Retinal breaks from oral dilyses can lead to photoreceptor outer segments clogging the trabecular meshwork and an elevated IOP. When gonioscopy is unremarkable, repairing the retina returns IOP to normal and is the appropriate treatment.

I. Case History
52 year old Caucasian male
Chief complaint: Blurry vision in the left eye that started in 4/2016 after fist fight and trauma to the orbit, associated with floaters that resolved 3 days after the trauma
Ocular history: strabismic amblyopia in the left eye, constant left exotropia
Medical history: Bipolar disorder, anxiety
Medication: Clonazepam, paxil, seroquel
Ocular and medical family history: Insignificant
No known drug allergies
Last eye exam: 6/2016 at corporate office, got new glasses however blurry vision persisted, “was told to go see an ophthalmologist”

II. Pertinent findings
Visual acuity: OD 20/20, OS 20/400 PH 20/250
Pupils: 1+APD OS
Motility: Full range of motion OU
Confrontation Visual field: Superior altitudinal defect OS
Anterior segment evaluation: Unremarkable OD, 1+pigment cells in vitreous OS
IOP: 15mmHg OD, 31mmHg OS at 2:30PM with Goldmann applanation tonometry
Gonioscopy: Open angle with ciliary body as most posterior structure, no angle recession OU
Posterior segment evaluation: Unremarkable OD, Inferior retinal detachment from 4 to 7 clock hours with dialysis to the optic nerve, macula intact OS
Additional testing:
Humphrey 24-2 visual field: No visual field defect OD, Generalized constriction OS
OCT of macula : Unremarkable OD, Retinoschisis and shallow retinal detachment OS

III. Differential diagnosis
i. Primary/leading
   a. Ghost cell glaucoma OS
      i. No khaki colored cells were noted upon slit lamp evaluation which would still persist post trauma for 1-3 months (1).
ii. Lack of a vitreous hemorrhage or hyphema
iii. Gonioscopy did not show any ghost cells in the trabecular meshwork
i. IOP should have returned to normal after resolution of the vitreous hemorrhage or hyphema

b. Traumatic glaucoma/Angle recession OS
i. Positive traumatic history
ii. Normal ciliary body band thickness and an open angle OU

2. Others
   a. Primary open angle glaucoma OS
   b. Ocular hypertension OS

IV. Diagnosis and discussion

Diagnosis: Schwartz Matsuo Syndrome OS
Discussion:
1. Presenting sign of increased IOP, vitreous pigment cells and rhegmatogenous retinal detachment is classic for Schwartz Matsuo syndrome.
   a. Classic triad of increased IOP in the range of 29-55 (2), oral dialyses of the retina with a break of the non-pigmented epithelium of the ciliary body and aqueous cells in the anterior chamber (2,3)
   b. History of trauma 3 months ago and unremarkable gonioscopy leads to likely cause of the increase in IOP is a result of photoreceptor outer segments clogging the trabecular meshwork
2. Large IOP fluctuations from the unaffected eye (15mmHg in OD, 33mmHg in OS).
   a. IOP in OS went from 33mmHg, to Pre-operatively 18mmHg, and 1 day post-operative 22mmHg
   b. Correlates with the long duration of untreated retinal detachment, symptoms since 3 months ago
   c. Larger fluctuations with IOP in patients who have not had immediate treatment for the retinal detachment and can still be present 3 months after the detachment(2, 3)
      i. No cells were in the anterior chamber, however there have been some cases where the syndrome did not have this presenting sign (3)
      ii. Physiology of an increase in IOP behind a retinal break by the ora serrata is due to oral dialyses is from the photoreceptor outer segment cells that disperse into the vitreous, which flows into the posterior chamber, and can then lead into the anterior chamber
      iii. Once the retina is repaired, there is no route for the photoreceptor segments to flow from the subretinal space to the vitreous, hence the supply of cells to clog the trabecular meshwork cease, and IOP returns back to normal (2).
      iv. Important to differentiate this syndrome from uveitic glaucoma and carefully evaluate for a retinal tear when the patient presents with vitreous cells and an increased IOP (4).
V. Treatment, management
1. Immediate referral to ophthalmologic care for retinal repair
2. Pars plana vitrectomy and endo laser was done to re-attach the retina 3 days after the same day referral
3. At the 1 day postoperative visit, the patient’s vision was counting fingers at 4 feet in the left eye and IOP was 22mmHg at 10AM with applanation tonometry
4. Lost to follow up due to incarceration after the procedure and could not return to clinic
5. No treatment was initiated for the high IOP in the case of Schwartz-Matsuo syndrome, following retinal repair the photoreceptor outer segments no longer contribute to disrupting outflow of the trabecular meshwork and IOP returns back to baseline (2, 3, 4, 5).

References

VI. Conclusion
1. Importance of prompt referral for retinal repair following diagnoses of retinal detachment and less urgency for treatment of increased IOP given an open angle on gonioscopy following trauma
2. Increase IOP and vitreous cells indicates a careful examination of the periphery to ensure there no retinal tears when gonioscopy is unremarkable