Concerning PUK

- Autoimmune PUK is usually unilateral and sectoral.
Autoimmune PUK is usually **unilateral** and **sectoral**
Concerning PUK

Autoimmune PUK
Autoimmune PUK is usually **unilateral** and **sectoral**. It often heralds improvement vs worsening of systemic disease.
Concerning PUK

- Autoimmune PUK is usually unilateral and sectoral.
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Concerning PUK

- Autoimmune
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With what general category of autoimmune dz is PUK associated?
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease.

Concerning PUK

With what general category of autoimmune dz is PUK associated?  
Connective-tissue dz, especially vasculitides  

It often heralds exacerbation of systemic disease.
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease.

With what general category of autoimmune dz is PUK associated? Connective-tissue dz, especially vasculitides.

Which three conditions are most likely to present with PUK? Rheumatoid arthritis, Wegener's granulomatosis, and polyarteritis nodosa.

If a PUK pt does not carry a CTD/autoimmune diagnosis, what should the ophthalmologist do? Initiate a diagnostic workup (or promptly arrange for a rheumatologist to do so).

Concerning PUK

With which connective-tissue diseases (CTDs) and/or vasculitides has PUK been associated?
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease.

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- With what general category of autoimmune dz is PUK associated? Connective-tissue dz, especially vasculitides.
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*Of these three, which is most likely to be associated with PUK?* Rheumatoid arthritis, Wegener’s granulomatosis, and polyarteritis nodosa

*In addition to the peripheral cornea, what other ocular structure is commonly affected in these pts?* The sclera
Climate change poses a threat to biodiversity.

The impact of climate change on biodiversity is significant and far-reaching, affecting not only the survival of individual species but also entire ecosystems and the balance of nature. Several key effects of climate change on biodiversity can be highlighted:

1. **Shifts in Seasonality**: Changes in temperature and precipitation patterns lead to shifting growing seasons. This can lead to mismatches between species and their food sources, affecting the survival rates of many species. For example, earlier spring may cause some insects to emerge before their plant food is ready.

2. **Range Shifts**: As temperatures rise, species may need to move to higher latitudes or elevations to maintain their habitats. This migration can result in range expansions or contractions, which can be challenging for species unable to adapt quickly. Some species may face extinction if they cannot keep up with the pace of change.

3. **Changes in Abundance and Distribution**: Increased temperatures can lead to population declines in species that are sensitive to higher temperatures. This can be due to increased competition from invasive species or reduced survival rates. Conversely, some species such as those in high and cold locations may find their habitats expanding, leading to increased abundance in those regions.

4. **Altered Interactions**: Climate change can alter the timing of life events such as flowering and migration, which can disrupt critical interactions between species, such as pollination and predation. This can lead to a breakdown in ecological balance, affecting not just individual species but entire communities.

5. **Threats to Ecosystem Services**: The loss of biodiversity due to climate change impacts ecosystem services, which are crucial for human well-being. These services include pollination, water purification, and climate regulation. The decline of these services can lead to economic and social challenges, especially in areas heavily dependent on natural resources such as agriculture and fisheries.

6. **Increased Interspecies Competition**: With habitat changes, species that no longer have suitable environments may invade new territories, increasing competition with established species. This can lead to declines in native species, as well as changes in the dominance of species within communities.

The consequences of these changes are widespread and profound. They underscore the urgent need for conservation efforts and adaptation strategies to mitigate the impacts of climate change and protect biodiversity.
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Of these three, which is most likely to be associated with PUK? RA, by a substantial margin.

What percentage of PUK pts have RA as their underlying condition?
Concerning PUK

- Autoimmune
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Of these three, which is most likely to be associated with PUK?
RA, by a substantial margin

What percentage of PUK pts have RA as their underlying condition?
Up to 40

In addition to the peripheral cornea, what other ocular structure is commonly affected in these pts?
The sclera
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Is PUK the most common ocular manifestation of RA?

In addition to the peripheral cornea, what other ocular structure is commonly affected in these pts?
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Is PUK the most common ocular manifestation of RA? No.

What is, then?

In addition to the peripheral cornea, what other ocular structure is commonly affected in these pts? The sclera.

Concerning PUK, what percentage of PUK pts have RA as their underlying condition? Up to 40.

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Keratoconjunctivitis sicca is then associated with PUK?
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The term ‘Wegener’s granulomatosis’ has fallen out of favor.
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The term ‘Wegener’s granulomatosis’ has fallen out of favor. What term is preferred in its place?
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease.

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Which three conditions are most likely to present with PUK?
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                      granulomatosis with polyangiitis

The term ‘Wegener’s granulomatosis’ has fallen out of favor.
What term is preferred in its place?
‘Granulomatosis with polyangiitis’
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Granulomatosis with polyangiitis

The term ‘Wegener’s granulomatosis’ has fallen out of favor. What term is preferred in its place? ‘Granulomatosis with polyangiitis’.

Why did the name ‘Wegener’s granulomatosis’ fall out of favor?
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*granulomatosis with polyangiitis*

The term ‘Wegener’s granulomatosis’ has fallen out of favor.

Why did the name ‘Wegener’s granulomatosis’ fall out of favor?
Because Dr. Wegener was a Nazi
**Concerning PUK**

- Autoimmune
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**granulomatosis with polyangiitis (GwP)**

*If you’re having trouble remembering that granulomatosis with polyangiitis (GwP) is the entity formerly known as Wegener’s*
Concerning PUK

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If you’re having trouble remembering that granulomatosis with polyangiitis (GwP) is the entity formerly known as Wegener’s…
Think of the little ‘w’ as standing for ‘Wegener’s’
Concerning PUK

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What is the classic triad of granulomatosis with polyangiitis (GwP)?

