trichiasis?
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A

Cicatricial Entropion

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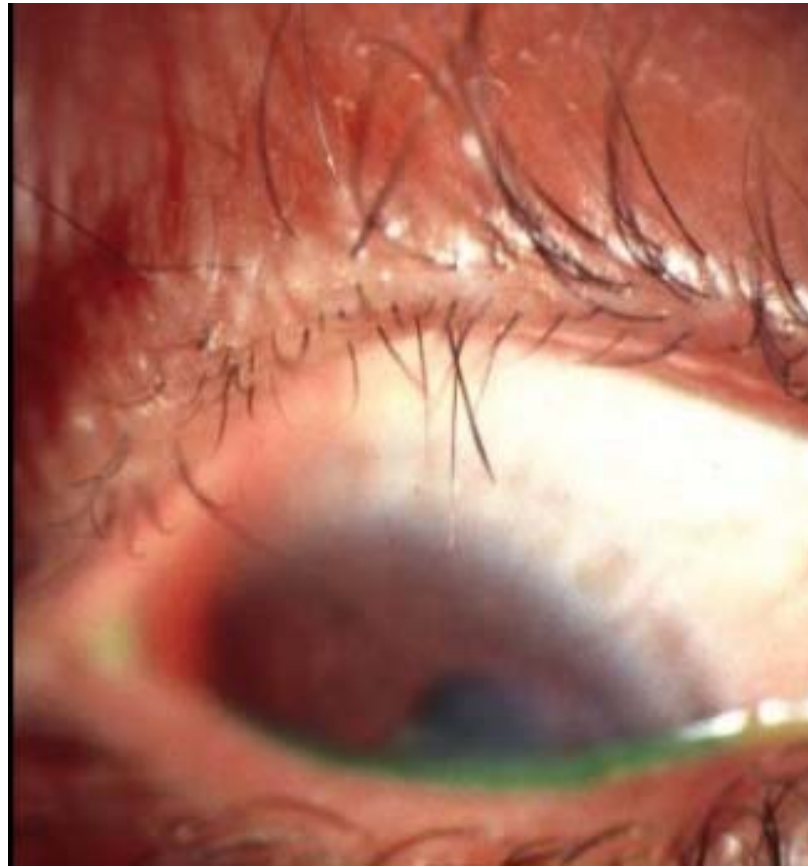
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Cicatricial Entropion



Distichiasis: Lashes arising from MG orifices



Q

Cicatricial Entropion

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Vertical tarsoconjunctival contracture →

~~in-rotation of the lid margin~~ →

in-rotation of the eyelashes → cornea problems

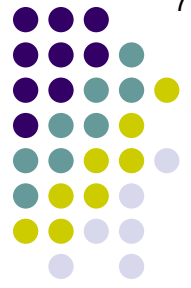
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Is distichiasis congenital, or acquired?

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A

Cicatricial Entropion

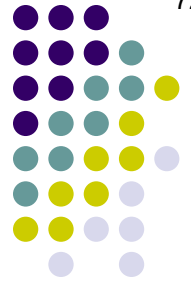
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Is distichiasis congenital, or acquired?
 It can be either

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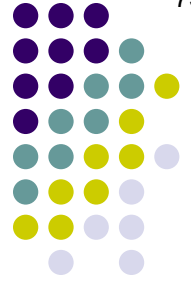
Q

Cicatricial Entropion

- In another nutshell, what is the pathogenesis of **cicatricial entropion**? How does this lead to cornea problems?

Vertical tarsoconjunctival contracture →
in-rotation of the lid margin →
in-rotation of the eyelashes → cornea problems

*When evaluating cicatricial entropion, for what crucial question **must** an adequate answer be determined?*



A

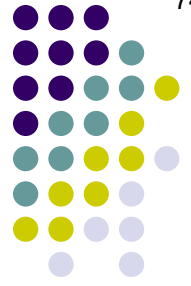
Cicatricial Entropion

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*When evaluating cicatricial entropion, for what crucial question **must** an adequate answer be determined?*

That question is: What is the underlying etiology of the cicatrix—that is, **what caused the scarring in the first place?**



Q

Cicatricial Entropion

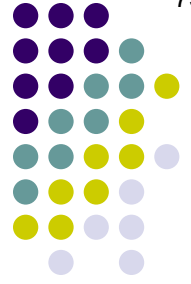
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What is the DDX for cicatricial entropion?



