



Overview

- Definition
 - Gram-negative, oxidase-negative aerobic bacilli that reside in human RBCs and endothelial cells
 - Multiple species exist, 8 of 21 are pathogenic to humans
 - *Bartonella henselae* commonly associated with neuroretinitis, cat-scratch disease (CSD), Parinaud’s oculoglandular syndrome (POGS)
- Symptoms
 - Decreased vision, 20/25 to 20/200, may be worse
 - Floaters
 - Redness
 - Irritation
- Laterality
 - Mostly unilateral, can be bilateral and asymmetric
- Course
 - Onset of ocular symptoms 1 month after inoculation
 - Typically improves in 2–3 months with treatment
- Age of onset
 - Any age, more common in children and adolescents
- Gender/race
 - Occurs worldwide
- Systemic association
 - Cat-scratch disease
 - Parinaud’s oculoglandular syndrome

Exam: Ocular

Anterior Segment

- Follicular conjunctivitis
 - Conjunctival granuloma if primary site of inoculation
- Anterior uveitis
- +/- APD

Posterior Segment

- Vitritis
- Neuroretinitis
 - Optic disc edema, significant
 - Macular star – radial lipid exudates, may be outside macula
 - May resolve in 8–12 weeks
- Focal or multifocal retinitis or choroiditis, mass
 - May be highly vascular and resemble bacillary angiomatosis
- Retinal vasculitis
 - Intraretinal hemorrhages and retinal ischemia
 - Vascular occlusion (BRAO or BRVO)
- Serous macular detachment

Exam: Systemic

- Transmission through cat scratch or bite or open wounds exposed to cat saliva or flea feces
- Systemic findings after inoculation
 - 3–10 days – focal granuloma, small erythematous papule on skin at site of bite/scratch
 - 7–14 days – conjunctival injection, chemosis, and water discharge
 - 2–3 weeks – regional lymphadenopathy, malaise, myalgias, fatigue, low-grade fever (faded skin papule)
- Immunocompromised patients
 - May develop disseminated disease – endocarditis, meningitis, arthritis, osteomyelitis, pneumonia, hepatosplenomegaly

Imaging

- OCT: macular thickening, intraretinal hyperreflective deposits, subretinal fluid, disc thickening
- OCT-A: telangiectasias near disc

- FA: early peripapillary telangiectasias with disc and vascular leakage; late disc leakage
- Perimetry: cecentral scotoma, paracentral scotoma, enlarged blind spot
- VEP: reduced amplitude and increased latency in affected eye

Laboratory and Radiographic Testing

- Serologic testing, IgG, IgM
 - Indirect fluorescent antibody (IFA)
88% sensitivity and 94% specificity
 - Enzyme immunoassay (EIA) and Western blot
86–95% sensitivity and 96% specificity for IgG
Potential for cross-reactivity between species
 - PCR

Differential Diagnosis

- Toxocariasis
- Tuberculosis
- Syphilis
- Lyme disease
- Sarcoidosis
- Behcet disease
- Rickettsiosis
- Chikungunya
- Systemic hypertension
- Diabetic papillopathy
- Anterior ION
- Papilledema

Treatment

- No consensus on treatment
- May be observed in mild-to-moderate immunocompetent patient
- Doxycycline 100 mg BID PO × 10–14 days in >8 years old
 - May also give erythromycin, TMP-SMX, rifampin, or IM gentamycin
- Severe infection – IV doxycycline and erythromycin with rifampin
- Prednisone with antibiotics, 1 mg/kg/day with taper
- Immunocompromised patients may require treatment up to 4 months
- Conjunctival infections may be treated with combination drops and oral

Referral/Comanagement

- Infectious disease specialist
- Other consults depending on presenting systemic symptoms