What are the four basic anatomic locations in which uveitis can originate?
What are the four basic anatomic locations in which uveitis can originate?
Uveitis

1) The uveitis is profiled
2) The profiled case is meshed
3) A differential diagnosis list is generated
4) Studies are obtained to identify the etiology
5) Treatment appropriate for the etiology is initiated

Which location is most likely to manifest uveitis caused by Bartonella?
Which location is most likely to manifest uveitis caused by Bartonella?
Uveitis: **Posterior**

*If inflammation is located...*

- Primarily in the choroid
  - *It is called:*
  - ?
- In both the choroid and the retina
  - *It is called:*
  - ?
- Primarily in the retina
  - *It is called:*
  - ?
- Involving the ONH and the retina
  - *It is called:*
  - ?

*What do we call each form of uveitis?*
Uveitis: **Posterior**

*If inflammation is located…*

- Primarily in the choroid: **Choroiditis**
- In both the choroid and the retina: **Chorioretinitis or Retinochoroiditis**
- Primarily in the retina: **Retinitis**
- Involving the ONH and the retina: **Neuroretinitis**

What do we call each form of uveitis?

1) The uveitis is profiled
2) The profiled case is meshed
3) A differential diagnosis list is generated
4) Studies are obtained to identify the etiology
5) Treatment appropriate for the etiology is initiated
Uveitis: **Posterior**

If inflammation is located…

- Primarily in the choroid
  - It is called: **Choroiditis?**

- In both the choroid and the retina
  - It is called: **Chorioretinitis** or **Retinochoroiditis?**

- Primarily in the retina
  - It is called: **Retinitis?**

- Involving the ONH and the retina
  - It is called: **Neuroretinitis?**

*With which form is Bartonella most likely to present?*
Uveitis: **Posterior**

*If inflammation is located…*

- Primarily in the choroid  
  *It is called:*  
  - **Choroiditis**

- In both the choroid *and* the retina  
  *It is called:*  
  - **Chorioretinitis or Retinochoroiditis**

- Primarily in the retina  
  *It is called:*  
  - **Retinitis**

Involving the ONH *and the retina*  
*It is called:*  
- **Neuroretinitis**

1) The uveitis is profiled  
2) The profiled case is meshed  
3) A differential diagnosis list is generated  
4) Studies are obtained to identify the etiology  
5) Treatment appropriate for the etiology is initiated

*With which form is Bartonella most likely to present?*
If inflammation is located...

Primarily in the choroid

- *It is called:* Choroiditis

In both the choroid and the retina

- *It is called:* Chorioretinitis or Retinochoroiditis

Primarily in the retina

- *It is called:* Retinitis

Involving the ONH and the retina

- *It is called:* Neuroretinitis

What are some of the other causes of neuroretinitis?

- Bartonellosis
Uveitis: **Posterior**

*If inflammation is located...*

- Primarily in the choroid
  - *It is called:*
  - Choroiditis

- In both the choroid and the retina
  - *It is called:*
  - Chorioretinitis or Retinochoroiditis

- Primarily in the retina
  - *It is called:*
  - Retinitis

If inflammation is located involving the ONH and the retina:

- *It is called:*
- Neuroretinitis

**What are some of the other causes of neuroretinitis?**

- Syphilis/sarcoid/TB
- Toxocariasis
- Toxoplasmosis
- Lyme
- DUSN
- Malignant HTN
- Increased ICP
- AION
- Leber’s idiopathic stellate neuroretinitis
- Bartonellosis
Uveitis: **Posterior**

*If inflammation is located…*

- Primarily in the choroid
  - *It is called:* Choroiditis
- In both the choroid and the retina
  - *It is called:* Chorioretinitis or Retinochoroiditis
- Primarily in the retina
  - *It is called:* Retinitis

**Involving the ONH and the retina**
- *It is called:* Neuroretinitis

**What are some of the other causes of neuroretinitis?**

**Of these, which is the most common cause?**

- Bartonellosis
- Syphilis/sarcoid/TB
- Toxocariasis
- Toxoplasmosis
- Lyme
- DUSN
- Malignant HTN
- Increased ICP
- AION
- Leber’s idiopathic stellate neuroretinitis
- Bartonellosis
Uveitis: **Posterior**