Cicatricial Entropion

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What is the DDX for cicatricial entropion?

Glad you asked...

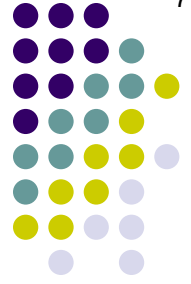


Q

Cicatricial Entropion

- Common causes of cicatricial **entropion**:

-
-
-
-
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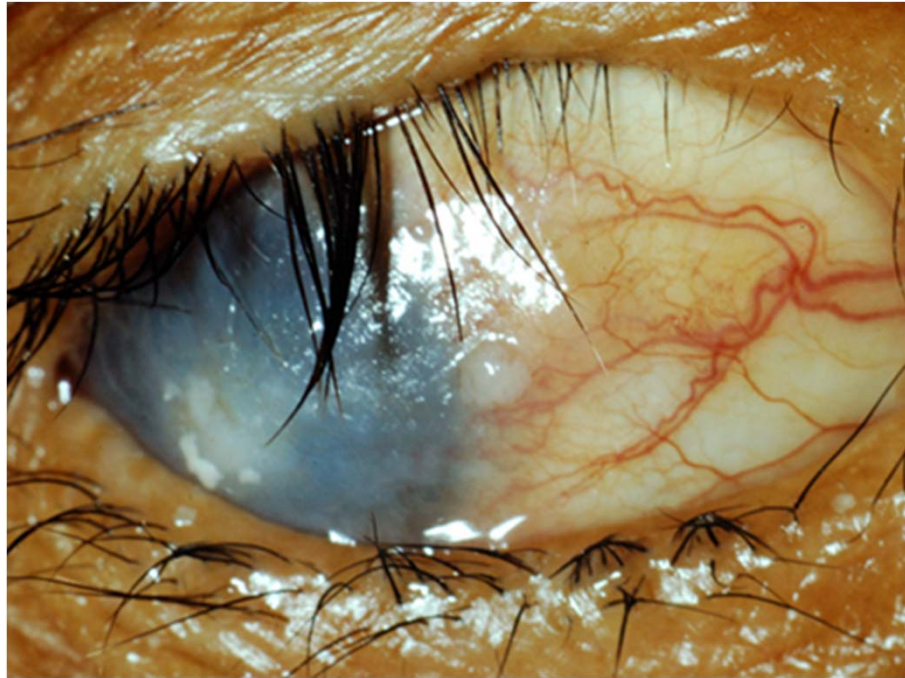
A

Cicatricial Entropion

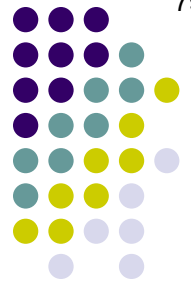
- Common causes of cicatricial **entropion**:
 - Ocular cicatricial pemphigoid (OCP)
 - Stevens-Johnson syndrome (SJS)
 - Trachoma
 - Trauma
 - Sarcoid
 - Iatrogenic