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Q/A

Concerning PUK

- Autoimmune
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What is the classic triad of granulomatosis with polyangiitis (GwP)? Necrotizing vasculitis of:
--the upper and lower respiratory tract
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--small and medium-sized arteries and veins.
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- the upper and lower respiratory tract?
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What is the classic manifestation of the classic triad? That is, with what specific condition do these pts always present?*

*On the OKAP and Boards, that is
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Sinusitis. Don’t diagnose a pt with GwP without it!*

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What proportion of GwP pts have ophthalmic involvement? About half

What is the most common manifestation of that involvement? Orbital inflammation

What is the next most common manifestation? Scleritis (including PUK)

Is retinal involvement in GwP a thing? Yes, albeit uncommonly

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Concerning PUK

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Concerning PUK

- Autoimmune diseases
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*With what general category of autoimmune dz is PUK associated?* Connective-tissue dz, especially vasculitides

*What is the classic triad of granulomatosis with polyangiitis (GwP)?* Necrotizing vasculitis of:
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**Concerning PUK**

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For more on GwP, see slide-set U1
**Concerning PUK**

- Autoimmune
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**With what general category of autoimmune dz is PUK associated?**
Connective-tissue dz, especially vasculitides

**In a nutshell, what is the pathophysiology of PAN?**
Subacute episodes of focal necrotizing inflammation of arteries

**Is it a common, or uncommon condition?**
Uncommon

**Who is the typical PAN pt?**
A male between 40 and 60 years old

**Is there a racial predilection?**
No

**PAN is strongly associated with seropositivity for what virus?**
Hepatitis B

**Which three conditions are most likely to present with PUK?**
Rheumatoid arthritis, granulomatosis with polyangiitis, and polyarteritis nodosa
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Connective-tissue dz, especially vasculitides

In a nutshell, what is the pathophysiology of PAN?
Subacute episodes of focal necrotizing inflammation of arteries

Is it a common, or uncommon condition?
Uncommon

What connective-tissue dz and/or vasculitides has PUK been associated with?
Pretty much all of them

Which three conditions are most likely to present with PUK?
Rheumatoid arthritis, granulomatosis with polyangiitis, and polyarteritis nodosa

If a PUK pt does not carry a CTD/autoimmune diagnosis, what should the ophthalmologist do?
Initiate a diagnostic workup (or promptly arrange for a rheumatologist to do so)

PAN is strongly associated with seropositivity for what virus?
Hepatitis B
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Who is the typical PAN pt?

Conclusions: PUK is strongly associated with seropositivity for hepatitis B virus (HBV).
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With which connective-tissue diseases (CTDs) and/or vasculitides has PUK been associated? Pretty much all of them.

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In a nutshell, what is the pathophysiology of PAN? Subacute episodes of focal necrotizing inflammation of arteries.

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Who is the typical PAN pt? A male between 40 and 60 years old.

Is there a racial predilection? No.

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Is there a racial predilection?
- No

PAN is strongly associated with seropositivity for what virus?
- Hepatitis B

What is the typical presentation of PAN? (Note: It’s not ophthalmic.)
- Constitutional symptoms: Fever, fatigue, weight loss. Renal vasculitis resulting in secondary HTN is common.
With what general category of autoimmune dz is PUK associated?
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What connective-tissue dz or vasculitides has PUK been associated with?
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What proportion of PAN pts develop ophthalmic involvement?
About 20%

Regarding PUK

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Pretty much all of them

Which three conditions are most likely to present with PUK?
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**Concerning PUK**

- Autoimmune diseases
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If a PUK pt does not carry a CTD/autoimmune diagnosis, what should the ophthalmologist do? Initiate a diagnostic workup (or promptly arrange for a rheumatologist to do so)

If the workup is negative, what non-autoimmune diagnosis should you consider?

Gonococcal
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease.

**Concerning PUK**

With what general category of autoimmune dz is PUK associated? Connective-tissue dz, especially vasculitides.

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Pretty much all of them.

**Which three conditions are most likely to present with PUK?**
Rheumatoid arthritis, granulomatosis with polyangiitis, and polyarteritis nodosa.

**If a PUK pt does not carry a CTD/autoimmune diagnosis, what should the ophthalmologist do?**
Initiate a diagnostic workup (or promptly arrange for a rheumatologist to do so).

**If the workup is negative, what non-autoimmune diagnosis should you consider?**
Infectious PUK.
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Infectious PUK

If the PUK is associated with copious mucopurulent discharge, what infectious etiology should you consider?
Concerning PUK

- Autoimmune
- It often heralds exacerbation of systemic disease

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Infectious PUK

If the PUK is associated with copious mucopurulent discharge, what infectious etiology should you consider?
Gonococcal disease
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease. The treatment goal is to stop K melting through 3 maneuvers:

1) Improve wetting
2) Promote re-epithelialization via lubricants, BCL, and patching
3) Suppress systemic inflammation

You should also consider stopping topical steroids, which can delay re-epithelialization. As a general rule: If the cornea is significantly thinned, avoid topical steroids.
Autoimmune PUK is usually **unilateral** and **sectoral**

It often heralds **exacerbation** of systemic disease

The treatment goal is to stop K melting through 3 maneuvers:

1) Improve **wetting**
2) Promote **re-epithelialization** via lubes, BCL, patching, glue

3) Suppress **systemic inflammation**

Concerning PUK
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease. The treatment goal is to stop K melting through 3 maneuvers:

1) Improve **wetting**
2) Promote **re-epithelialization**
3) Suppress **systemic inflammation**

Of these three maneuvers, which is paramount?
Autoimmune PUK is usually unilateral and sectoral.

It often heralds exacerbation of systemic disease.

The treatment goal is to stop K melting through 3 maneuvers:
1) Improve wetting
2) Promote re-epithelialization via lubes, BCL, patching, glue
3) Suppress systemic inflammation

Of these three maneuvers, which is paramount? Controlling the underlying disease process--without this, the other maneuvers are akin to rearranging the deck chairs on the Titanic.
**Concerning PUK**

- Autoimmune PUK is usually **unilateral** and **sectoral**
- It often heralds **exacerbation** of systemic disease
- The treatment goal is to stop K melting through 3 maneuvers:
  1) **Improve wetting**
  2) Promote re-epithelialization via lubes, BCL, patching, glue
  3) Suppress systemic inflammation if local maneuvers are insufficient

*How should one improve wetting?*
Concerning PUK

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*How should one improve wetting?*
With frequent dosing of preservative-free artificial tears (PF ATs)
Autoimmune PUK is usually **unilateral** and **sectoral**. It often heralds **exacerbation** of systemic disease. The treatment goal is to stop K melting through 3 maneuvers:

1. **Improve wetting**
   - With frequent dosing of preservative-free artificial tears (PF ATs)
   - *In addition to improving wetting, what other benefit derives from frequent PF AT use?*

2. Promote re-epithelialization via lubes, BCL, patching, glue

3. Suppress systemic inflammation if local maneuvers are insufficient
Autoimmune PUK is usually **unilateral** and **sectoral**.