*If inflammation is located...*

- Primarily in the choroid  
  - *It is called:*  
  - **Choroiditis**
- In both the choroid and the retina  
  - *It is called:*  
  - **Chorioretinitis or Retinochoroiditis**
- Primarily in the retina  
  - *It is called:*  
  - **Retinitis**

**Involving the ONH and the retina**  
- *It is called:*  
- **Neuroretinitis**

- Syphilis/sarcoid/TB
- Toxocariasis
- Toxoplasmosis
- Lyme
- DUSN
- Malignant HTN
- Increased ICP
- AION
- Leber's idiopathic stellate neuroretinitis
- **Bartonellosis**

*What are some of the other causes of neuroretinitis?*

*Of these, which is the most common cause?*  
*Bartonella*, by a mile
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*

*Bartonella henselae*
Uveitis: *Bartonellosis*

**Basics**

*What is the causative organism in Bartonellosis?*
*Bartonella henselae*

*What sort of organism is it (in a microbiology sense)?*
Uveitis: Bartonellosis

Basics

What is the causative organism in Bartonellosis?
Bartonella henselae

What sort of organism is it (in a microbiology sense)?
It is a bacterium, specifically a rod vs cocci
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
*Bartonella henselae*

*What sort of organism is it (in a microbiology sense)?*
*It is a bacterium, specifically a rod*
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*

*Bartonella henslae*

*What sort of organism is it (in a microbiology sense)?*

It is a bacterium, specifically a rod

*Is it Gram positive, or Gram negative?*
Uveitis: Bartonellosis

Basics

What is the causative organism in Bartonellosis?
Bartonella henselae

What sort of organism is it (in a microbiology sense)?
It is a bacterium, specifically a rod

Is it Gram positive, or Gram negative?
It is G(-)

1) The uveitis is profiled
2) The profiled case is meshed
3) A differential diagnosis list is generated
4) Studies are obtained to identify the etiology
5) Treatment appropriate for the etiology is initiated
Bartonella henslae: Gram(-) rods
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*

*Bartonella henslæ*

*What sort of organism is it (in a microbiology sense)?*

It is a bacterium, specifically a rod

*Is it Gram positive, or Gram negative?*

It is G(-)

*How are humans infected?*
Uveitis: Bartonellosis

Basics

What is the causative organism in Bartonellosis?
Bartonella henselae

What sort of organism is it (in a microbiology sense)?
It is a bacterium, specifically a rod

Is it Gram positive, or Gram negative?
It is G(-)

How are humans infected?
Via a bite, scratch or lick from a cat (especially kittens)
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
*Bartonella henslae*

*What sort of organism is it (in a microbiology sense)?*
*It is a bacterium, specifically a rod*

*Is it Gram positive, or Gram negative?*
*It is G(-)*

*How are humans infected?*
*Via a bite, scratch or lick from a cat (especially kittens)*

*What is the common name for Bartonellosis?*
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
*Bartonella henselae*

*What sort of organism is it (in a microbiology sense)?*
It is a bacterium, specifically a rod

*Is it Gram positive, or Gram negative?*
It is G(-)

*How are humans infected?*
Via a bite, scratch or lick from a cat (especially kittens)

*What is the common name for Bartonellosis?*
Cat-scratch disease (CSD)
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
*Bartonella henselae*

*What sort of organism is it (in a microbiology sense)?*
*It is a bacterium, specifically a rod*

*Is it Gram positive, or Gram negative?*
*It is G(-)*

*How are humans infected?*
*Via a bite, scratch or lick from a cat (especially kittens)*

*What is the common name for Bartonellosis?*
*Cat-scratch disease (CSD)*

*What animals serve as the reservoir for the disease?*
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
*Bartonella henselae*

*What sort of organism is it (in a microbiology sense)?*
*It is a bacterium, specifically a rod*

*Is it Gram positive, or Gram negative?*
*It is G(-)*

*How are humans infected?*
*Via a bite, scratch or lick from a cat (especially kittens)*

