Ocular Syphilis, the Great Masquerader

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Introduction

- Syphilis typically advances through four different stages
- Primary
- Secondary
- Latent
- Tertiary
- Ocular syphilis can develop during any of these stages!
- It is a rare condition that can involve any structure of the eye and mimic a variety of eye diseases:
  - Uveitis
  - Diminished visual acuity
  - Optic neuropathy
  - Retinal vasculitis

Case Description

- A 47-year-old man with no PMH presented with six months of decreasing vision in his right eye
- Initial ophthalmology exam revealed cystoid macular edema
- He was treated with local steroids with minimal relief, and then developed retinal detachment
- After retina surgery, his vision did not improve and he had worsening inflammation
- A broad serological workup later revealed RPR of 1:128 and FTA, prompting hospital admission
- He denied STIs, but had penile lesions in the past and had a history of high-risk sexual behavior
- Physical exam showed diffuse, pruritic, maculopapular rashes scattered throughout his body (see below)
- The patient later endorsed that the rashes had been present for roughly three months prior to admission

Macular Edema Throughout Treatment Course

- The patient displayed evidence of a Jarisch-Herxheimer reaction via Optical Coherence Tomography (OCT) imaging
  - Pre-penicillin: OCT displays mild cystoid macular edema
  - 17 days post-treatment: OCT displays paradoxical worsening of inflammation and macular edema
- This is secondary to lysis of organisms, release of endotoxin-like lipoproteins, and increase in TNF-a, IL-6, and IL-8
- Note: although OCT shows worsening of macular edema during this stage, clinical symptoms improved with the IV penicillin (PCN)
- 28 days post-treatment: improved macular edema, completely resolved

Review: Stages and Treatment of Syphilis

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<th>Clinical manifestations</th>
<th>Treatment</th>
<th>Post-treatment monitoring</th>
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| Early syphilis          | - Primary: single painless chancre +/- regional lymphadenopathy
- Secondary: systemic illness + rash (often palms and soles)
- Early latent: infected by blood testing, but no symptoms (< 1 yr)
| Penicillin G benzathine IM 1x
Alternatives: Doxycycline, ceftriaxone, tetracycline, amoxicillin + probenecid |
| Clinical exam and blood testing with RPR at 6 and 12 months |
| Late syphilis           | - Tertiary: late syphilis with cardiovascular manifestations and gummatous disease
- Late latent: infected by blood testing, but no symptoms (> 1 yr)
| Penicillin G benzathine IM once a week for 3 weeks
Alternatives: doxycycline or ceftriaxone |
| Clinical exam and blood testing with RPR at 6, 12, and 24 months |

Neurosyphilis (can occur at any time of infection course)

- Early Neurosyphilis: can have meningitis, meningoencephalitis, or neuromeningeal disease (meningitis + stroke), vision or hearing loss
- Late neurosyphilis: involves the brain and spinal cord (dementia and tabes dorsalis)
- Aqueous penicillin G IV for 10-14 days
- Patients allergic to penicillin should be desensitized
- Alternatives: ceftriaxone

Discussion

- Ocular syphilis can present with any visual symptom, thus internists should be on the lookout for signs that will guide us towards the diagnosis
  - Early treatment drastically improves outcomes
  - One retrospective chart review determined that visual acuity improved significantly in 80% of patients treated
  - The main factor associated with poor prognosis was over 28 days of ocular symptoms before diagnosis (1)
  - Early recognition and treatment is key!

  - Detecting ocular syphilis early is difficult because of its varied symptomatology
    - One case series reported that macular edema was present in 52% of ocular syphilis patients (2)
    - Another case series reported that uveitis was the most common symptom, and that case series featured six patients with retinal detachment (3)
    - As internists, if we see mention of such symptoms on chart review in a patient with unspecified ocular symptoms and high-risk sexual behavior, then a syphilis work-up should be pursued!

  - While ocular syphilis is typically associated with neurosyphilis, this is not always the case
    - A case series determined that only 22% of patients with ocular syphilis had neurological symptoms (3)
    - Thus, a benign neurologic exam does not rule out ocular syphilis, as was the case with this patient!

Teaching Points

- Early diagnosis and treatment (within 28 days of symptom onset) is key to good patient outcomes
- Patients respond well to IV penicillin G
- If a patient presents with macular edema, uveitis and/or retinal detachment, think of ocular syphilis, especially if they have high-risk sexual behavior
- The majority of patients with ocular syphilis have benign neurological exams, thus not a rule out test!

References