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The treatment goal is to stop K melting through 3 maneuvers:

1. **Improve wetting**

   *How should one improve wetting?*

   With frequent dosing of preservative-free artificial tears (PF ATs).

2. **Promote re-epithelialization** via lubes, BCL, patching, glue.

   *In addition to improving wetting, what other benefit derives from frequent PF AT use?*

   They will remove inflammatory cytokines from the ocular surface.

3. **Suppress systemic inflammation** if local maneuvers are...
Autoimmune PUK is usually **unilateral** and **sectoral**.

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The treatment goal is to stop K melting through 3 maneuvers:
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What specific sort of glue is being referred to here?
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What specific sort of glue is being referred to here?
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**What specific sort of glue is being referred to here?**
Cytanoacrylate adhesive

**How does glue assist in PUK healing?**
1. Tectonic stability, reducing the risk of perforation
2. Acts as a barrier preventing PMNs from reaching (and destroying) corneal stroma
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease. The treatment goal is to stop K melting through 3 maneuvers:

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You should also consider stopping topical steroids, which can delay re-epithelialization. As a general rule: If the cornea is significantly thinned, avoid topical steroids.

3) Suppress systemic inflammation

What specific sort of glue is being referred to here?
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How does glue assist in PUK healing?
1) It provides tectonic stability, thereby reducing the risk of perforation
2) It acts as a barrier preventing PMNs from reaching (and destroying) corneal stroma.
Concerning PUK

Just prior to perfing

Same eye s/p gluing (and on IMT)

PUK in RA
Autoimmune PUK is usually **unilateral** and **sectoral**.

It often heralds **exacerbation** of systemic disease.

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**Use of cyanoacrylate adhesive mandates that what other therapeutic maneuver be applied as well?**
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A BCL must be placed over the glued cornea.
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**Use of a BCL mandates that what other therapeutic maneuver be applied as well?**
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*Use of a BCL mandates that what other therapeutic maneuver be applied as well?*  
An antibiotic drop should be used to prophylax against the possibility of a BCL-induced bacterial superinfection
Concerning PUK

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What bacteria species must you be certain is adequately covered by the antibiotic?
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Use of a BCL mandates that what other therapeutic maneuver be applied as well? An antibiotic drop should be used to prophylax against the possibility of a BCL-induced bacterial superinfection

What bacteria species must you be certain is adequately covered by the antibiotic? Pseudomonas
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- The treatment goal is to stop K melting through 3 maneuvers:
  1) Improve wetting
  2) Promote re-epithelialization via lubes, BCL, patching, glue
  - You should also consider stopping **common ocular drug** which can delay re-epithelialization. As a general rule: If the cornea is significantly thinned, avoid **same drug**.
  3) Suppress **systemic inflammation**
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2) Promote re-epithelialization via lubes, BCL, patching, glue
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  1) Improve wetting
  2) Promote re-epithelialization via lubes, BCL, patching, glue.
     - You should also consider stopping topical steroids, which can delay re-epithelialization. As a general rule: If the cornea is significantly thinned, avoid topical steroids.
  3) Suppress systemic inflammation.
  4) Conj flap over the peripheral defect?

What about using a conj flap to cover the peripheral defect?
Autoimmune PUK is usually unilateral and sectoral.

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The treatment goal is to stop K melting through 3 maneuvers:
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3) Suppress systemic inflammation
4) Conj flap over the peripheral defect? NO!

What about using a conj flap to cover the peripheral defect?
Conj flaps are contraindicated in autoimmune PUK because they bring the conj vasculature (and thus all those nasty blood-borne inflammatory mediators) even closer to the melt.
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease. The treatment goal is to stop K melting through 3 maneuvers:

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In what clinical scenario might a conj flap over a PUK defect be an appropriate treatment maneuver?

What about using a conj flap to cover the peripheral defect? Conj flaps are contraindicated in autoimmune PUK because they bring the conj vasculature (and thus all those nasty blood-borne inflammatory mediators) even closer to the melt.
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  1. Improve wetting
  2. Promote re-epithelialization via lubes, BCL, patching, glue
     - You should also consider stopping topical steroids, which can delay re-
   3. Suppress systemic inflammation
   4. **Conj flap over the peripheral defect? YES!**

**In what clinical scenario might a conj flap over a PUK defect be an appropriate treatment maneuver?**

In **infectious** PUK, especially when the organism is **type of bug**

What about using a conj flap to cover the peripheral defect?
Conj flaps are contraindicated in autoimmune PUK because they bring the conj vasculature (and thus all those nasty blood-borne inflammatory mediators) even closer to the melt
Autoimmune PUK is usually unilateral and sectoral.

It often heralds exacerbation of systemic disease.

The treatment goal is to stop K melting through 3 maneuvers:

1. Improve wetting
2. Promote re-epithelialization via lubes, BCL, patching, glue
   - You should also consider stopping topical steroids, which can delay re-

3. Suppress systemic inflammation

4. Conj flap over the peripheral defect? YES!

In what clinical scenario might a conj flap over a PUK defect be an appropriate treatment maneuver?

In infectious PUK, especially when the organism is fungal.
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease. The treatment goal is to stop K melting through 3 maneuvers:

1) Improve wetting
2) Promote re-epithelialization via lubes, BCL, patching, glue
   - You should also consider stopping topical steroids, which can delay re-epithelialization. As a general rule: If the cornea is significantly thinned, avoid topical steroids.
3) Suppress systemic inflammation

4) Conj surgery:

What about using a conj flap to cover the peripheral defect? Conj flaps are contraindicated in autoimmune PUK because they bring the conj vasculature (and thus all those nasty blood-borne inflammatory mediators) even closer to the melt.

