Title: Panning for a Diagnosis: A Perplexing Case of Panuveitis

Abstract: Panuveitis is classified as generalized inflammation throughout the entire uveal tract from an infectious, inflammatory, or unknown origin. The following case outlines the ongoing investigation into the etiology of panuveitis in a multifactorial patient.

I. Case History

- Patient Demographics: 32 year-old Caucasian male
- Chief Complaint: Decreased vision OS for 3 weeks, starting as floaters and progressively worsening to blur. Also reports dull pain, pressure, and light sensitivity OS.
- Ocular History: PRK OU in 2006
- Medical History: TBI, migraines, irritable bowel syndrome, sleep apnea, oral ulcers, pulmonary nodules, Frey’s Syndrome s/p right parotidectomy, pigmented purpuric dermatitis
- Medications: None
- Other salient information: 1.5 PPD smoker, admits marijuana use, denies IVDU

II. Pertinent findings

- Examination
  - Entering VA sc: OD 20/20, OS 20/60 PHNI
  - Pupils: ERRL with mild APD OS
  - Extra-ocular motility: full without restrictions OU, faint pain on all gazes OS
  - Confrontation visual fields: FTFC OD/OS
  - Intraocular pressure (NCT): OD 17mmHg, OS 15mmHg
  - Anterior segment: OS 2+ AC cell, all other findings were unremarkable OD/OS
  - Posterior segment:
    - Vitreous: OS 3+ cell, haze
    - Periphery: OS several white, isolated, round, deep retinal lesions greatest superioirly, scattered peripheral dot/blot hemorrhages
  - All other posterior segment findings were unremarkable OD/OS

- Laboratory studies: CBC – elevated WBC and neutrophils, low lymphocytes and monocytes
  - Negative: ESR, CRP, RPR, FTA-ABS, ANA, ANCA, Lyme, T-SPOT.TB, ACE, Lysozyme, HLA-B27, HLA-B51

- Radiology studies: Chest x-ray – no pathologic adenopathy

III. Differential diagnosis

- Primary/leading:
  - Sarcoïdosis: Retinitis with lesions deep in retina or choroid. No adenopathy seen on chest x-ray, incidental finding of pulmonary nodules on chest CT several years prior. Negative ACE and lysozyme but sensitivity and specificity of lab tests are limited.
  - Tattoo-associated Uveitis: Patient has two tattoos that were done at the same place and time that periodically itch and swell. Thought to be a possible manifestation of sarcoidosis, but not proven. 
  - Behcet’s: Retinitis typically has a more superficial appearance. Patient has history of skin rash and oral ulcers. Northern European ancestry makes Behcet’s less likely than sarcoidosis. HLA-B51 was negative, although not a definitive diagnostic test.

- Others:
  - Lyme: Lives in the woods but no known tick bites. Unlikely as Lyme serology was negative.
  - Primary Intraocular Lymphoma: Suspected when eye does not respond to therapy as expected. Vitreous biopsy to confirm.
  - Idiopathic: Diagnosis of exclusion
IV. Diagnosis and discussion

Panuveitis denotes involvement of the uvea as well as vitreous and retina without a primary site of inflammation. Identifying the underlying systemic association helps to better manage and treat the condition appropriately. There are several factors to consider when investigating the causative disease, and diagnosis involves examining the patient as a whole.

This particular case is challenging in determining the etiology of inflammation. The patient’s medical, demographic, and geographical history point us in several different directions. History of oral ulcers and joint aches point to Behcet’s, chronic cough and tattoo swelling suggest Sarcoidosis, while skin rashes can be indicative of both conditions. The patient lives in the woods of northern Maine which puts him at higher risk for tick bites, indicating possible Lyme disease. Irritable bowel syndrome suggests an HLA-B27 association. Despite having multiple differentials, several lab and radiology studies are negative, definitively ruling out less probable disorders like syphilis and TB, while still leaving some open to possibility.

The primary differentials have been narrowed down to Sarcoidosis and Behcet’s, with limitations to definitive diagnosis being chest CT with contrast and fluorescein angiography. Additionally, primary intraocular lymphoma cannot be ruled out, and remains on differential list if the inflammation does not respond as expected to full therapy. For now, we will continue to treat the ocular inflammation and explore possible systemic associations.

V. Treatment, management

- Day 1: VA Maine- Durezol 0.05% BID OS and Cyclopentolate 1% BID OS, ordered labs and chest x-ray, referral to uveitis specialist.
- Day 7: VA Maine- Improvement in signs and symptoms. Continue Durezol BID OS for 1 week, then taper to QD for 1 week; discontinue Cyclopentolate.
- Day 21: JPVA Uveitis specialist- worsening of signs and symptoms. Increase Durezol to q1-2hr OS while awake and restart Cyclopentolate BID OS.
- Day 32: VA Maine- Significant improvement in signs and symptoms. Begin very slow taper of Durezol over several weeks. Schedule chest CT with contrast.

Management of panuveitis involves three primary objectives: inhibit vision-threatening complications, alleviate symptoms, and treat the underlying condition when applicable. Appropriate antimicrobial agents are indicated for infectious etiologies, i.e. bacterial, viral, parasitic. Anti-inflammatory therapy is the mainstay of treatment for noninfectious panuveitis, topical and/or systemic depending on severity. Cycloplegics are given for pain management and prevention of posterior synechiae. Severe or recalcitrant cases may require immunosuppressive therapy, and diagnostic vitrectomy may be indicated in cases otherwise appearing idiopathic.

VI. Conclusion

Accurate diagnosis of the systemic association is key in order to employ effective therapy of panuveitis. Achieving a successful outcome in patients requires quieting the inflammation with minimal side effects of therapy, identifying and treating associated systemic conditions, preventing recurrence, and obtaining satisfactory visual recovery. This is considerably true in this case involving a young male with many productive years of life still ahead.

Bibliography