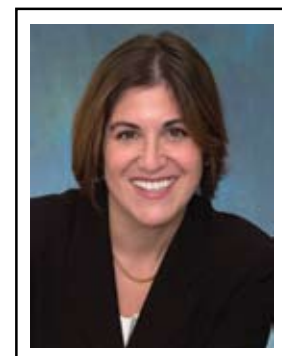




Grand Rounds

9-2-09

Moderator: Debra Goldstein, MD (*Attending*)



This week's Grand Rounds presents several interesting cases encountered by our uveitis faculty.

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Behçet's Disease: Rohan Shah, MD (*Resident*)



A 45 year-old Caucasian male presented with a sudden loss of vision in the right eye for 5 days, and floaters in the left eye for 1 week. One month prior, he had suffered an upper respiratory infection (URI) after which he developed pain and redness in the right eye. He saw an outside ophthalmologist where he was found to have anterior chamber (AC) inflammation in the right eye and was treated with steroid and homatropine drops. Subsequently, he developed redness of the left eye for which he was also treated with steroid and homatropine drops. One month later, he developed redness and blurred vision bilaterally that was associated with disc edema and vasculitis.

The patient had a history of oral ulcers that occurred approximately two times a year. He recalled having 6 episodes of these oral ulcers. He denied any history of genital ulcers or skin lesions. Family history was significant for his brother suffering periodic severe oral ulcers. Outside workup for syphilis, RF, CBC, BMP, ESR, CSR, PPD, ACE were negative.

On exam, vision was 20/200 in the right eye (OD) and 20/30 in the left (OS). He got 1/14 Ishihara color plates OD and 14/14 OS. Both pupils showed a red desaturated afferent papillary defect (APD) OU. His cornea showed fine endothelial dust inferiorly OD and midline OS. His AC showed 2+ cell and 1+ flare in both eyes. The lens showed pigment on the anterior capsule and his anterior vitreous had rare cell OD and 1+ cell OS. The dilated fundus exam (DFE) showed a normal disc OD with a white infarcted area sparing the fovea and sparing the disc (Fig. 1). In OS, his disc had 1+ hyperemia and vessels in both eyes showed arteritis (Fig. 2). The assessment was that this patient had acute iridocyclitis with retinal vasculitis bilaterally and branch retinal arterial occlusion (BRAO) of the macula OD likely secondary to Behçet's Disease.

This patient was started on oral steroids and cyclosporine, and HLA B5 was ordered but was negative. After a few months, his vision improved, but he continued to show signs of arteritis, so he was started on Humira. His prednisone was tapered and his cyclosporine was decreased. Over time, he developed a central scotoma OD, superotemporal hemorrhage OD, a new cotton wool spot in the inferotemporal region OS, and very late leakage just inferior to the disc OS on FA. He again developed active arteritis and was restarted on prednisone. He is to start treatment with Remeron instead of Humira.

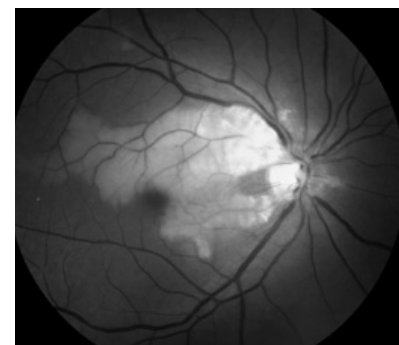


FIGURE 1. Red-free photograph of the right eye on presentation, demonstrating a branch retinal artery occlusion affecting the macula.

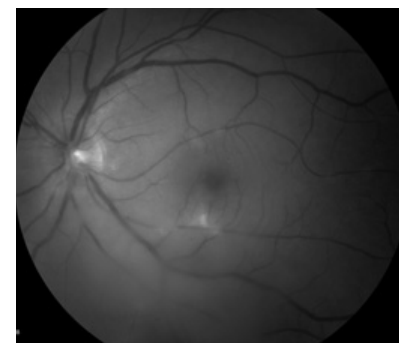


FIGURE 2. Red-free photograph of the left eye on presentation, with areas of vasculitis and arterial sheathing notable especially inferiorly.

BACKGROUND: Behçet's disease is a systemic condition of unknown etiology that can cause anterior and posterior uveitis along with systemic symptoms. It occurs primarily in people of Mediterranean and East Asian descent. The systemic symptoms included in the clinical diagnostic criteria include: 1) oral ulcers, 2) genital ulcers, 3) dermatologic manifestations such as erythema nodosum, and 4) ocular disease. Other neurological, cardiovascular, and gastrointestinal symptoms can occur. Ocular symptoms include a short lived hypopyon with AC reaction and posterior uveitis symptoms including BRAO, BRVO, arterial sheathing, CME, vitritis, retinal ischemia, and white, patchy vessel. Treatment includes steroids and immunomodulatory medications. Visual prognosis tends to be guarded in patients who do not receive treatment.

Systemic Lupus Erythematosus: Javaneh Abbasian, MD (*Resident*)



A 16 year-old African American female was recently seen by the uveitis service. The patient had a past medical history significant for fetal alcohol syndrome, mental retardation, and lived with a caretaker. The patient was noted to have declining vision 1 month prior to presentation as she was feeling for objects and bumping into walls. Addition history could not be obtained from the patient due to her mental limitations.

The patient's medical history was significant for systemic lupus erythematosus and bipolar disorder. She had no drug allergies, and was taking anti-psychotic medications and plaquenil. The patient's review of systems was negative for exposure to cats, tuberculosis, consumption of raw meats, and recent travel history. The patient's caretaker stated that the patient was complaining of more arthritis pain since the start of her visual symptoms.

The patient's last recorded vision in 2007 was 20/40 OU. On presentation in July 2009, her vision was count fingers in both eyes. Pupils were equal and reactive to light, extraocular motions were full and intraocular pressure was within normal limits. The patient's anterior segment exam was within normal limits. Her fundus exam showed bilateral central retinal artery occlusions, extensive cotton wool spots, vascular sheathing, and hemorrhage with exudates (Figs. 3-4).

The patient was immediately referred to rheumatology service for workup of systemic lupus erythematosus flare. Her vitals were within normal limits and specifically blood pressure was not elevated. The patient's labs showed elevated ESR, elevated dsDNA and ANA titers and low complement levels. The patient did not have elevated anti-cardiolipin antibodies. An MRI of the brain was ordered which demonstrated changes consistent with encephalopathy. The patient was then admitted to the pediatric unit and treated with pulse cyclophosphamide per arthritis service recommendations. She was also started on high dose IV solumedrol with a tapering dose of prednisone.



FIGURE 3. Composite color fundus photograph of the left eye, demonstrating a central retinal artery occlusion with extensive retinal nerve fiber layer edema, vascular sheathing, and intraretinal hemorrhages.

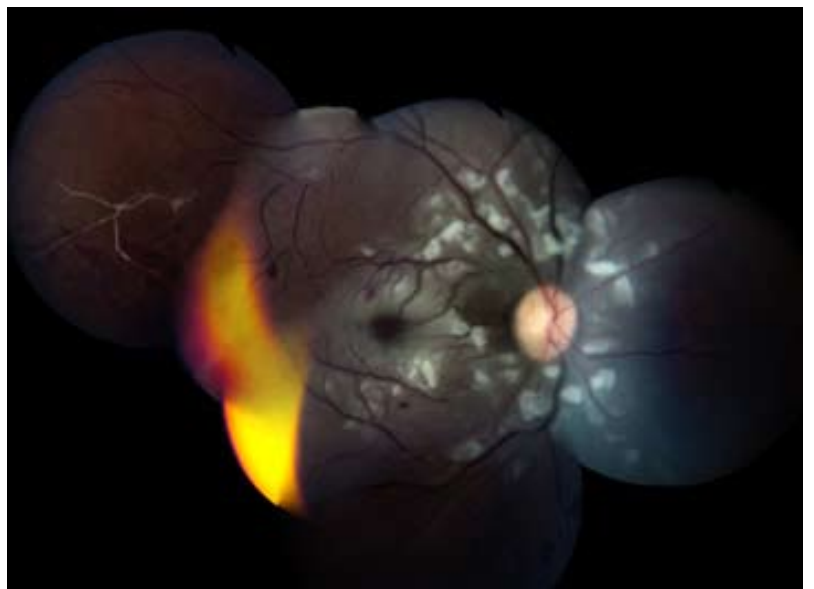


FIGURE 4. Composite color fundus photograph of the right eye, demonstrating a central retinal artery occlusion with extensive retinal nerve fiber layer edema, vascular sheathing (especially temporally), and intraretinal hemorrhages.

BACKGROUND This case demonstrates severe lupus vasculopathy OU. Importantly, this was the initial presentation of a severe lupus flare which included possible life threatening central nervous system involvement. It is important to promptly treat patients with severe lupus vasculopathy with immunosuppressive agents to avoid further systemic complications. In follow up clinical exams 1 month later, the patient was on a stable dose of Prednisone with resolving retinal changes. Her vision remains count fingers OU.

Ocular Ischemic Syndrome: Donny Hoang, MD (Resident)



A 68 year-old Caucasian male presented with blurred vision in the right eye. Past medical history included Raynaud's disease and idiopathic pulmonary fibrosis for which he underwent a lung transplant 2 years ago. Soon after his transplant, it was discovered that the lung donor was CMV+, and the patient was treated with courses of oral valgancyclovir followed by foscarnet.

Two months prior to presentation, the patient developed cloudy vision with floaters OD. He seen by an OSH retina specialist, who noted periphlebitis OD, and started a course of valgancyclovir for possible CMV retinitis OD. The patient underwent a vitreous tap OD; the resultant PCR was negative for HSV, VZV, CMV and toxoplasmosis. Fluorescein angiography OD showed disc leakage, vasculitis and arterial occlusions with areas of peripheral nonperfusion (Fig. 5). RPR, HIV and CMV were negative. Chest CT showed only fibrosis of the non-transplanted lung, and bronchoalveolar lavage was negative for pneumocystis. He was then referred to the UIC uveitis service for a second opinion regarding

diagnosis and treatment options.

On presentation, best corrected vision was 20/20 OD and 20/20 OS. Anterior segment exam of the right eye was notable for rare cell/trace flare and 1+ AV cell; while the left eye was unremarkable. Dilated fundus exam of the right eye was notable for vitritis, precipitates in posterior vitreous, 2 areas of yellow-white retinitis with superiorly which were less active versus pictures from 2 weeks prior at the OSH (Figs. 6-7). There were also multiple, white, sheathed arteries proximal to the areas of retinitis.

The patient was thought to have necrotizing retinitis OD (possibly secondary to CMV), which appeared less active vs. prior OSH photos. It was recommended to decrease the valgancyclovir dose to 900mg daily (due to nephrotoxicity). It was felt further intravitreal injections of ganciclovir (GCV) and foscarnet (FOS), or a GCV implant might be needed in the future. The patient was to follow-up with his OSH retina specialist.

The patient did not respond well, therefore was re-referred to UIC for consideration of a GCV implant. His vision OD was 20/50 and anterior segment exam was significant for fine keratic precipitates with 2+ flare and 2-3+ cell. There were anterior vitreous cells and multiple posterior vitreous precipitates. There remained 2 areas of retinitis superiorly with one completely inactive and one active. Given that patients without AIDS and CMVR can be more resistant to treatment, and this patient's past CMV viremia was resistant to GCV, a GCV implant was thought to have low likelihood of success. A trial of high-dose GCV intravitreal injections (in the range of 6000 micrograms/0.1cc) was suggested. If there was no response, the GCV implant would likely not be of benefit.

Per the OSH retina, the patient worsened and underwent a negative workup for primary intraocular lymphoma (PIOL), including vitreous biopsy, PET and MRI scan. Lyme serology was negative. The patient was referred to UIC for consideration of retinal biopsy to assess for PIOL. At that point, he was on prednisone 60 mg daily (for 1 month) and off valgancyclovir. Vision had dropped to 20/80 OD. Dilated fundus exam OD revealed a stable dense periphlebitis, extensive intraretinal hemorrhages and a stable area of white retinitis superiorly with few satellite lesions. At that point, the active vasculitis was felt to be either secondary to immune recovery uveitis or an active viral infection (that was very widespread). It was recommended to taper prednisone. Retinal biopsy was deferred since the clinical exam was not consistent with PIOL and it was recommended to start a trial of FOS 2,400 micrograms intravitreally weekly for 6 weeks. If there was no improvement, then consider proceeding to retinal biopsy.

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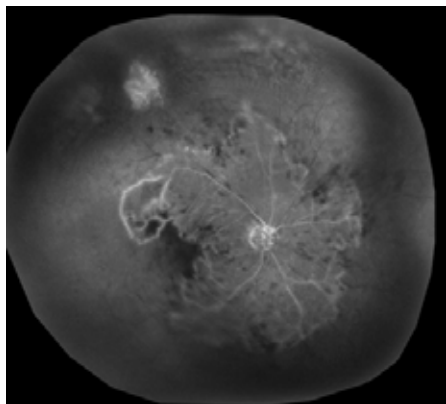


FIGURE 5. Fluorescein angiographic image of the right eye demonstrating disc leakage, marked peripheral vascular nonperfusion, and vasculitis. The hyperfluorescent area superotemporally is an area of retinitis.



FIGURE 6. Color fundus photo of the right eye demonstrating hazy media due to vitritis, edema notable along the nasal and inferior margins of the optic nerve, and areas of arterial sheathing along the superior and inferior arcades.



FIGURE 7. Peripheral composite photograph of the right eye demonstrating a superiotemporal area of retinal whitening and retinitis.

During the ensuing month, the patient received 3 FOS injections at the OSH, but then "lost vision" OD abruptly and saw OSH retina who recommended fluorescein angiography (showing profound peripheral ischemia extending to the fovea, vasculitis, arterial occlusions and shunt vessels). The patient returned to see the UIC uveitis service, at which time vision OD was hand motions. Anterior segment exam OD was notable for 4+ pigmented AC cells, 3+ flare, rubeosis at the pupil border with gonioscopy revealing fine rubeosis temporally (but open to ciliary body for 360 degrees). Dilated exam OD was obscured by a dense vitreous hemorrhage. At that point the differential diagnosis included ocular ischemic syndrome, given the profound ischemia OD with rubeosis. An intravitreal injection of bevacizumab was administered that day, and carotid dopplers were ordered, demonstrating mild obstruction. The patient was advised to sleep with his head elevated, and return for panretinal photocoagulation once there was sufficient clearing.

BACKGROUND Ocular ischemic syndrome results from generalized hypoperfusion of the entire eye and sometimes the orbit, normally occurring in males > females (2:1), >65 years old, usually due to carotid artery obstruction, but can also be due to carotid dissection, obstruction of the ipsilateral ophthalmic artery or arteritis (rare). It is associated with DM (in 56% cases), HTN (50%), CAD (38%) and CVA/TIA (31%).

Symptoms include gradual decrease in visual acuity (90%) over weeks, mild ocular pain/headache (40%), amaurosis fugax, and transient visual loss with prolonged recovery (sometimes precipitated by bright light, due to impaired photoreceptor regeneration). Vision can range from 20/20 to light perception. Dilated exam may reveal disc pallor (40%) or mild disc edema (8%) associated with dilated, tortuous venules, narrowed arterioles, scattered superficial hemorrhages in the mid- and far periphery (80%), NVD, NVE (37%), cystoid macular edema and cherry-red spot (18%). Vitreous cell may be present. There may also be corneal edema, anterior chamber cells, moderate flare (out of proportion to cells), rubeosis of the iris (66%), NVA, PAS, hypopyon (rare) and cataract may be more prominent on the side of ischemia. Fluorescein angiography may show delayed or patchy choroidal filling, delayed arteriolar filling (with increased A-V transit time), diffuse leakage from posterior pole and disc, signs of capillary nonperfusion in the posterior pole and mid-periphery, and arterial vascular staining may be present in the absence of any physical vascular sheathing. Additionally, arterial pulsation may be elicited by digital pressure on the eye.

Workup would include a carotid doppler. Ipsilateral carotid stenosis of the internal carotid or common carotid artery is present in > 75% cases and supports the diagnosis. Treatment would include an carotid endarterectomy, topical corticosteroids and cycloplegics and PRP (especially if there is rubeosis and retinal neovascularization present). The 5-yr mortality rate is 40% and visual prognosis is guarded. Many may transiently improve with treatment, but eventually worsen.

UPCOMING CME COURSES

March 13-19, 2010

Illinois Eye Review

April 10, 2010

3rd Annual Retina Symposium: Current and Evolving Therapies for Challenging and Common Retinal Diseases

May 12, 2010

12th Annual Glaucoma Meeting: Diagnosis and Treatment of Challenging Glaucoma Cases

May 21, 2010

Oculofacial Plastic Surgery Conference: Management of Difficult and Complicated Cases

June 25, 2010

34th Annual Alumni Day

Upcoming Grand Rounds

Illinois Eye and Ear Infirmary Ophthalmology Grand Rounds are held Wednesdays at 5:00 pm on the UIC campus at 909 S. Wolcott in the College of Medicine Research Building. For a complete schedule go to www.uic.edu/com/eye and click on Grand Rounds under the Education drop down menu. Or, call 312-996-6590.