What conj surgery is very helpful in autoimmune PUK?
Autoimmune PUK is usually unilateral and sectoral. It often heralds exacerbation of systemic disease. The treatment goal is to stop K melting through 3 maneuvers:
1) Improve wetting
2) Promote re-epithelialization via lubes, BCL, patching, glue
   - You should also consider stopping topical steroids, which can delay re-epithelialization. As a general rule: If the cornea is significantly thinned, avoid topical steroids.
3) Suppress systemic inflammation
4) Conj surgery: Sectoral conj resection

What about using a conj flap to cover the peripheral defect? Conj flaps are contraindicated in autoimmune PUK because they bring the conj vasculature (and thus all those nasty blood-borne inflammatory mediators) even closer to the melt.

What conj surgery is very helpful in autoimmune PUK? Sectoral conj resection (ie, cutting the conj away from the PUK zone) can be very effective.
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- Polyarteritis nodosa (PAN)
- Relapsing polychondritis (RP)
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- Saddle-nose deformity (2): RP; GwP
Concerning PUK

Saddle-nose deformity
If a pt with a saddle nose had interstitial keratitis rather than PUK, what diagnosis should you consider?
If a pt with a saddle nose had interstitial keratitis rather than PUK, what diagnosis should you consider?

**Congenital syphilis**
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- Saddle-nose deformity (2): RP; GwP
- Asthma and eosinophilia:
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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**A**
Q

For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

Polyarteritis nodosa (PAN)  Relapsing polychondritis (RP)
Rheumatoid arthritis (RA)  Granulomatosis with polyangiitis (GwP)
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- Deformed auricular pinnae:
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- Saddle-nose deformity (2): **RP; GwP**
- Asthma and eosinophilia: **CS**
- Deformed auricular pinnae: **RP**
Concerning PUK

Auricular damage in RP
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- **Polyarteritis nodosa (PAN)**
- **Rheumatoid arthritis (RA)**
- **Mooren’s ulcer (MU)**
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- **Churg-Strauss (CS)**

- Saddle-nose deformity (2): **RP; GwP**
- Asthma and eosinophilia: **CS**
- Deformed auricular pinnae: **RP**
- Ulcer has overhanging edge (2):
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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Concerning PUK

Mooren’s ulcer. Note the overhanging edge.
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- Saddle-nose deformity (2): RP; GwP
- Asthma and eosinophilia: CS
- Deformed auricular pinnae: RP
- Ulcer has overhanging edge (2): MU; PAN

What is the classic description regarding the pattern of progression for PUK in both Mooren’s and PAN?

1) Starts sectoral then
2) progresses circumferentially then
3) progresses centrally
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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Saddle-nose deformity (2): RP; GwP

Asthma and eosinophilia: CS

Deformed auricular pinnae: RP

Ulcer has overhanging edge (2): MU; PAN

Sclera *never* involved: MU

*Take note! This is a key factor differentiating between Mooren’s and other forms of PUK.*
Concerning PUK

Mooren’s ulcer. Note the adjacent sclera is totally quiet.
Q

For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

Polyarteritis nodosa (PAN)  Relapsing polychondritis (RP)
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- Sclera never involved: MU
- ANCA positive (2):
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- Polyarteritis nodosa (PAN)
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- Deformed auricular pinnae: RP
- Ulcer has overhanging edge (2): MU; PAN
- Sclera never involved: MU
- ANCA positive (2): GwP; CS

*(Hey, what about PAN??!! Un momento, por favor)*
What does ANCA stand for?
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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**What does ANCA stand for?**
Antineutrophil cytoplasmic antibodies
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- **ANCA positive (2): GwP; CS**

*What does ANCA stand for?*
Antineutrophil cytoplasmic antibodies

*What are they?*
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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What does ANCA stand for?
Antineutrophil cytoplasmic antibodies

What are they?
Autoantibodies against antigens found within the cytoplasm of neutrophils
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- Saddle-nose deformity (2): RP; GwP
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What does ANCA stand for?
Anti-neutrophil cytoplasmic antibodies

What are they?
Autoantibodies against antigens found within the cytoplasm of neutrophils
What does ANCA stand for?
Antineutrophil cytoplasmic antibodies

What are they?
Autoantibodies against antigens found within the cytoplasm of neutrophils

With which specific ANCA pattern is each condition associated?
Granulomatosis with polyangiitis: ?
Churg-Strauss
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- Saddle-nose deformity (2): RP; GwP
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Antineutrophil cytoplasmic antibodies

*What are they?*
Autoantibodies against antigens found within the cytoplasm of neutrophils

*With which specific ANCA pattern is each condition associated?*
**Granulomatosis with polyangiitis:** Cytoplasmic (c-ANCA)
**Churg-Strauss:** Perinuclear (p-ANCA)
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

Polyarteritis nodosa (PAN)  Relapsing polychondritis (RP)
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What about PAN? I thought it was ANCA-positive as well.
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- ANCA positive (2): **GwP; CS; PAN?**

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---

- *Classic PAN*
- *Microscopic polyangiitis*
What about PAN? I thought it was ANCA-positive as well.

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-- Classic PAN, which affects… [description of involved vessels]
-- Microscopic polyangiitis
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- Saddle-nose deformity (2): RP; GwP
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--Classic PAN, which affects…medium- and small-sized ‘muscular’ arteries
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Saddle-nose deformity (2): RP; GwP

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--Classic PAN, which affects…medium- and small-sized ‘muscular’ arteries; and

--Microscopic polyangiitis, which affects…[ditto]
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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--Classic PAN, which affects...medium- and small-sized ‘muscular’ arteries; and
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It turns out microscopic polyangiitis is strongly ANCA-positive, but classic PAN is not.
Saddle-nose deformity (2): RP; GwP
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It turns out microscopic polyangiitis is strongly ANCA-positive, but classic PAN is not. (Because of its ANCA-posivity, microscopic angiitis is now considered to be more closely related to Churg-Strauss, and especially granulomatosis with polyangiitis, than to PAN).

