RETINOCHOROIDITIS SECONDARY TO ACTIVE TOXOPLASMOSIS: A CASE REPORT

ABSTRACT (word count: 34)
Toxoplasmosis presents with a straightforward diagnostic profile based on patient demographics, symptoms, and clinical findings. This case report reviews the presentation, treatment and management of patients with toxoplasmosis, discussing common and rare clinical findings.

I. Case History
- Patient demographics
  - 43 year old Hispanic male
- Chief complaint
  - Emergency Visit: Pain OS that has been worsening for 1 week, worse in up gaze with reduction of VA OS
- Ocular, medical history
  - POhx:
    - (-) ocular injury/infection
    - (-) itching burning tearing redness HA diplopia weakness numbness in extremities
    - LEE Feb 2011 - unremarkable
  - PMhx:
    - May 2014 had PCP evaluation:
      - cholesterol and glucose blood work came back elevated per pt report; was educated and instructed to make changes to diet; 1 month f/u was scheduled was elevated and glucose; pt reported that he was scheduled to see PCP the following Monday
      - (-) DM, HTN, hyperlipidemia
      - (-) other medical conditions
- Medications/ Allergies
  - (-) medications
  - (-) NKDA, NKA.
- Other salient information
  - Pt reports to have been in Dominican Republic visiting family 3 months prior to visit Aug 2

II. Pertinent findings
- Clinical
  - Entering VAs c glasses
    - OD: +0.25-0.50x80 20/20
    - OS: +0.75-2.25x095 20/40, PH NI
  - Pupils: PERRL (-) APD OU
  - EOMs: FROM OU, pt reports pain superior temporal gaze OS
  - IOP - TAP c Fluress OU 1:45pm, lids held
    - OD: 10mmHg
    - OS: 12mmHg
- Physical
  - Biomicroscopy
    - OU lid/lash: capped and inspissated glands
    - OU Periorbital: clear
    - OU ConjScl: telangiectatic limbal vessels, prominent scleral vessel
    - OU tear film, cornea : clear
    - OU Iris: brown flat intact
    - OU A/C: deep and quiet
    - OU angles: 3x3
    - OU lens: clear
    - OU vitreous: cl; (-) cells
  - Fundus Evaluation (1% tropicamide, 2.5% phenylephrine OU)
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- OD C/D: 0.60; pink distinct  
- OS C/D: unable to discern C/D ratio; (+) optic nerve head edema (+) haze  
- OD NFL: intact  
- OS NFL: intact - limited view due to inflammatory processes affecting ONH and papillomaular bundle  
- OD vessels: normal caliber  
- OS vessels: + Vasculitis along arcades “Kyrieleis Arteritis”  
- OD macula: flat intact + FLR  
- OS macula: (+) edema (+) Paton’s folds  
- OD periphery: clear, no retinal holes tears or breaks  
- OS periphery: inflammation in posterior pole, S > I  

- Laboratory studies  
  - Blood Analysis (via MD) taken 8/05/14, reported 8/07/14  
    - Panel 162222  
      - HIV 1/O/2 Abs-ICMA  
      - HIV 1/O/2 Abs-Index Value  
      - HIV 1/O/2 Abs, Qual  
    - HLA-A (IR) - Will Follow / Pending  
    - HLA-B (IR) - Will Follow / Pending  
    - Toxoplasma Aba IgG/IgM - HIGH  
      - Positive range > 7.9  
      - pt value = 159.0  
      - Results consistent with previous infection for more than 6 months  
    - Toxoplasma gondii Ab, IgG, Qn  
    - HSV 1 and 2-Specific Ab, IgG  
      - Positive range >1.09  
      - pt value = 47.50  
    - CMV (cytomegalovirus) Abs IgG  
      - Positive value >0.69  
      - pt value = 3.10  
      - positive result generally indicative of acute infection, reactivation or persistent IgM production  
    - CMV (cytomegalovirus) Abs IgM  
    - Factor V Leiden Mutation (clotting factor) - Will Follow/ Pending  
    - Toxocara Abs - specimen received and has been forwarded to another lab for testing - results pending  
    - Rubella Antibodies, IgG  
    - Angiotensin-Converting Enzyme  
    - Varicella-Zoster V Ab, IgG  
      - pt had positive response, indicative pt has been exposed to pathogen or administered specific immunoglobulins  
    - Antinuclear Antibodies Direct  
    - RPR  
    - Sedimentation Rate-Westergren  
    - T pallidum Ab (FTA-Ab)  
    - Lyme IgG/IgM Ab  
  - Others  
    - Autoflouresence Images  
      - OD: wnl  
      - OS: two hypoflourecent lesions ST and Inferior about 2DD away from ONH  

III. Differential diagnosis  
- Primary/leading  
  - Compressive lesion / tumor (though no proptosis or restriction of EOMs)
• Multiple Sclerosis
• NAION
• Childhood infections: measles, mumps, chickenpox
• Viral: mononucleosis, varicella zoster, encephalitis etc
• Contiguous inflammation of meninges, orbit, or sinuses
• Granulomatous inflammation: TB, syphilis, sarcoidosis, cryptococcus etc
• Toxoplasmosis (newly acquired)

IV. Diagnosis and discussion
• Elaborate on the condition
  • *Toxoplasma gondii* is an obligate intracellular protozoan parasite found worldwide. In the immunocompetent host, the infection either may be asymptomatic, causing no more than a flu-like syndrome, or may lead to more severe symptoms such as uveitis, pneumonia, pericarditis, myositis and neurological disorders (Bossi). Uveitis is the most common lesion caused by *T gondii* in immunocompetent individuals, whereas encephalitis is most commonly seen in immunocompromised individuals (Petersen). Retinochoroiditis caused by active toxoplasmic infection occurs mainly in the eyes; it can occur immediately or long after initial infection, acquired or congenital. (torda) . The reasons for reactivation of toxoplasmosis retinochoroiditis is not as clear; some theories hypothesize that rupture of cysts release viable parasites that induce necrosis and inflammation or that the patient exhibits a hypersensitivity reaction from unknown causes (Dupont). Recurrences of ocular lesions usually develop at the border of old scars and are attributed to rupture of tissue cysts located within the old lesions. A new active infection may be caused either by previous lesions in the brain or eyes carrying tissue cysts that have erupted or by reinfection (Zhang).

• Expound on unique features
  • Pt presented with acute onset of toxoplasmosis with optic disc swelling, with edema extending into the retina, neuroretinitis without a macular star, optic neuritis with vitritis, Kyrieleis arterialitis (periarterial exudate accumulation)
    • Kyrieleis’ plaques are always associated with inflammation. It is predominantly associated with toxoplasma infection but has been described in tuberculosis, syphilis, and mediterranean spotted fever (Krishnamurthy). Its presence reflects the severe intraocular inflammation experienced by the eye, but it does not worsen the prognosis (Munoz). Jain qualifies it as a rare condition in which white-yellowish exudates are placed in a beaded pattern within the retinal arteries. It is difficult to explain the “segmental arteritis”, Griffin and Bodian believed the plaques on the vessels possibly represented migration of exudates from the active choroiditis to the periarterial sheaths. However, Munoz does not feel that it is feasible because the vessels are not sheathed. *As there is no pathological study available in the literature, the nature of the beads is still unknown.* = will do research. Munoz theories that they may represent an immunological response to an infectious agent resulting in the deposition of immune cells and/or inflammatory debris within or adjacent to the vessel wall.

• (-) Chorioretinal scars OD, OS, OU

V. Treatment and Management
• Treatment
  
  08/04/2014
  • MD DDx was Toxo and started pt on cocktail of drugs
    • Azithromycin, Clindamycin, and Prednisone
    • Ordered Blood Tests (see above)
  
  08/14/2014
  • OD: cc 20/20
  • OS: cc 20/40
  • IOP OD 14mmHg OS 13mmHg
  • Notes: F/U pt reported improvement; the chorioretinal lesion has decreased in size and there is less vitreous inflammation
Reiterated to pt importance of seeing PCP to monitor for any blood sugar problems since pt is diabetic
- when pt was seen at UEC, pt did not report he had diabetes, was going to PCP the following week for F/U.
- In May 2014- pt was told he was borderline and to change food/diet initially
- Pt to be seen again within a few days for f/u care ; MD will consider taper of Prednisone at that time

Bibliography

VI. Conclusion
- Toxoplasmosis has many variants in presentation
- The value of AF proved to be a critical diagnostic tool in imaging to locate active toxoplasmosis lesions
- Kyrieleis arterititis was seen within this case which is not a S&S frequently considered in everyday optometric settings

VII. Images
- Daytona Optos imaging with Autofluoresence OU – to be viewed on poster