*What is the common name for Bartonellosis?*
*Cat-scratch disease (CSD)*

*What animals serve as the reservoir for the disease?*
*The cat is the primary reservoir*
Bartonellosis

Basics

What is the causative organism in Bartonellosis?
Bartonella henselae

What sort of organism is it (in a microbiology sense)?
It is a bacterium, specifically a rod

Is it Gram positive, or Gram negative?
It is G(-)

How are humans infected?
Via a bite, scratch or lick from a cat (especially kittens)

What is the common name for Bartonellosis?
Cat-scratch disease (CSD)

What animals serve as the reservoir for the disease?
The cat is the primary reservoir

What regions of the US have the highest annual incidence of CSD?
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*

*Bartonella henselae*

*What sort of organism is it (in a microbiology sense)?*

It is a bacterium, specifically a rod

*Is it Gram positive, or Gram negative?*

It is G(-)

*How are humans infected?*

Via a bite, scratch or lick from a cat (especially kittens)

*What is the common name for Bartonellosis?*

Cat-scratch disease (CSD)

*What animals serve as the reservoir for the disease?*

The cat is the primary reservoir

*What regions of the US have the highest annual incidence of CSD?*

The South, California, and Hawaii, and two specific states outside of it
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
*Bartonella henslæ*

*What sort of organism is it (in a microbiology sense)?*
*It is a bacterium, specifically a rod*

*Is it Gram positive, or Gram negative?*
*It is G(-)*

*How are humans infected?*
*Via a bite, scratch or lick from a cat (especially kittens)*

*What is the common name for Bartonellosis?*
*Cat-scratch disease (CSD)*

*What animals serve as the reservoir for the disease?*
*The cat is the primary reservoir*

*What regions of the US have the highest annual incidence of CSD?*
*The South, California, and Hawaii*
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
Bartonella henselae

*What sort of organism is it (in a microbiology sense)?*
It is a bacterium, specifically a rod

*Is it Gram positive, or Gram negative?*
It is G(-)

*How are humans infected?*
Via a bite, scratch or lick from a cat (especially kittens)

*What is the common name for Bartonellosis?*
Cat-scratch disease (CSD)

*What animals serve as the reservoir for the disease?*
The cat is the primary reservoir

*What regions of the US have the highest annual incidence of CSD?*
The South, California, and Hawaii

*What time of year is it most likely to occur?*
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
*Bartonella henslai*

*What sort of organism is it (in a microbiology sense)?*
*It is a bacterium, specifically a rod*

*Is it Gram positive, or Gram negative?*
*It is G(-)*

*How are humans infected?*
*Via a bite, scratch or lick from a cat (especially kittens)*

*What is the common name for Bartonellosis?*
*Cat-scratch disease (CSD)*

*What animals serve as the reservoir for the disease?*
*The cat is the primary reservoir*

*What regions of the US have the highest annual incidence of CSD?*
*The South, California, and Hawaii*

*What time of year is it most likely to occur?*
*The fall and winter months*
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
Bartonella henselae

*What sort of organism is it (in a microbiology sense)?*
It is a bacterium, specifically a rod

*Is it Gram positive, or Gram negative?*
It is G(-)

*How are humans infected?*
Via a bite, scratch or lick from a cat (especially kittens)

*What is the common name for Bartonellosis?*
Cat-scratch disease (CSD)

*What animals serve as the reservoir for the disease?*
The cat is the primary reservoir

*What regions of the US have the highest annual incidence of CSD?*
The South, California, and Hawaii

*What time of year is it most likely to occur?*
The fall and winter months

*What age group is most likely to be affected?*
Uveitis: **Bartonellosis**

**Basics**

*What is the causative organism in Bartonellosis?*
Bartonella henselae

*What sort of organism is it (in a microbiology sense)?*
It is a bacterium, specifically a rod

*Is it Gram positive, or Gram negative?*
It is G(-)

*How are humans infected?*
Via a bite, scratch or lick from a cat (especially kittens)

*What is the common name for Bartonellosis?*
Cat-scratch disease (CSD)