What's the difference between a 'small-sized' artery and a 'smaller' artery?
A

For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- Polyarteritis nodosa (PAN)
- Rheumatoid arthritis (RA)
- Mooren’s ulcer (MU)
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It turns out microscopic polyangiitis is strongly ANCA-positive, whereas classic PAN is not. Because of its ANCA-positivity, microscopic polyangiitis is now considered to be closely related to Churg-Strauss, and especially granulomatosis with polyangiitis (GwP).

What’s the difference between a ‘small-sized’ artery and a ‘smaller’ artery?
Rule of thumb: Classic PAN only affects arteries large enough to be named, whereas microscopic angiitis only affects vessels smaller than that.
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

<table>
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<tr>
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- Saddle-nose deformity (2): RP; GwP
- Asthma and eosinophilia: CS
- Deformed auricular pinnae: RP
- Ulcer has overhanging edge (2): MU; PAN
- Sclera never involved: MU
- ANCA positive (2): GwP; CS; PAN (10% of cases)

What about PAN? I thought it was ANCA-positive as well.
This is a sticky widget. In the 1990s, rheumatologists determined that the label PAN was being applied to conditions that were actually separate disease entities. Thus, PAN was subdivided into several conditions:
--Classic PAN, which affects only medium- and small-sized ‘muscular’ arteries; and
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Got it. So if it’s ANCA+ it’s not PAN, right?
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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Got it. So if it’s ANCA+ it’s not PAN, right?

Unfortunately, no. Per the BCSC Uveitis book, ~10% of PAN pts will be c- or p-ANCA positive.

OK, tell me this much at least--are both classic PAN and microscopic angiitis associated with PUK?

Yes
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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Relapsing polychondritis (RP)
Granulomatosis with polyangiitis (GwP)
Churg-Strauss (CS)
### For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- Sclera never involved: **MU**
- ANCA positive (2): **GwP; CS; PAN**
- Is a diagnosis of exclusion: **MU**
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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Relapsing polychondritis (RP)  
Rheumatoid arthritis (RA)  
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- Sclera never involved: MU
- ANCA positive (2): GwP; CS; PAN
- Is a diagnosis of exclusion: MU
- Chest X-ray likely abnormal (3):
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer):

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- Sclera never involved: MU
- ANCA positive (2): GwP; CS; PAN
- Is a diagnosis of exclusion: MU
- Chest X-ray likely abnormal (3): GwP; CS; RP
- Associated with hepatitis seropositivity:
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- Chest X-ray likely abnormal (3): GwP; CS; RP
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For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- **Saddle-nose deformity (2):** RP; GwP
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- **ANCA positive (2):** GwP; CS; PAN
- **Is a diagnosis of exclusion:** MU
- **Chest X-ray likely abnormal (3):** GwP; CS; RP
- **Associated with hepatitis seropositivity:** PAN

*Which hepatitis virus is definitely associated with PAN?*
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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<td>Associated with hepatitis seropositivity</td>
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Which hepatitis virus is definitely associated with PAN?
Hepatitis B
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- Saddle-nose deformity (2): RP; GwP
- Asthma and eosinophilia: CS
- Deformed auricular pinnae: RP
- Ulcer has overhanging edge (2): MU; PAN
- Sclera never involved: MU
- ANCA positive (2): GwP; CS; PAN
- Is a diagnosis of exclusion: MU
- Chest X-ray likely abnormal (3): GwP; CS; RP
- Associated with **hepatitis seropositivity**: PAN

Which hepatitis virus is definitely associated with PAN?
Hepatitis B

What percent of PAN pts test positive for are Hep B surface Ag?
Saddle-nose deformity (2): RP; GwP
Asthma and eosinophilia: CS
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Ulcer has overhanging edge (2): MU; PAN
Sclera never involved: MU
ANCA positive (2): GwP; CS; PAN
Is a diagnosis of exclusion: MU
Chest X-ray likely abnormal (3): GwP; CS; RP
Associated with hepatitis seropositivity: PAN

Which hepatitis virus is definitely associated with PAN?
Hepatitis B

What percent of PAN pts test positive for are Hep B surface Ag?
About 10
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

- **Polyarteritis nodosa (PAN)**
- **Rheumatoid arthritis (RA)**
- **Mooren’s ulcer (MU)**
- **Relapsing polychondritis (RP)**
- **Granulomatosis with polyangiitis (GwP)**
- **Churg-Strauss (CS)**

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- Deformed auricular pinnae: RP
- Ulcer has overhanging edge (2): MU; PAN
- Sclera never involved: MU
- ANCA positive (2): GwP; CS; PAN
- Is a diagnosis of exclusion: MU
- Chest X-ray likely abnormal (3): GwP; CS; RP
- Associated with **hepatitis seropositivity**: PAN

*Which hepatitis virus is definitely associated with PAN?*
Hepatitis B

*Which form is probably associated, but the evidence is not as strong as for B?*
A

For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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Which hepatitis virus is definitely associated with PAN?
Hepatitis B

Which form is probably associated, but the evidence is not as strong as for B?
Hepatitis C
Polyarteritis nodosa (PAN)
Rheumatoid arthritis (RA)
Mooren’s ulcer (MU)

Relapsing polychondritis (RP)
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Churg-Strauss (CS)

For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- Sclera never involved: MU
- ANCA positive (2): GwP; CS; PAN
- Is a diagnosis of exclusion: MU
- Chest X-ray likely abnormal (3): GwP; CS; RP
- Associated with hepatitis seropositivity: PAN
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For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- Sclera never involved: MU
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- Is a diagnosis of exclusion: MU
- Chest X-ray likely abnormal (3): GwP; CS; RP
- Associated with hepatitis seropositivity: PAN
- Associated with helminthic seropositivity: MU
- Renal function may be impaired (4):
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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**Polyarteritis nodosa (PAN)**
**Relapsing polychondritis (RP)**
**Rheumatoid arthritis (RA)**
**Granulomatosis with polyangiitis (GwP)**
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For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- Saddle-nose deformity (2): RP; GwP
- Asthma and eosinophilia: CS
- Deformed auricular pinnae: RP
- Ulcer has overhanging edge (2): MU; PAN
- Sclera never involved: MU
- ANCA positive (2): GwP; CS; PAN
- Is a diagnosis of exclusion: MU
- Chest X-ray likely abnormal (3): GwP; CS; RP
- Associated with hepatitis seropositivity: PAN
- Associated with helminthic seropositivity: MU
- Renal function may be impaired (4): GwP; PAN; CS; RP
- Chronic, tx-resistant sinusitis common: GwP
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- Sclera never involved: MU
- ANCA positive (2): GwP; CS; PAN
- Is a diagnosis of exclusion: MU
- Chest X-ray likely abnormal (3): GwP; CS; RP
- Associated with hepatitis seropositivity: PAN
- Associated with helminthic seropositivity: MU
- Renal function may be impaired (4): GwP; PAN; CS; RP
- Chronic, tx-resistant sinusitis common: GwP
- **Extremely** painful:
A

For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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- Associated with hepatitis seropositivity: PAN
- Associated with helminthic seropositivity: MU
- Renal function may be impaired (4): GwP; PAN; CS; RP
- Chronic, tx-resistant sinusitis common: GwP
- **Extremely** painful: MU

*(All forms of inflammatory PUK are painful, but Mooren’s is exceptionally so.)*
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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**What does CCP stand for in this context?**

**Anti-CCP Ab positive: RA**
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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What does CCP stand for in this context?

Cyclic citrullinated peptide

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What does CCP stand for in this context?
- Cyclic citrullinated peptide

What does it mean to say a peptide has been citrullinated?
- It means that some of the arginine moieties within proteins have been enzymatically converted to the amino acid citrulline (which isn’t one of the 20 standard AAs coded for in our genome)

OK, so what does this have to do with RA?
- The citrulline moieties alter the conformation of the proteins within which they occur, rendering the proteins novel to the immune system.
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When evaluating a pt for RA, I usually check for the presence of serum rheumatoid factor (RF). Is anti-CCP a better test?
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**Q/A**

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Yes, because it has the same sensitivity but higher specificity (98%) for RA c/w the RF test
For each statement, identify which of these causes of PUK is/are associated (some will more than one answer)

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Concerning PUK

With respect to manifesting PUK, which of the following doesn’t belong, and why?

- RA, Mooren’s, Behçet, IBD  (IBD = Inflammatory bowel disease)
With respect to manifesting PUK, which of the following doesn’t belong, and why?
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Why is Mooren’s the oddball in this group?
With respect to manifesting PUK, which of the following doesn’t belong, and why?

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*Why is Mooren’s the oddball in this group?*
PUK in the others is due to a systemic condition, whereas Mooren’s is, by definition, ocular only
With respect to manifesting PUK, which of the following doesn’t belong, and why?
- RA, Mooren’s, Behçet, IBD

And in this group?
- Mooren’s, Terrien’s marginal, Sarcoid, SLE
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*Why is Terrien’s the oddball in this group?*
With respect to manifesting PUK, which of the following doesn’t belong, and why?

- RA, Mooren’s, Behçet, IBD

And in this group?

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Why is Terrien’s the oddball in this group?

Two reasons:

- PUK in the others is an inflammatory process; Terrien’s is
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With respect to manifesting PUK, which of the following doesn’t belong, and why?
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Why is Terrien’s the oddball in this group?

Two reasons:
--PUK in the others is an inflammatory process; Terrien’s is noninflammatory
--As implied by the word ‘ulcerative’ in the name, the corneal epithelium is disrupted in PUK. In contrast, the epithelium is intact in Terrien’s.
Concerning PUK

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**Concerning PUK**

If the epithelium is intact, what is going on that puts Terrien’s on the DDx for PUK?
- PUK in the others is an inflammatory process; Terrien’s is noninflammatory
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Progressive peripheral thinning makes the limbal region in Terrien’s resemble PUK.

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Speaking of Terrien’s…

Is it a common, or an uncommon condition?

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Is it a common, or an uncommon condition?
Uncommon

Why is Terrien’s the oddball in this group?

Two reasons:
--PUK in the others is an inflammatory process; Terrien’s is noninflammatory
--As implied by the word ‘ulcerative’ in the name, the corneal epithelium is disrupted in PUK. In contrast, the epithelium is intact in Terrien’s.
With respect to manifesting PUK, which of the following doesn’t belong, and why?
- RA, Mooren’s, Behçet, IBD

And in this group?
- Mooren’s, Terrien’s marginal, Sarcoid, SLE

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Concerning PUK

Speaking of Terrien’s…

Is it a common, or an uncommon condition?
Uncommon

Does it have a gender predilection?
While once thought to be more common in males, it is now considered equal

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Concerning PUK

Speaking of Terrien’s...

Is it a common, or an uncommon condition?
Uncommon

Does it have a gender predilection?
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During what life-stage does Terrien’s typically first appear?

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Concerning PUK

Speaking of Terrien’s…
Is it a common, or an uncommon condition?
Uncommon

Does it have a gender predilection?
While once thought to be more common in males, it is now considered equal

During what life-stage does Terrien’s typically first appear?
Young adulthood (late teens - early 30s)

Why is Terrien’s the oddball in this group?
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--As implied by the word ‘ulcerative’ in the name, the corneal epithelium is disrupted in PUK. In contrast, the epithelium is intact in Terrien’s.
Concerning PUK

Speaking of Terrien’s…

*Is it a common, or an uncommon condition?*

Uncommon

*Does it have a gender predilection?*

While once thought to be more common in males, it is now considered equal

*Is it unilateral, or bilateral?*

Bilateral (although involvement can be strikingly asymmetric)

---

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--As implied by the word ‘ulcerative’ in the name, the corneal epithelium is disrupted in PUK. In contrast, the epithelium is intact in Terrien’s.
Concerning PUK

Speaking of Terrien’s…
Is it a common, or an uncommon condition?
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Concerning PUK

Speaking of Terrien’s…

*Is it a common, or an uncommon condition?*
Uncommon

*Does it have a gender predilection?*
While once thought to be more common in males, it is now considered equal

*Is it unilateral, or bilateral?*
Bilateral (although involvement can be strikingly asymmetric)

*Which sector of the cornea is involved first, and how does it progress from there?*

**Terrien’s marginal**

Why is Terrien’s the oddball in this group?
Two reasons:
--PUK in the others is an inflammatory process; Terrien’s is noninflammatory
--As implied by the word ‘ulcerative’ in the name, the corneal epithelium is disrupted in PUK. In contrast, the epithelium is **intact** in Terrien’s.
Speaking of Terrien’s…

Is it a common, or an uncommon condition?
Uncommon

Does it have a gender predilection?
While once thought to be more common in males, it is now considered equal

Is it unilateral, or bilateral?
Bilateral (although involvement can be strikingly asymmetric)

Which sector of the cornea is involved first, and how does it progress from there?
It starts superonasally, then spreads circumferentially

Concerning PUK

Why is Terrien’s the oddball in this group?
Two reasons:
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Concerning PUK

Speaking of Terrien’s…

*Is it a common, or an uncommon condition?*

Uncommon

*Does it have a gender predilection?*

While once thought to be more common in males, it is now considered equal

*Is it unilateral, or bilateral?*

Bilateral (although involvement can be strikingly asymmetric)

*Which sector of the cornea is involved first, and how does it progress from there?*

It starts superonasally, then spreads circumferentially

*Does it affect vision? If so, how?*

Yes, by inducing high astigmatism

Why is Terrien’s the oddball in this group?

Two reasons:

--PUK in the others is an inflammatory process; Terrien’s is noninflammatory

--As implied by the word ‘ulcerative’ in the name, the corneal epithelium is disrupted in PUK. In contrast, the epithelium is intact in Terrien’s.
Concerning PUK

Speaking of Terrien’s…

Is it a common, or an uncommon condition?

Uncommon

Does it have a gender predilection?

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Is it unilateral, or bilateral?

Bilateral (although involvement can be strikingly asymmetric)

Which sector of the cornea is involved first, and how does it progress from there?

It starts superonasally, then spreads circumferentially

Does it affect vision? If so, how?

Yes, by inducing high astigmatism

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Concerning PUK

Speaking of Terrien’s…

Is it a common, or an uncommon condition?

Uncommon

The key to diagnosing Terrien’s is its classic appearance:

- The epithelium is intact, as noted earlier

Which sector of the cornea is involved first, and how does it progress from there?

It starts superonasally, then spreads circumferentially

Does it affect vision? If so, how?

Yes, by inducing high astigmatism

Terrien’s marginal

Why is Terrien’s the oddball in this group?
Concerning PUK

Speaking of Terrien’s…
Is it a common, or an uncommon condition?
Uncommon

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Concerning PUK

Speaking of Terrien’s…
Is it a common, or an uncommon condition?
Uncommon

The key to diagnosing Terrien’s is its classic appearance:
--The epithelium is **intact**, as noted earlier
--The **leading edge** of the thinned area is characterized by the presence of...

Which sector of the cornea is involved first, and how does it progress from there?
It starts superonasally, then spreads circumferentially

Does it affect vision? If so, how?
Yes, by inducing high astigmatism

Why is Terrien’s the oddball in this group?
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Concerning PUK

Speaking of Terrien’s…
Is it a common, or an uncommon condition?
Uncommon

The key to diagnosing Terrien’s is its classic appearance:
--The epithelium is intact, as noted earlier
--The leading edge of the thinned area is characterized by the presence of…Lipid

Which sector of the cornea is involved first, and how does it progress from there?
It starts superonasally, then spreads circumferentially

Does it affect vision? If so, how?
Yes, by inducing high astigmatism

Terrien’s marginal

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Speaking of Terrien’s…

Is it a common, or an uncommon condition?
Uncommon

The key to diagnosing Terrien’s is its classic appearance:
--The epithelium is intact, as noted earlier
--The leading edge of the thinned area is characterized by the presence of…Lipid
--The trailing portion is characterized by the presence of a…

Which sector of the cornea is involved first, and how does it progress from there?
It starts superonasally, then spreads circumferentially

Does it affect vision? If so, how?
Yes, by inducing high astigmatism

Concerning PUK

Why is Terrien’s the oddball in this group?
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Concerning PUK

Speaking of Terrien’s…
Is it a common, or an uncommon condition?
Uncommon

The key to diagnosing Terrien’s is its classic appearance:
--The epithelium is **intact**, as noted earlier
--The **leading edge** of the thinned area is characterized by the presence of… **Lipid**
--The **trailing portion** is characterized by the presence of a… **Vascular pannus**

Which sector of the cornea is involved first, and how does it progress from there?
It starts superonasally, then spreads circumferentially

Does it affect vision? If so, how?
Yes, by inducing **high astigmatism**

Why is Terrien’s the oddball in this group?
Two reasons:
--PUK in the others is an **inflammatory** process; Terrien’s is **noninflammatory**
--As implied by the word ‘ulcerative’ in the name, the corneal epithelium is **disrupted** in PUK. In contrast, the epithelium is **intact** in Terrien’s.
Concerning PUK

Terrien marginal degeneration. Note the leading lipids and the trailing pannus
Concerning PUK

Speaking of Terrien’s…
Is it a common, or an uncommon condition?
Uncommon

The key to diagnosing Terrien’s is its classic appearance:
--The epithelium is intact, as noted earlier
--The leading edge of the thinned area is characterized by the presence of…Lipid
--The trailing portion is characterized by the presence of a…Vascular pannus

Remember this!!! Consider it your tl;dr for Terrien’s

Does it affect vision? If so, how?
Yes, by inducing high astigmatism

And in this group?
Mooren’s, Terrien’s marginal, Sarcoid, SLE

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Concerning PUK

Speaking of Terrien's...