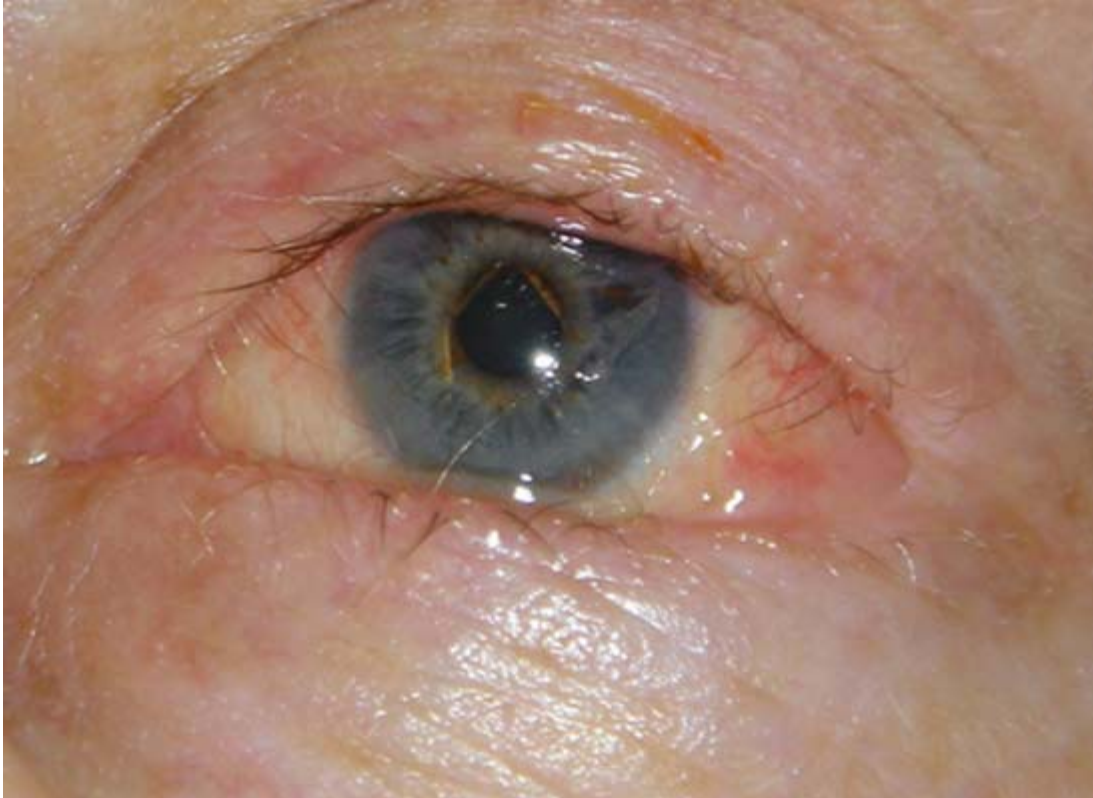
Cicatricial Entropion



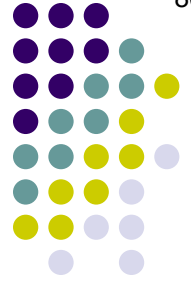
Cicatricial entropion



Cicatricial Entropion



Cicatricial entropion in OCP



Cicatricial Entropion

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*If the cause is inflammatory, make sure that process is **completely quiescent** before attempting repair!*

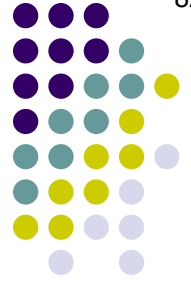


Q

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What is the causative organism in trachoma?

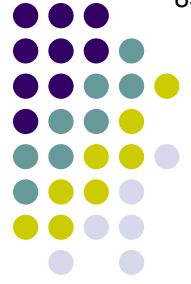


Q/A

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C trachomatis serotypes

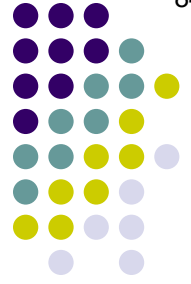


A

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What is the causative organism in trachoma?
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Q

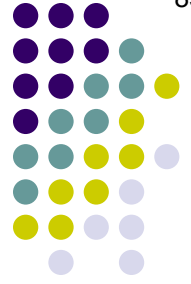
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Where does trachoma rank as a cause of blindness worldwide?



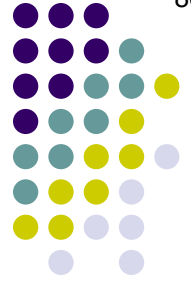
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Where does trachoma rank as a cause of blindness worldwide?
It is the most common cause of infectious blindness



Q

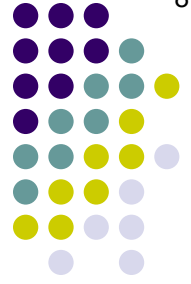
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Why are they blind, ie, what ocular structure is responsible?



