- Managing *anterior* blepharitis
  - Staph disease
  - maneuver
Managing *anterior* blepharitis

- Staph disease
  - Lid hygiene (We’ll unpack this term later in the slide-set)
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider medicament to decrease
    med tx goal

med
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load

(ung = pharmacy-speak for ‘ointment’)
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - finding on SL exam
    - another SL exam finding
Managing *anterior* blepharitis

- **Staph disease**
  - **Lid hygiene**
  - Consider *antibiotic ung* to decrease **bacterial load**
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis
Managing *anterior* blepharitis

- **Staph disease**
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - **Staph marginal keratitis**

*What is the classic clinical appearance of Staph marginal keratitis?*
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

What is the classic clinical appearance of Staph marginal keratitis?
Peripheral focal corneal opacities with an intervening clear space between the lesion and the limbus.
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

What is the classic clinical appearance of Staph marginal keratitis?
Peripheral focal corneal opacities with an intervening clear space between the lesion and the limbus

Do they tend to be in a particular portion of the cornea?
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

What is the classic clinical appearance of Staph marginal keratitis?
Peripheral focal corneal opacities with an intervening clear space between the lesion and the limbus

Do they tend to be in a particular portion of the cornea?
Yes, the inferior portion
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

What is the classic clinical appearance of Staph marginal keratitis?
Peripheral focal corneal opacities with an intervening clear space between the lesion and the limbus

Do they tend to be in a particular portion of the cornea?
Yes, the inferior portion

Are they ulcers crawling with S aureus bugs?
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

What is the classic clinical appearance of Staph marginal keratitis?
Peripheral focal corneal opacities with an intervening clear space between the lesion and the limbus

Do they tend to be in a particular portion of the cornea?
Yes, the inferior portion

Are they ulcers crawling with S aureus bugs?
No, they are sterile inflammatory infiltrates
Managing *anterior* blepharitis

- **Staph disease**
  - **Lid hygiene**
  - Consider *antibiotic ung* to decrease *bacterial load*
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis
Managing **anterior blepharitis**

- **Staph disease**
  - **Lid hygiene**
  - Consider **antibiotic ung** to decrease **bacterial load**
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

- **Seborrheic disease**
Managing **anterior blepharitis**

- **Staph disease**
  - Lid hygiene
  
  *Which is the more common cause of anterior blepharitis?*

- Seborrheic disease

Consider antibiotic ung to decrease bacterial load if present:

- Phlyctenules
- Staph marginal keratitis

- Staph disease

- Seborrheic disease
Managing anterior blepharitis

- **Staph disease**
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load if present:
    - Phlyctenules
    - Staph marginal keratitis
  - Consider steroids for the following if present:
    - Seborrheic disease

Which is the more common cause of anterior blepharitis? Staph
Managing anterior blepharitis

Staph disease

Which is the more common cause of anterior blepharitis? Staph

Which staph species is the most common culprit?
- Staph marginal keratitis

Lid hygiene

Consider antibiotic ung to decrease bacterial load

Consider steroids for the following if present:
- Phlyctenules
- Staph marginal keratitis

Seborrheic disease
A

- Managing anterior blepharitis
  - Staph disease
    - Lid hygiene
    - Which is the more common cause of anterior blepharitis? Staph
    - Which staph species is the most common culprit? S. aureus
      - Staph marginal keratitis
  - Seborrheic disease
Managing anterior blepharitis

- **Staph disease**
  - **Lid hygiene**
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

- **Seborrheic disease**
  - maneuver/goal
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

- Seborrheic disease
  - Lid hygiene
Managing **anterior blepharitis**

- **Staph disease**
  - Lid hygiene
  - Consider **antibiotic ung** to decrease **bacterial load**
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

- **Seborrheic disease**
  - Lid hygiene
  - Consider a brief course of **med**
Managing anterior blepharitis

Staph disease

- Lid hygiene
- Consider antibiotic ung to decrease bacterial load
- Consider steroids for the following if present:
  - Phlyctenules
  - Staph marginal keratitis

Seborrheic disease

- Lid hygiene
- Consider a brief course of steroids
Managing *anterior* blepharitis

- **Staph disease**
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

- **Seborrheic disease**
  - Lid hygiene
  - Consider a brief course of steroids
  - Treat concurrent disease
Managing *anterior* blepharitis

- **Staph disease**
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

- **Seborrheic disease**
  - Lid hygiene
  - Consider a brief course of steroids
  - Treat concurrent scalp disease
Managing anterior blepharitis

Staph disease

- Lid hygiene
- Consider antibiotic ung to decrease bacterial load
- Consider steroids for the following if present:
  - Phlyctenules
  - Staph marginal keratitis

Seborrheic disease

- Lid hygiene
- Consider a brief course of steroids
- Treat concurrent scalp disease
- Treat component if present
Managing anterior blepharitis

- Staph disease
  - Lid hygiene
  - Consider antibiotic ung to decrease bacterial load
  - Consider steroids for the following if present:
    - Phlyctenules
    - Staph marginal keratitis

- Seborrheic disease
  - Lid hygiene
  - Consider a brief course of steroids
  - Treat concurrent scalp disease
  - Treat MGD component if present
Managing posterior blepharitis
Managing posterior blepharitis

MGD

maneuver (and goal!)
A

- Managing *posterior* blepharitis
  - MGD
    - Lid hygiene
Managing *posterior* blepharitis

*MGD*

- **Lid hygiene**
- Consider PO **med** if response to above is inadequate
Managing posterior blepharitis

MGD

- Lid hygiene (doxycycline)
- Consider PO doxy if response to above is inadequate
Managing posterior blepharitis

- MGD
  - Lid hygiene
  - Consider PO doxy if response to above is inadequate

How does doxy ameliorate MGD?
Managing posterior blepharitis

- MGD
  - Lid hygiene
  - Consider PO doxy if response to above is inadequate

**How does doxy ameliorate MGD?**
Doxy normalizes meibum production by blocking bacterial lipase activity. It also protects the ocular surface by inhibiting matrix metalloprotease (MMP) activity. Its antibiotic effects are probably only minimally contributory.
Managing *posterior* blepharitis

- MGD
  - Lid hygiene
  - Consider PO doxy if response to above is inadequate
  - Consider topical med
Managing posterior blepharitis

- MGD
  - Lid hygiene
  - Consider PO doxy if response to above is inadequate
  - Consider topical steroids
Managing *posterior* blepharitis

- **MGD**
  - Lid hygiene
  - Consider PO *doxy* if response to above is inadequate
  - Consider topical *steroids*

- **Rosacea**
  - PO med
Managing posterior blepharitis

- MGD
  - Lid hygiene
  - Consider PO doxy if response to above is inadequate
  - Consider topical steroids

- Rosacea
  - PO doxy
Managing posterior blepharitis

- **MGD**
  - Lid hygiene
  - Consider PO **doxy** if response to above is inadequate
  - Consider topical **steroids**

- **Rosacea**
  - PO **doxy**
    - same maneuver/goal
Managing \textit{posterior} blepharitis

- \textit{MGD}
  - Lid hygiene
  - Consider PO \textit{doxy} if response to above is inadequate
  - Consider topical \textit{steroids}

- \textit{Rosacea}
  - PO \textit{doxy}
  - Lid hygiene
Managing posterior blepharitis

- MGD
  - Lid hygiene
  - Consider PO doxy if response to above is inadequate
  - Consider topical steroids

- Rosacea
  - PO doxy
  - Lid hygiene
  - Consider a brief course of steroids if sterile PUK present
Managing posterior blepharitis

- **MGD**
  - **Lid hygiene**
  - Consider PO **doxy** if response to above is inadequate
  - Consider topical **steroids**

- **Rosacea**
  - PO **doxy**
  - **Lid hygiene**
  - Consider a brief course of steroids if sterile **PUK** present

*(peripheral ulcerative keratitis)*
Managing *posterior* blepharitis

**MGD**
- Lid hygiene
- Consider PO doxy if response to above is inadequate
- Consider topical steroids

**Rosacea**
- PO doxy
- Lid hygiene
- Consider a brief course of steroids if sterile PUK present
  - But avoid steroid if cornea is significantly bad change
- Managing *posterior* blepharitis
  - **MGD**
    - Lid hygiene
    - Consider PO *doxy* if response to above is inadequate
    - Consider topical *steroids*
  - **Rosacea**
    - PO *doxy*
    - Lid hygiene
    - Consider a brief course of steroids if sterile *PUK* present
      - But avoid steroid if cornea is significantly *thinned*
Managing \textit{demodex} blepharitis
Managing demodex blepharitis

But first: What is demodex? The hair follicle
Managing *demodex* blepharitis

But first: *What is demodex?* The hair follicle mite
Managing demodex blepharitis

- But first: What is demodex? The hair follicle mite
- What are its anterior blepharitis signs?
  - Produces classic description on the lashes
Managing *demodex* blepharitis

- But first: *What is demodex?* The hair follicle mite
- What are its *anterior* blepharitis signs?
  - Produces *sleeves* on the lashes
Managing *demodex* blepharitis

- But first: *What is demodex?* The hair follicle *mite*
- What are its *anterior* blepharitis signs?
  - Produces *sleeves* on the lashes
  - Increased lash brittleness →
Managing *demodex* blepharitis

- But first: *What is demodex?* The hair follicle mite
- What are its *anterior* blepharitis signs?
  - Produces *sleeves* on the lashes
  - Increased lash brittleness $\rightarrow$ *madarosis*
Managing **demodex blepharitis**

- But first: *What is demodex?* The hair follicle **mite**
- What are its *anterior* blepharitis signs?
  - Produces **sleeves** on the lashes
  - Increased lash brittleness → **madarosis**
- What is the mechanism of its *posterior* blepharitis?
  - eew! → gland plugging → MGD
Managing *demodex* blepharitis

- But first: *What is demodex?* The hair follicle *mite*
- What are its *anterior* blepharitis signs?
  - Produces *sleeves* on the lashes
  - Increased lash brittleness → *madarosis*
- What is the mechanism of its *posterior* blepharitis?
  - *Mite feces* → gland plugging → *obstructive* MGD
Managing **demodex blepharitis**

- But first: *What is demodex?* The hair follicle **mite**
- What are its *anterior* blepharitis signs?
  - Produces **sleeves** on the lashes
  - Increased lash brittleness $\rightarrow$ **madarosis**
- What is the mechanism of its *posterior* blepharitis?
  - **Mite feces** $\rightarrow$ gland plugging $\rightarrow$ **obstructive** MGD
    - Can lead to **MGD sequelae**
Managing *demodex* blepharitis

- But first: *What is demodex?* The hair follicle *mite*
- What are its *anterior* blepharitis signs?
  - Produces *sleeves* on the lashes
  - Increased lash brittleness → *madarosis*
- What is the mechanism of its *posterior* blepharitis?
  - *Mite feces* → gland plugging → *obstructive* MGD
    - Can lead to *chalazia*
Managing demodex blepharitis

But first: What is demodex? The hair follicle mite

What are its anterior blepharitis signs?
- Produces sleeves on the lashes
- Increased lash brittleness $\rightarrow$ madarosis

What is the mechanism of its posterior blepharitis?
- Mite feces $\rightarrow$ gland plugging $\rightarrow$ obstructive MGD
  - Can lead to chalazia

Treatment
- Lid scrubs with baby shampoo or tea tree oil
Managing *demodex* blepharitis

- But first: *What is demodex?* The hair follicle **mite**
- What are its *anterior* blepharitis signs?
  - Produces **sleeves** on the lashes
  - Increased lash brittleness → **madarosis**
- What is the mechanism of its *posterior* blepharitis?
  - **Mite feces** → gland plugging → **obstructive** MGD
    - Can lead to **chalazia**
- Treatment
  - Lid scrubs with **baby shampoo** or **tea tree oil**
Managing *demodex* blepharitis

- But first: *What is demodex?* The hair follicle *mite*
- What are its *anterior* blepharitis signs?
  - Produces *sleeves* on the lashes
  - Increased lash brittleness → *madarosis*
- What is the mechanism of its *posterior* blepharitis?
  - *Mite feces* → gland plugging → *obstructive* MGD
    - Can lead to *chalazia*
- Treatment
  - Lid scrubs with *baby shampoo* or *tea tree oil*
  - E’mycin ung (probably *mechanism of action*)
Managing demodex blepharitis

- But first: What is demodex? The hair follicle mite
- What are its anterior blepharitis signs?
  - Produces sleeves on the lashes
  - Increased lash brittleness → madarosis
- What is the mechanism of its posterior blepharitis?
  - Mite feces → gland plugging → obstructive MGD
    - Can lead to chalazia
- Treatment
  - Lid scrubs with baby shampoo or tea tree oil
  - E’mycin ung (probably smothers mites)
Q

What is entailed by ‘lid hygiene’?

1)

2)
What is entailed by ‘lid hygiene’?
1) Eyelid margin scrubs +/- baby shampoo
2) Warm compresses
What is entailed by ‘lid hygiene’?

1) Eyelid margin scrubs +/- baby shampoo

Some authorities reject the use of baby shampoo or other detergents in managing MGD. Why?
What is entailed by ‘lid hygiene’?

1) Eyelid margin scrubs +/- baby shampoo

Some authorities reject the use of baby shampoo or other detergents in managing MGD. Why? Detergents are emulsifiers—substances that allow lipids and aqueous solutions to interact. The concern is that baby shampoo will emulsify the meibum, thereby facilitating its migration through the aqueous layer and subsequent contamination of the mucin layer. These authorities recommend scrubs be performed with professional eyelid-margin cleansing solutions, or water.
What is entailed by ‘lid hygiene’?

1) Eyelid margin scrubs +/- baby shampoo

2) Warm compresses

What’s the purpose of the warm compresses?

Recall that in MGD, the melting point of the altered meibum is elevated, and therefore the MG secretions may not be fluid at body temperature. The result: hardened MG secretions often obstruct the MG orifices. By raising the local ambient temperature, warm compresses are an attempt to soften these abnormal secretions in hopes of resolving MG obstruction and thereby restoring meibum flow.
What is entailed by ‘lid hygiene’?
1) Eyelid margin scrubs +/- baby shampoo
2) **Warm compresses**

What's the purpose of the warm compresses?
Recall that in MGD, the melting point of the altered meibum is elevated, and therefore the MG secretions may not be fluid at body temperature. The result: hardened MG secretions often obstruct the MG orifices. By raising the local ambient temperature, warm compresses are an attempt to soften these abnormal secretions in hopes of resolving MG obstruction and thereby restoring meibum flow.
Q

● What is entailed by ‘lid hygiene’?
  1) Eyelid margin scrubs +/- baby shampoo
  2) Warm compresses

● What are the drawbacks to long-term topical steroid use?
  1) 
  2) 
  3)
What is entailed by ‘lid hygiene’?
1) Eyelid margin scrubs +/- baby shampoo
2) Warm compresses

What are the drawbacks to long-term topical steroid use?
1) Elevated IOP
2) Cataract formation
3) Increased risk of superinfection
What is entailed by ‘lid hygiene’?
1) Eyelid margin scrubs +/- baby shampoo
2) Warm compresses

What are the drawbacks to long-term topical steroid use?
1) Elevated IOP
2) Cataract formation
3) Increased risk of superinfection

What topical ‘anti-inflammatory’ can be used long-term that does not carry these risks?
What is entailed by ‘lid hygiene’?

1) Eyelid margin scrubs +/- baby shampoo
2) Warm compresses

What are the drawbacks to long-term topical steroid use?

1) Elevated IOP
2) Cataract formation
3) Increased risk of superinfection

What topical ‘anti-inflammatory’ can be used long-term that does not carry these risks?
Cyclosporine (Restasis)
Q

- **What is entailed by ‘lid hygiene’?**
  1) Eyelid margin scrubs +/- baby shampoo
  2) Warm compresses

- **What are the drawbacks to long-term topical steroid use?**
  1) Elevated IOP
  2) Cataract formation
  3) Increased risk of superinfection

- **What topical ‘anti-inflammatory’ can be used long-term that does not carry these risks?**
  Cyclosporine (Restasis)

*Why is anti-inflammatory in ‘hedge quotes’?*

*Because while cyclosporine does downregulate inflammation, it is not, strictly speaking, an anti-inflammatory compound*

OK then, what is the proper classification of cyclosporine?

It is an immunosuppressant

Broadly speaking, what does it do, and how does it help?

It inhibits T-cell activation, thereby blocking those aspects of the inflammatory process mediated by these cells
What is entailed by ‘lid hygiene’?
1) Eyelid margin scrubs +/- baby shampoo
2) Warm compresses

What are the drawbacks to long-term topical steroid use?
1) Elevated IOP
2) Cataract formation
3) Increased risk of superinfection

What topical ‘anti-inflammatory’ can be used long-term that does not carry these risks?
Cyclosporine (Restasis)

Why is anti-inflammatory in ‘hedge quotes’?
Because while cyclosporine does downregulate inflammation, it is not, strictly speaking, an anti-inflammatory compound.

OK then, what is the proper classification of cyclosporine?
It is an immunosuppressant

Broadly speaking, what does it do, and how does it help?
It inhibits T-cell activation, thereby blocking those aspects of the inflammatory process mediated by these cells.
What is entailed by ‘lid hygiene’?
1) Eyelid margin scrubs +/- baby shampoo
2) Warm compresses

What are the drawbacks to long-term topical steroid use?
1) Elevated IOP
2) Cataract formation
3) Increased risk of superinfection

What topical ‘anti-inflammatory’ can be used long-term that does not carry these risks?
Cyclosporine (Restasis)

Why is anti-inflammatory in ‘hedge quotes’?
Because while cyclosporine does downregulate inflammation, it is not, strictly speaking, an anti-inflammatory compound.

OK then, what is the proper classification of cyclosporine?
‘anti-inflammatory’
A

- **What is entailed by ‘lid hygiene’?**
  1. Eyelid margin scrubs +/- baby shampoo
  2. Warm compresses

- **What are the drawbacks to long-term topical steroid use?**
  1. Elevated IOP
  2. Cataract formation
  3. Increased risk of superinfection

- **What topical ‘anti-inflammatory’ can be used long-term that does not carry these risks?**
  Cyclosporine (Restasis)

**Why is anti-inflammatory in ‘hedge quotes’?**
Because while cyclosporine does downregulate inflammation, it is not, strictly speaking, an anti-inflammatory compound

**OK then, what is the proper classification of cyclosporine?**
It is an immunosuppressant
What is entailed by ‘lid hygiene’?
1) Eyelid margin scrubs +/- baby shampoo
2) Warm compresses

What are the drawbacks to long-term topical steroid use?
1) Elevated IOP
2) Cataract formation
3) Increased risk of superinfection

What topical ‘anti-inflammatory’ can be used long-term that does not carry these risks?
Cyclosporine (Restasis)

Why is anti-inflammatory in ‘hedge quotes’?
Because while cyclosporine does downregulate inflammation, it is not, strictly speaking, an anti-inflammatory compound

OK then, what is the proper classification of cyclosporine?
It is an immunosuppressant

Broadly speaking, what does it do, and how does it help?
What is entailed by ‘lid hygiene’?
1) Eyelid margin scrubs +/- baby shampoo
2) Warm compresses

What are the drawbacks to long-term topical steroid use?
1) Elevated IOP
2) Cataract formation
3) Increased risk of superinfection

What topical ‘anti-inflammatory’ can be used long-term that does not carry these risks?
Cyclosporine (Restasis)

Why is anti-inflammatory in ‘hedge quotes’?
Because while cyclosporine does downregulate inflammation, it is not, strictly speaking, an anti-inflammatory compound.

OK then, what is the proper classification of cyclosporine?
It is an immunosuppressant.

Broadly speaking, what does it do, and how does it help?
It inhibits T-cell activation, thereby blocking those aspects of the inflammatory process mediated by these cells.