*What animals serve as the reservoir for the disease?*
The cat is the primary reservoir

*What regions of the US have the highest annual incidence of CSD?*
The South, California, and Hawaii

*What time of year is it most likely to occur?*
The fall and winter months

*What age group is most likely to be affected?*
Children under the age of 10 years
Uveitis: **Bartonellosis**

**Basics**

*How does CSD present?*

---First, a three words appears at the inoculation site---
Uveitis: *Bartonellosis*

**Basics**

*How does CSD present?*

--First, a focal vesciculopustular rash appears at the inoculation site

--

1) The uveitis is profiled
2) The profiled case is meshed
3) A differential diagnosis list is generated
4) Studies are obtained to identify the etiology
5) Treatment appropriate for the etiology is initiated
Bartonellosis: Focal vesciculopustular rash
Uveitis: **Bartonellosis**

**Basics**

*How does CSD present?*

--First, a focal vesciculopustular rash appears at the inoculation site

---later, amount of time two words--- develops, accompanied by a two different words
Uveitis: **Bartonellosis**

**Basics**

*How does CSD present?*
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome
Bartonellosis: Regional LAD
Uveitis: Bartonellosis

**Basics**

*How does CSD present?*
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*
Uveitis: *Bartonellosis*

**Basics**

*How does CSD present?*

--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*

5-10
Uveitis: *Bartonellosis*

**Basics**

*How does CSD present?*

--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*

5-10

*What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)*
Uveitis: **Bartonellosis**

*Basics*

*How does CSD present?*
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*
5-10

*What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)*
Parinaud oculoglandular syndrome (POS)
Uveitis: **Bartonellosis**

**Basics**

*How does CSD present?*

--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*

5-10

*What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)*

Parinaud oculoglandular syndrome (POS)

*What are the two hallmarks of POS?*

--
--
Uveitis: **Bartonellosis**

### Basics

*How does CSD present?*

--First, a focal vesiculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*

5-10

*What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)*

Parinaud oculoglandular syndrome (POS)

*What are the two hallmarks of POS?*

--A unilateral granulomatous **conjunctivitis** (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy
Bartonellosis: Parinaud oculoglandular syndrome: Conj granuloma
Bartonellosis: Parinaud oculoglandular syndrome: Preauricular LAD
Uveitis: **Bartonellosis**

**Basics**

*How does CSD present?*
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*
5-10

*What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)*
**Parinaud oculoglandular syndrome (POS)**

*What are the two hallmarks of POS?*
--A unilateral granulomatous **conjunctivitis** (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

*Impaired upgaze, lid retraction, nystagmus, light-near dissociation?*

*What about the other S/S—impaired upgaze, lid retraction, nystagmus, and light-near dissociation?*
Uveitis: **Bartonellosis**

**Basics**

How does CSD present?
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

What percent of pts will go on to develop ophthalmic involvement?
5-10

What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)
**Parinaud oculoglandular syndrome (POS)**

What are the two hallmarks of POS?
--A unilateral granulomatous conjunctivitis (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy
--Impaired upgaze, lid retraction, nystagmus, light-near dissociation?

What about the other S/S—impaired upgaze, lid retraction, nystagmus, and light-near dissociation?
Those are the S/S of **Parinaud syndrome**, not Parinaud oculoglandular syndrome
Uveitis: *Bartonellosis*

**Basics**

How does CSD present?
--First, a focal vesiculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

What percent of pts will go on to develop ophthalmic involvement?
5-10

What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)
**Parinaud oculoglandular syndrome (POS)**

What are the two hallmarks of POS?
--A unilateral granulomatous *conjunctivitis* (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

--Impaired upgaze, lid retraction, nystagmus, light-near dissociation?

What about the other S/S—impaired upgaze, lid retraction, nystagmus, and light-near dissociation?
Those are the S/S of **Parinaud syndrome**, not Parinaud oculoglandular syndrome

*Do Parinaud syndrome and Parinaud oculoglandular syndrome have anything to do with each other?*
Uveitis: **Bartonellosis**

### Basics

How does CSD present?
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

What percent of pts will go on to develop ophthalmic involvement?
5-10

What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)
**Parinaud oculoglandular syndrome (POS)**

What are the two hallmarks of POS?
--A unilateral granulomatous **conjunctivitis** (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

---Impaired upgaze, lid retraction, nystagmus, light-near dissociation?

