Management Options of Simultaneous, Bilateral Rhegmatogenous Retinal Detachments in an Asymptomatic Patient

Abstract: A 23 year old male presents for a routine exam revealing bilateral rhegmatogenous retinal detachments that appear to be chronic and progressive. This case focuses on the management of asymptomatic, chronic rhegmatogenous retinal detachments.

I. CASE HISTORY
   A. Patient Demographics
      • 23 year old Caucasian male veteran
   B. Chief Complaint
      • No complaints with vision. He had noticed mild inferior distortion OS, possibly a couple weeks duration, described as water on the floor.
   C. Ocular History
      • Moderate myopia and astigmatism OU
      • Soft contact lens wearer for many years
   D. Medical History
      • Bipolar Disorder
      • Low Back Pain
      • Posttraumatic Stress Disorder
   E. Medications
      • Risperidone 4mg
      • Lithium Carbonate 450mg Sa

II. Pertinent Findings
   A. Clinical
      • BCVA with CLs: OD 20/20, OS 20/20, OU 20/15
      • Pupils: ERRL (-) APD
      • Versions: FESA
      • Confrontation Fields: FTFC OD; significant wedge-like defect inferior nasal
      • SLE: mild corneal neovascularization, (-)AC cells, (-)Ant Vit cells, otherwise unremarkable
      • IOP: 16mmHg OD, 15mmHg OS
• Dilated Fundus Exam:
  o OD: Bullous retinal detachment, macula on, from 5:30-8:00 in the periphery extending to the inferior arcade and temporal macula. Multiple underlying demarcation lines visible. Retinal breaks seen at 5:30 and 7:00 within the detachment.
  o OS: Bullous retinal detachment, macula on, from 11:00 to 3:00, extending from the periphery posteriorly to the superior arcade. Two small breaks seen within the detachment. Multiple demarcation lines seen beneath detached retina. Lattice degeneration at 12:00.
  o Outer retinal precipitates in region of detached retina – these white spots within detached retina are characteristic signs of chronic detachment.

D. Ancillary Testing
  • Fundus Photography
  • Spectral Domain OCT revealed the extent of detachment and clearly showed detachment of photoreceptors from the RPE.

III. Differential Diagnosis

A. Rhegmatogenous Retinal Detachment – RRD usually occur unilaterally and are associated with retinal breaks, allowing liquefied vitreous between the sensory retina and the RPE. Pigment is often seen in the anterior vitreous.

B. Exudative Retinal Detachment/Tractional Retinal Detachment – Exudative RD results from fluid underneath the retina moving with different positions of gaze. Causes of exudative RD include malignant melanoma, posterior scleritis, Coat’s Disease. Signs of tractional RD are vitreous membranes and retinal striae from fibrous traction. Major causes of tractional RDs are proliferative diabetic retinopathy, retinopathy of prematurity and sickle cell retinopathy. The clinical picture did not correlate with this differential.

C. Acquired/Age-related Degenerative Retinoschisis – These conditions are usually asymptomatic and bilateral. They result from splitting of the outer plexiform layer in the retina and produce an absolute field defect. The retinoschisis is not mobile, has no RPE hyperpigmentation and no vitreous cells. Retinoschisis is also more common in hyperopic patients and cystoid degeneration can be found near the ora. This differential was ruled out by OCT.

D. X-Linked (Juvenile) Retinoschisis – This condition typically includes stellate foveal changes and may or may not have a demarcation line. It is usually asymptomatic and
congenital. X-linked retinoschisis can involve splitting of any retinal layer\(^1\). This differential was ruled out by OCT.

E. Choroidal Detachment – In this case, the clinic signs and OCT ruled out choroidal detachment. Choroidal detachments most often occur intraoperatively, postoperatively or from trauma. IOP is often <6mmHg with a shallow anterior chamber\(^1\). The clinical picture did not correlate with this differential.

IV. Diagnosis and Discussion

• Background

  o Rhegmatogenous retinal detachments occur when there is a break in the retina and liquefied vitreous enters the subretinal space separating the sensory retina from the RPE. In the United States, there are about 12 RRD per 100,000 people annually. Males are more likely to experience RRD. People in the age range of 40-70 are at the highest risk for RRD due to the physiologic vitreous changes that occur during those years\(^3\).

  • Unique features in this case

    o Asymptomatic and bilateral – asymptomatic detachments occur more often inferiorly and originate in the vicinity of atrophic holes. Asymptomatic RRD tend to be more longstanding and often have underlying demarcation lines at the leading edge of the detachment. They occur more frequently in younger age groups, as seen with this patient\(^4\).

    o Multiple demarcation lines – multiple underlying demarcation lines indicate that the RRD is longstanding and progressing.

    o Young age – RRD requires liquefied vitreous to separate the sensory retina from the RPE. In young patients the vitreous is intact and is less likely to cause a retinal detachment.

• Imaging interpretation

  o We were able to identify the extent of detachment and could very accurately determine progression in the future

V. Treatment and Management

• This patient was evaluated by retinal specialists the same day. The patient declined surgery at first, but agreed to return the following day to have pneumatic retinopexy with cryotherapy on the left eye.

• He has had several follow-up appointments with good post-op results OS. The retinal specialist wants to treat the right eye, but the patient does not want surgery until the school semester is done. Even with extensive education, he
chose to defer treatment, knowing that he could experience significant vision loss. He is being closely monitored at this time.

- There is some controversy about the treatment of asymptomatic RRD. The risks must be carefully compared to the benefits, especially in a patient such as this who has excellent vision and no significant symptoms. One observer studied the natural course of asymptomatic RRD without treatment. One out of 18 asymptomatic RRD became symptomatic over the course of almost 4 years and only RRD progressed slightly before stabilizing for the duration of the study⁵.

### VI. Conclusion

A. Clinical Pearls

- There are different management options for chronic, asymptomatic rhegmatogenous retinal detachments. The superior RRD was successfully treated, but the other RRD is being managed conservatively with observation. Under certain circumstances, asymptomatic RRDs can be managed conservatively with careful observation.

- Asymptomatic RRDs are much less likely to rapidly progress than symptomatic RRDs.

### VII. References


