"My eye just exploded last night": A Case of Choroidal Hemorrhage

Abstract: A choroidal hemorrhage is a rare condition associated with intra-operative/post-operative events, trauma, systemic conditions or spontaneous occurrence. Treatment for some may be conservative for a period, but often need surgical intervention if non-resolving.

I. Case History
   a. 74 year old white male presents on a Tuesday morning
   b. Chief complaint: OS “just exploded last night”; while in bed, patient notes severe “unbearable” sudden pain starting over forehead and “in the middle of the eyeball”; concurrent symptoms of red, blue & yellow flashes of light with an increase in floaters; noting ability to see blood vessels in the eye & left half of vision is obstructed; sensitivity to light & increased pain on eye movement
   c. No recent history of trauma, reports pain while chewing on left side of face & tenderness noted over left temple, high stress amounts noted in personal life presently
   d. Pertinent history:
      i. Medical: stroke in 2003, type II DM, HTN, mixed hyperlipidemia, CVA, morbid obesity, coronary arteriosclerosis, hypothyroidism, PTSD, history of coronary artery bypass, osteoarthritis, chronic constipation
      ii. Ocular: CN III palsy & polyplopia OD (longstanding, likely attributed stroke in 2003, diabetes also possible cause; patches OD for relief), atypical visual field defect (likely related to stroke, atypical/variable appearance confounded by history of polyplopia & possible ischemic event; CT/MRI normal), mild NPDR, mild hypertensive retinopathy, cataract OD, pseudophakia OS (surgery in 2003)
      e. Medications: Insulin, Aspirin, Atorvastatin, Furosemide, Lisinopril, Metoprolol, Nitroglycerine, Levothyroxine, Oxycodone

II. Pertinent findings
   a. Initial Exam
      i. Entering acuities: 20/25 OD 20/200 OS
      ii. After pushing pinhole: 20/50- OS
      iii. Prelims: (-) APD; pain on most gazes OS, (-) restrictions; FTFC OD, OS
      iv. Anterior segment: 2+ injection of the palpebral conjunctiva OS, all other anterior segment findings unremarkable, (-) A/C reaction OS
      v. Lens: 2+ NS & CC OD, well-centered PCIOL OS
      vi. IOP: 10 mmHg OD, OS
      vii. Posterior Segment: ON perfused with distinct margins; macula flat & intact OU; mild arterial attenuation & crossing changes OU; dome-shaped elevation/mass noted IT posterior pole & large dome-shaped detachment nasally OS (-) break; blonde fundus OD, blonde fundus OS with atypical presentation of red choroidal appearance surrounding the optic nerve and extending into the posterior pole past elevation/mass; PVD OD, vitreous syneresis OS (-)Schaeffer sign
      viii. Patient sent to ophthalmology clinic for evaluation & management; placed on Pred Forte QID & Atropine BID OS. RTC x 1 day for DFE with retina clinic.
   b. One day retina follow-up: BCVA OS acuity 20/40; marked pain persists; 1+ A/C reaction OS; IOP 14 mmHg OD, OS; 2+ injection OS; OD & unmentioned OS findings
unremarkable. Posterior segment OD stable to initial exam. Increased PF to q2h; continue Atropine BID OS. Begin 60mg oral prednisone & consult with PCP to start sliding scale insulin. RTC x 1 day for DFE & repeat OCT imaging

c. Two day retina follow-up: OS acuity stable; reports no pain & overall symptomatic improvement; blood sugar spike from steroids; IOP 8/6 mmHg OD/OS; 1+ A/C reaction; posterior segment stable. Continue 60mg oral pred, PF q2h & atropine BID OS. Pt declines 1 day follow-up; RTC x Monday (4 days). Refer to Baptist hospital if no improvement for evaluation & likely surgical drainage.

d. Laboratory studies: CBC normal, ESR normal, CRP slightly elevated, PT/PTT normal, most recent A1C: 7.4

e. Others: Macular OCT OS showed steep upward sloping temporal posterior pole, Macular 5 Line Raster over elevation showed underlying optically empty space with ill-defined intraretinal separations

III. Differential diagnosis

a. Primary/leading:
   i. Serous or rhegmatogenous retinal detachment
   ii. Neoplastic: Choroidal melanoma, metastatic tumor, ciliary body melanoma
   iii. Large choroidal nevus
   iv. Subretinal pigment epithelium hematoma
   v. Uveal Effusion Syndrome
   vi. Choroidal detachment of serous origin

b. Other presentation differentials to consider:
   i. Pain presentation consideration/rule out: Giant Cell Arteritis component

IV. Diagnosis & discussion

a. Choroidal detachment of hemorrhagic origin: Detachments may occur in one of two ways. Serous typically occurs intra-/post-operative or following trauma. Hemorrhagic detachments typically occur intra-/post-operatively or noted as spontaneous. Stretching and tearing of the long or short posterior ciliary arteries resulting in hemorrhage occurs with accumulation of blood causing stretching of the ciliary nerves and pain.

b. Systemic vascular diseases may be contributory to the extravasation of blood from the vessels.

c. Risk factors: older age, aphakia, generalized arteriosclerosis, cardiovascular disease, diabetes mellitus, systemic anticoagulation, AMD, history of glaucoma, increased axial length of the eye, trauma

d. Unique features: orange-brown, smooth & bullous dark elevation of the choroid and retina with no transillumination, moderate to severe pain, red eye, mild anterior chamber reaction, increased IOP

V. Treatment, management

a. Treatment and response to treatment: Topical cycloplegic and steroid, systemic steroid possibly, treat increased intraocular pressure when necessary

b. Ancillary testing: OCT, B-scan ultrasonography, lab/blood work, FAF, fluorescein angiography
c. Consideration of surgical drainage if appositional or "kissing" detachments, flat or progressively shallow A/C, corneal decompensation; better prognosis with waiting 7 to 10 days following onset

d. Treat the underlying problem: surgical complications, inflammatory/vascular disease

VI. Conclusion

a. When examining the retina you must always consider the differentials, especially when an atypical presentation is in your chair. A detachment is not always simply retinal, and an elevation is not always a mass. Consider all of the symptoms, and remember that one of the primary complaints here was severe pain – one of the constants in these cases. A choroidal detachment will be more smooth than undulated; a good rule out to keep in mind for retinal detachment. Notice the colors of the fundus, especially if changes are sectoral of different upon comparison to previous photos or notes. Consider recent events of surgery or trauma, as spontaneous choroidal hemorrhage is extremely rare.

Our patient is being symptomatically managed at this time. Further treatment may be performed, if necessary. Time will tell, and details will be divulged the next time you hear about this patient.

References: