



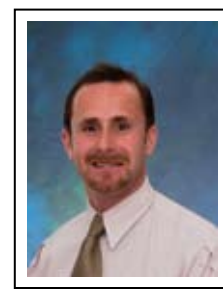
# Grand Rounds

12-09-09

## Introduction: David Hillman, MD (*Attending*)

This week's grand rounds presents several interesting cases encountered by the glaucoma service.

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## Glaucoma Surgical Treatment: Jennifer Hu, MD (*Resident*)



A 49 year-old African-American female was seen in the glaucoma clinic with a long history of glaucoma secondary to sarcoid uveitis, diagnosed in the 1990s. She had a cataract extraction with lens implant in the right eye (OD) in 2008, with multiple injections in the eye that year, including triamcinolone. She had a previous laser peripheral iridotomy in the right eye, a tube shunt placed in 2009, and subsequent hypotony with choroidal detachments and worsening vision since then. The patient has also had a blind left eye (OS) since 2006 due to glaucoma.

The patient's past medical history included diabetes, pancreatitis, hearing loss, sleep apnea. Her ocular meds included: atropine, prednisolone acetate in the right eye; travaprost, brimonidine, brinzolamide, rimexolone in the left eye. Her systemic meds included methotrexate, which she had been on since her cataract surgery.

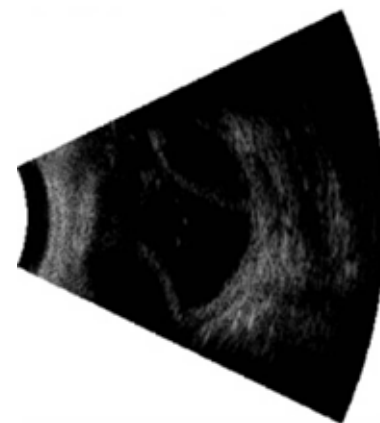
On exam, her visual acuity was hand motions in the right eye, no light perception in the left. Pupils were both nonreactive on exam, with irregularity in right eye. Intraocular pressure (IOP) was 5.5 over sclera in the right eye (too soft to read over cornea) and 49 in the left eye. On anterior segment exam, the right eye had a diffusely hazy cornea with edema and Descemet's folds, almost flat anterior chamber with visible tube shunt superonasally going to lower pupil margin with tube corneal touch, fibrotic scar overlying pupil, iridocorneal touch, and posterior chamber intraocular lens being pushed forward. In the left eye, the cornea was mostly clear with some old keratic precipitates, the anterior chamber was also somewhat shallow, with iris bound down to the lens, 4+ rubeosis and dense nuclear sclerosis. The posterior segment was unable to be visualized in either eye.

Due to her hypotony and possible choroidal detachment, the patient was referred to the retina clinic. At that visit, her IOP in the right eye had increased to 12 and no choroidals were seen on B-scan ultrasound.

On subsequent follow-up visits, her IOP in the right eye progressively increased and given a question of steroid response, her prednisolone was tapered and other IOP medications were adjusted. Despite these changes, her IOP rose to 40 OD, 49 OS. Thus, she was taken to the operating room for dissection of iris adhesions, excision of pupillary membrane, pars plana vitrectomy, and pars plana Baerveldt shunt in the right eye.

A week following surgery, the patient's vision had decreased to light perception in the right eye, but the IOP was now 5. Her anterior chamber was still shallow but the overall anatomy was much improved. However, B-scan ultrasound demonstrated choroidal detachments (fig. 1), for which she is being followed.

**BACKGROUND** The question of trabeculectomy with or without antimetabolites vs. tube shunt is at the heart of surgical glaucoma management. Glaucoma drainage implants have traditionally come into play later on in the treatment paradigm, though this is changing with recent studies. TVT was a multicenter clinical trial of patients with previous trabeculectomy, cataract extraction with lens implant, or both; and uncontrolled glaucoma. Patients were randomized to receive a Baerveldt glaucoma implant or trabeculectomy with mitomycin C. The study demonstrated patients with tube shunt were more likely to achieve IOP control and avoid persistent hypotony, reoperation for glaucoma, and loss of light perception vision compared to those receiving a trabeculectomy.



**FIGURE 1**  
B-scan ultrasound demonstrating choroidal detachments.

## Iris Cysts: Genie Bang, MD (*Resident*)



A 15 year-old male presented with a complicated ocular history involving his right eye. He first presented at the age of 11 with two-week history of 'pink eye' in his right eye, causing tearing. He was initially treated with antibiotics without improvement, then with Tobradex and prednisolone acetate, with mild improvement. He denied any related episode of trauma. He is otherwise completely healthy, without medical problems, and only wears glasses.

At the time of examination, his vision was 20/80 in the right, and 20/40 in the left. Anterior segment exam was remarkable for a large iris stromal cyst in the right eye (1-3 o'clock), largely obscuring the pupil. There was no active cell or flare. The cornea was carefully inspected, and there was a question of a faint stromal scar superiorly resembling a penetrating injury, however the patient continued to deny any history of trauma. Because the cyst was enlarging and beginning to obscure the pupillary axis, the patient was taken to the operating room for drainage, argon laser treatment, and cryotherapy. His best-corrected visual acuity was 20/25 post-operatively, and the cyst appeared successfully drained (Fig. 2).

Over the next 6 months, the cyst started to recur, while the vision, pressure, and lack of anterior chamber reaction remained stable (fig. 3). The patient was again taken to the operating room for drainage with 5-fluorouracil injection, then repeat drainage with injection of alcohol and endolaser diode treatment. After these 2 treatments, the cyst was noted to have collapsed. He was then stable for 3 years and did not return to the clinic for follow up until he started noting decreased vision, redness, pain, and photophobia in the right eye.

At this time, 4 years after initial presentation, his vision was counting fingers, with a 4+ nuclear sclerotic cataract, and significant anterior chamber inflammation, including fibrin in the AC. He was started on aggressive topical steroids, without improvement. An anterior chamber tap was done, which was negative for cytomegalovirus, herpes simplex virus, and toxoplasmosis, with Gram stain showing only moderate neutrophils. He continued to have significant inflammation, with new iris rubeosis, and was given a posterior sub-Tenon injection of triamcinolone. Over the next few weeks, his intraocular pressure began to rise, gonioscopy showed 360 degrees of peripheral anterior synechiae, and a new transilluminating iris cyst was noted inferotemporally.



**FIGURE 2**  
Anterior segment photograph after the first surgery to excise iris cyst.



**FIGURE 3**  
Anterior segment photograph, demonstrating recurrence of iris cyst.

**BACKGROUND** At this point, it appears that there are multiple, and recurrent iris stromal cysts, with chronic iridocyclitis, increased intraocular pressure, and a dense cataract. The main issue in the differential is whether this is a primary or secondary cystic etiology. This differentiation also dictates treatment options.

If these cysts are primary iris stromal cysts, the prognosis would be favorable, and there would be more options available for intraocular pressure management, such as trabeculectomy or shunt placement.

There was an initial question of whether there was a penetrating trauma, which could have been a source of epithelial downgrowth, causing multiple and difficult to treat cysts. If this were the case, it would be important to find the epithelial tract to eliminate the source of epithelial cells. Also clinically, epithelial downgrowth carries a poor prognosis. It would also be difficult to perform any filtering surgery for glaucoma if epithelial downgrowth was present.

# 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](http://www.uic.edu/com/eye) and click on Grand Rounds under the Education drop down menu. Or, call 312-996-6590.

## UPCOMING CME COURSES

June 25, 2010	34 <sup>th</sup> Annual Alumni Day
September 11, 2010	Pediatric Ophthalmology for the Non-Ophthalmologist
March 19-25, 2011	4th Annual Illinois Eye Review