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 The cornea—it is scarred, and covered by a pannus



Q

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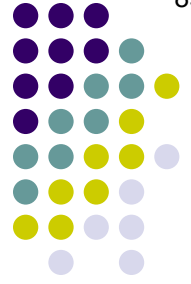
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In a nutshell, what sequence of events leads to corneal opacification?



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Cicatricial Entropion

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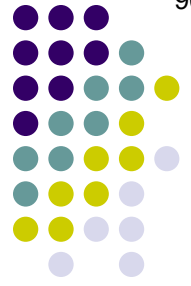
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In a nutshell, what sequence of events leads to corneal opacification?
 Repeated infections produce scarification of the superior palpebral conj, and the subsequent cicatricial entropion leads to severe trichiasis which decimates the corneal surface



Q

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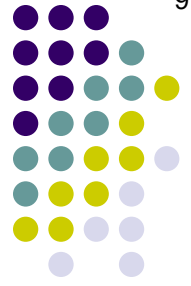
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Where in the world is trachoma prevalent?



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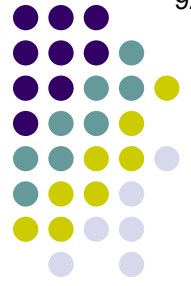
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Where in the world is trachoma prevalent?
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United States
 Where in the ~~world~~ is trachoma prevalent?
 The Middle East, South Asia, Africa

In the US, which ethnic group is most likely to be affected?



A

Cicatricial Entropion

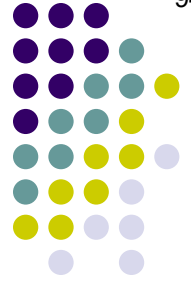
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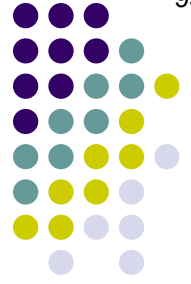
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Is trachoma primarily a follicular, or papillary conjunctivitis?



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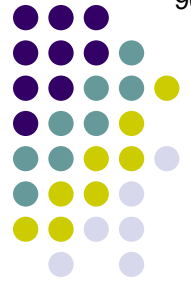
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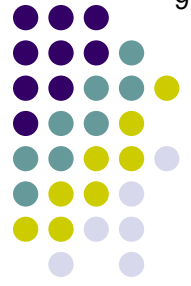
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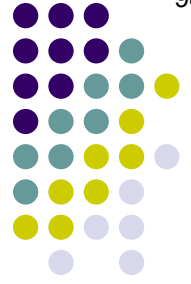
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Where do the follicles tend to occur?
 On the superior palpebral conj, and the superior limbal region



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When limbal follicles scar, what classic eponymous exam finding results?

Is trachoma
 Follicles

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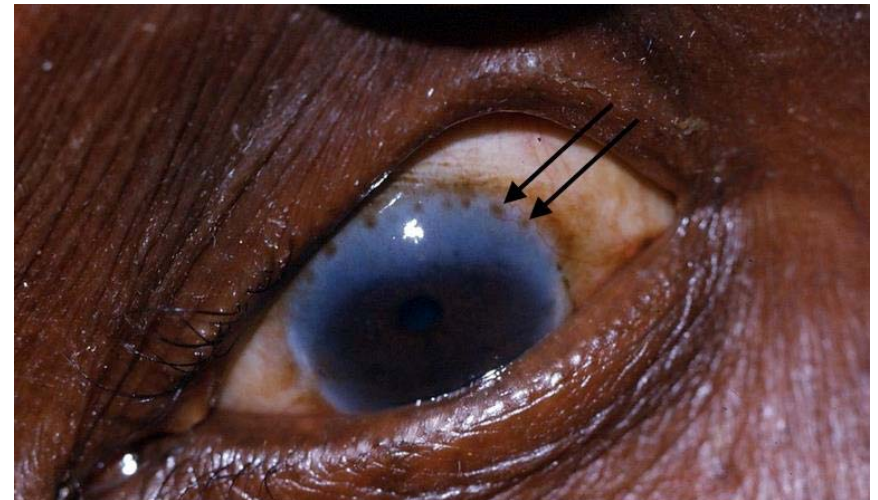
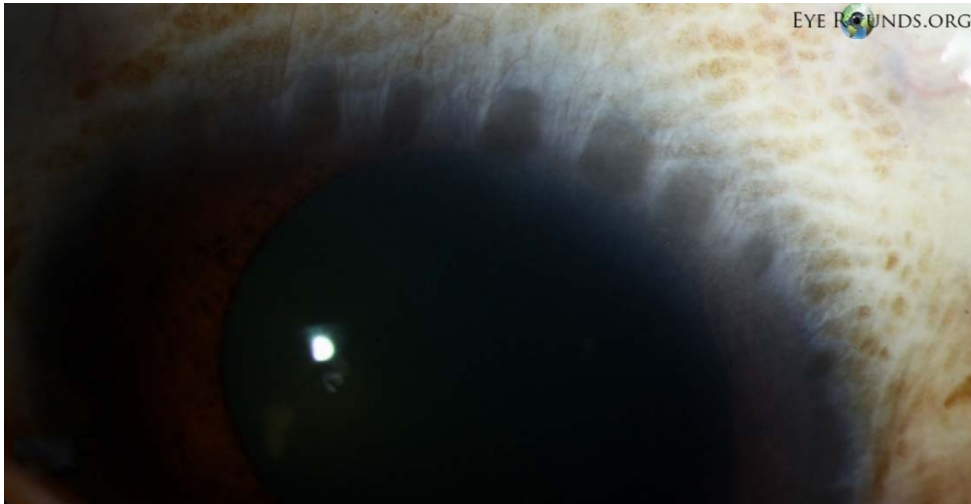
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 The Herbert's pits

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Cicatricial Entropion



Trachoma: Herbert's pits



Q

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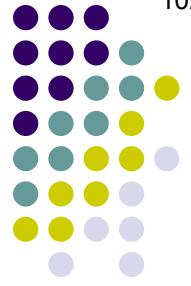
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When upper-lid tarsal follicles scar, what classic eponymous exam finding results?

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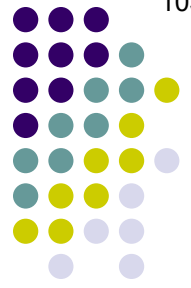
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 Art's line

Where do the follicles tend to occur?
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Cicatricial Entropion



Trachoma: Arlt's line



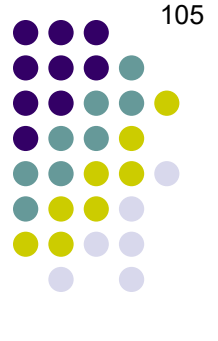
Q

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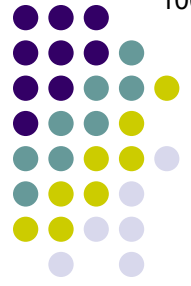
- How would you correct cicatricial entropion in cases of:
 - **Mild disease:**
 - *Moderate disease:*
 - *Severe disease:*

A

Cicatricial Entropion



- How would you correct cicatricial entropion in cases of:
 - **Mild disease: Anterior lamellar resection**
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Q

Cicatricial Entropion

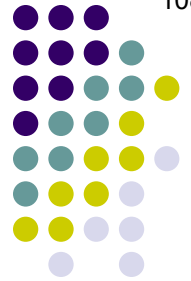
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Cicatricial Entropion



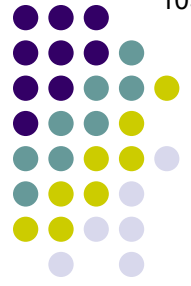
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Q

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- How would you correct cicatricial entropion in cases of:
 - *Mild disease*: Anterior lamellar resection
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