What about the other S/S—impaired upgaze, lid retraction, nystagmus, and light-near dissociation?
Those are the S/S of **Parinaud syndrome**, not Parinaud oculoglandular syndrome

*Do Parinaud syndrome and Parinaud oculoglandular syndrome have anything to do with each other?*
Other than being described by and named after the same dude, no
**Uveitis: Bartonellosis**

**Basics**

*How does CSD present?*
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*
5-10

*What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)*
Parinaud oculoglandular syndrome (POS)

*What are the two hallmarks of POS?*
--A unilateral granulomatous conjunctivitis (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

We tend to think of conjunctivitis as coming in two ‘flavors:’ [ ] and [ ]. Note that granulomatous conjunctivitis represents an entirely different clinical entity.
**Uveitis: **Bartonellosis

**Basics**

How does CSD present?
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

What percent of pts will go on to develop ophthalmic involvement?
5-10

What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)
Parinaud oculoglandular syndrome (POS)

What are the two hallmarks of POS?
--A unilateral granulomatous conjunctivitis (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

We tend to think of conjunctivitis as coming in two ‘flavors:’ Papillary and follicular. Note that granulomatous conjunctivitis represents an entirely different clinical entity.
Uveitis: **Bartonellosis**

**Basics**

*How does CSD present?*
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*
5-10

*What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)*
Parinaud oculoglandular syndrome (POS)

*What are the two hallmarks of POS?*
--A unilateral granulomatous **conjunctivitis** (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

*Is Bartonella the only bug that causes POS?*
Uveitis: **Bartonellosis**

**Basics**

How does CSD present?
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

What percent of pts will go on to develop ophthalmic involvement?
5-10

What is the most common ophthalmic manifestation? *(Hint: It’s not neuroretinitis)*
Parinaud oculoglandular syndrome (POS)

What are the two hallmarks of POS?
--A unilateral granulomatous **conjunctivitis** (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

Is *Bartonella* the only bug that causes POS?
No, a handful of others can as well:
--
--
--
How does CSD present?
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

What percent of pts will go on to develop ophthalmic involvement?
5-10

What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)
Parinaud oculoglandular syndrome (POS)

What are the two hallmarks of POS?
--A unilateral granulomatous conjunctivitis (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

Is Bartonella the only bug that causes POS?
No, a handful of others can as well:
--Chlamydia trachomatis
--Francisella tularensis
--Syphilis
--TB
Uveitis: **Bartonellosis**

Basics

*How does CSD present?*
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*
5-10

*What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)*
Parinaud oculoglandular syndrome (POS)

*What are the two hallmarks of POS?*
--A unilateral granulomatous **conjunctivitis** (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

*Is Bartonella the only bug that causes POS?*
No, a handful of others can as well:
--*Chlamydia trachomatis*
--**Francisella tularensis**
--Syphilis
--TB

*F. tularensis is the causative organism for what disease?*
Uveitis: **Bartonellosis**

**Basics**

*How does CSD present?*
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

*What percent of pts will go on to develop ophthalmic involvement?*
5-10

*What is the most common ophthalmic manifestation? (Hint: It’s not neuroretinitis)*
Parinaud oculoglandular syndrome (POS)

*What are the two hallmarks of POS?*
--A unilateral granulomatous **conjunctivitis** (note: NOT anterior uveitis)
--Ipsilateral preauricular and/or submandibular lymphadenopathy

*Is Bartonella the only bug that causes POS?*
No, a handful of others can as well:
--*Chlamydia trachomatis*
--**Francisella tularensis**
--Syphilis
--TB

*F tularensis is the causative organism for what disease?*
Tularemia
Uveitis: **Bartonellosis**

**Basics**

How does CSD present?
--First, a focal vesciculopustular rash appears at the inoculation site
--1-2 weeks later, regional lymphadenopathy develops, accompanied by a flulike syndrome