Is it a common, or an uncommon condition?
Uncommon

Does Terrien's render the cornea significantly thinner than normal?
Yes

Does it have a gender predilection?
While once thought to be more common in males, it is now considered equal

Is it unilateral or bilateral?
Bilateral (although involvement can be strikingly asymmetric)

Which sector of the cornea is involved first, and how does it progress from there?
It starts superonasally, then spreads circumferentially

Does it affect vision? If so, how?
Yes, by inducing high astigmatism

Does Terrien's render the cornea significantly thinner than normal?
Yes

Is the terrien's cornea at risk for rupture with mild trauma?
Yes

Do Terrien pts need to wear protective eyewear?
Yes

Why is Terrien's the oddball in this group?
Two reasons:

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Speaking of Terrien’s…

**Concerning PUK**

- **Is it a common, or an uncommon condition?**
  - Uncommon

  - **Does Terrien’s render the cornea significantly thinner than normal?**
    - Yes

  - **Is the thinned Terrien’s cornea at risk for rupture with mild trauma?**
    - Yes

- **Is it unilateral or bilateral?**
  - Bilateral (although involvement can be strikingly asymmetric)

  - **Does it affect vision? If so, how?**
    - Yes, by inducing high astigmatism

- **Which sector of the cornea is involved first, and how does it progress from there?**
  - It starts superonasally, then spreads circumferentially

- **Mooren’s, Terrien’s marginal, Sarcoid, SLE...**

  - *Terrien’s marginal*

- **Why is Terrien’s the oddball in this group?**
  - Two reasons:
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    - As implied by the word ‘ulcerative’ in the name, the corneal epithelium is disrupted in PUK. In contrast, the epithelium is **intact** in Terrien’s.
Concerning PUK

Speaking of Terrien’s…
Is it a common, or an uncommon condition?
Uncommon

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Concerning PUK

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Concerning PUK

Speaking of Terrien’s…

Is it a common, or an uncommon condition?

Uncommon

Does Terrien’s render the cornea significantly thinner than normal?

Yes

Is the thinned Terrien’s cornea at risk for rupture with mild trauma?

Yes

Do Terrien pts need to wear protective eyewear?

Yes

Does it affect vision? If so, how?

Yes, by inducing high astigmatism

Does it have a gender predilection?

While once thought to be more common in males, it is now considered equal

Is it unilateral or bilateral?

Bilateral (although involvement can be strikingly asymmetric)

Anatomically, which sector of the cornea is involved first, and how does it progress from there?

It starts superonasally, then spreads circumferentially

Mooren’s, Terrien’s marginal, Sarcoid, SLE
Concerning PUK

Speaking of Terrien’s?

Is it a common, or an uncommon condition? Uncommon

Does Terrien’s render the cornea significantly thinner than normal? Yes

Does it have a gender predilection? While once thought to be more common in males, it is now considered equal

Concerning Terrien’s?

Is it a common, or an uncommon condition? Uncommon

Unilateral (although involvement can be strikingly asymmetric)

Which sector of the cornea is involved first, and how does it progress from there? It starts superonasally, then spreads circumferentially

Does it affect vision? Yes, by inducing high astigmatism

Is the thinned Terrien’s cornea at risk for rupture with mild trauma? Yes

Do Terrien pts need to wear protective eyewear? Yes

There is a lookalike condition—rarer than Terrien’s—which differs in that 1) it is more likely to occur in children, and 2) it is inflammatory in nature. The Cornea book speculates that it might not be a separate condition, but rather a manifestation of the same dz process as Terrien. What is it? Fuchs’ superficial marginal keratitis

Why is Terrien’s the oddball in this group? Two reasons:
--PUK in the others is an inflammatory process; Terrien’s is noninflammatory
--As implied by the word ‘ulcerative’ in the name, the corneal epithelium is disrupted in PUK. In contrast, the epithelium is intact in Terrien’s.
Concerning PUK

Speaking of Terrien’s?
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Fuchs’ superficial marginal keratitis

Does it affect vision? If so, how?
Yes, by inducing high astigmatism

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There is a lookalike condition—rarer than Terrien’s—which differs in that 1) it is more likely to occur in children, and 2) it is inflammatory in nature. The Cornea book speculates that it might not be a separate condition, but rather a manifestation of the same dz process as Terrien. What is it?
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Concerning PUK

Fuchs’ superficial marginal keratitis
Q

Concerning PUK

- All of the following are true concerning Mooren’s ulcer except (could be more than one):
  - Cause is unknown
  - One clinical type presents as a unilateral PUK in the elderly
  - The other type presents as bilateral disease in young African women
  - Patients with the ‘African’ variety often have a history of systemic helminth infection
  - Mooren’s responds readily to aggressive local therapy
Concerning PUK

- All of the following are true concerning Mooren’s ulcer *except* (could be more than one):
  - Cause is unknown  *T*
  - One clinical type presents as a unilateral PUK in the elderly  *T men*
  - The other type presents as bilateral disease in young African women
  - Patients with the ‘African’ variety often have a history of systemic helminth infection  *T poorly*
  - Mooren’s responds readily to aggressive local therapy

- A
All of the following are true concerning Mooren’s ulcer except (could be more than one):

- Cause is unknown  \( T \)
- One clinical type presents as a unilateral PUK in the elderly  \( T \)
- The other type presents as bilateral disease in young African men
- Patients with the ‘African’ variety often have a history of systemic helminth infection  \( T \)
- Mooren’s responds readily to aggressive local therapy

**Concerning PUK**

Moore's ulcer is a chronic, progressive PUK. By definition, the cause is unknown. It starts sectorally, progresses circumferentially, then finally centrally. The leading edge is undermined and de-epithelialized. Two clinical varieties are recognized: Unilateral disease in the elderly, and rapidly progressive, severe bilateral disease that strikes young African men. These men usually are seropositive for helminthic disease.

The plethora of treatments stands as gloomy testimony to the relative ineffectiveness of each. Ocular modalities include topical steroids, BCL, \( n\)-acetylcysteine drops, topical cyclosporine and conjunctival resection. Quite often, systemic immunosuppressives are needed: steroids, MTX, and/or cyclophosphamide.