What percent of pts will go on to develop ophthalmic involvement?
5-10

What is the most common ophthalmic manifestation? *(Hint: It’s not neuroretinitis)*
Parinaud oculoglandular syndrome (POS)

What are the two hallmarks of POS?
--A unilateral granulomatous **conjurivatis** *(note: NOT anterior uveitis)*
--Ipsilateral preauricular and/or submandibular lymphadenopathy

Is Bartonella the only bug that causes POS?
No, a handful of others can as well:
-- *Chlamydia trachomatis*
-- **Francisella tularensis**
-- Syphilis
-- TB

*F tularensis is the causative organism for what disease?*
Tularemia

*What event would clue you in that a pt might have tularemia?*
Uveitis: **Bartonellosis**

**Basics**

How does CSD present?
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*F. tularensis* is the causative organism for what disease?
Tularemia

What event would clue you in that a pt might have tularemia?
Direct contact with wild animals (eg, rabbits; raccoons)
**Uveitis: Bartonellosis**

**Basics**

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There are several noninfectious causes of Parinaud oculoglandular syndrome. Which should come to mind here?
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**Why should sarcoid come to mind?**

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No, a handful of others can as well:
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--Francisella tularensis
--Syphilis!
--TB!
--Sarcoid!

*Why should sarcoid come to mind?*
Because once again, it is showing up in a DDx alongside syphilis and TB. The three ‘great imitators’ strike again!

*There are several noninfectious causes of Parinaud oculoglandular syndrome.*
*Which should come to mind here?*
Uveitis: \textit{Bartonellosis}

Neuroretinitis

What percent of CSD pts will go on to develop neuroretinitis?
Uveitis: **Bartonellosis**

What percent of CSD pts will go on to develop neuroretinitis?
Only 1-2
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Neuroretinitis

*What percent of CSD pts will go on to develop neuroretinitis?*
Only 1-2

*How does CSD neuroretinitis present?*
Uveitis: *Bartonellosis*

What percent of CSD pts will go on to develop neuroretinitis?
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How does CSD neuroretinitis present?
The pt will complain of acute unilateral decreased vision
Uveitis: **Bartonellosis**

**Neuroretinitis**

*What percent of CSD pts will go on to develop neuroretinitis?*
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*How does CSD neuroretinitis present?*
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*What will DFE reveal?*
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Uveitis: **Bartonellosis**

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*How does CSD neuroretinitis present?*
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Disc edema and macular edema/exudates in a ‘star’ pattern (ie, radiating outward from the foveal center)
Bartonellosis: CSD: Neuroretinitis with ‘macular star’
Uveitis: **Bartonellosis**

**Neuroretinitis**

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Which layer of the retina contains the exudates, and is thus responsible for the macular star?
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Which layer of the retina contains the exudates, and is thus responsible for the macular star?
The outer plexiform layer (aka Henle's layer)
Uveitis: *Bartonellosis*

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In addition to neuroretinitis, how else can CSD manifest in the posterior pole?
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As a focal or multifocal retinochoroiditis (this is actually more common than neuroretinitis)
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Will slit-lamp exam reveal other signs of inflammation?
Yes, anterior and vitreous cell are both usually present
Uveitis: *Bartonellosis*

How is the diagnosis of CSD neuroretinitis made?
Uveitis: *Bartonellosis*

**Diagnosis**

*How is the diagnosis of CSD neuroretinitis made?*

Via the clinical presentation accompanied by confirmatory labs

```
1) The uveitis is profiled  
2) The profiled case is meshed  
3) A differential diagnosis list is generated  
4) Studies are obtained to identify the etiology  
5) Treatment appropriate for the etiology is initiated
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Uveitis: Bartonellosis

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*How is the diagnosis of CSD neuroretinitis made?*
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*What is the natural course of CSD in general, and CSD neuroretinitis in particular?*
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CSD is almost always a self-limiting condition; the vast majority of pts will recover completely
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*What about steroids--should they be given?*
The *Uveitis* book says their efficacy is “unknown”