10-year-old Caucasian male presents to the emergency department after an injury to his right eye. He was on a baseball game, when the fast-moving ball hit his eye. Denies LOC, nausea, or vomiting. He is complaining of right eye blurry vision, photophobia, and pain. Physical exam shows blood in anterior chamber, anisocoria, mild conjunctival injection, and intact extraocular movements. No foreign objects seen.

What is the most likely diagnosis:
a. Retinal detachment
b. Globe Rupture
c. Hyphema
d. Corneal abrasion
e. Orbital wall fracture

https://pedclerk.bsd.uchicago.edu/page/ophthalmologic-emergencies-office

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What is the most likely diagnosis:

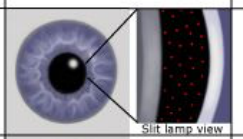
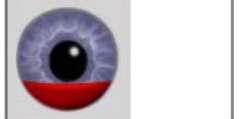
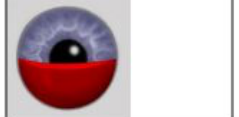
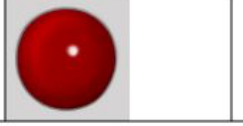
a. Retinal detachment

b. Open Globe Rupture

c. Hyphema

d. Corneal abrasion

e. Orbital wall fracture

Grade	Anterior chamber filling	Diagram	Best prognosis for 20/50 vision or better
Microhyphema	Circulating red blood cells by slit lamp exam only		90 percent
I	<33 percent		90 percent
II	33-50 percent		70 percent
III	>50 percent		50 percent
IV	100 percent		50 percent

Uptodate.com: Trumatic hyphema

1. Hyphema: presence of blood in the anterior chamber most commonly after blunt trauma to eye. Can also occur from penetrating/perforating trauma. Caused by tear of vessels in ciliary body or iris. Medical emergency as it can lead to increased IOP leading to vision loss. Most commonly seen in an upright patient after trauma leading to eye pain, photophobia, anisocoria, and blurry vision/decrease visual acuity.

2. Globe rupture: Medical emergency. Caused by trauma or foreign body. Physical exam usually with full thickness laceration, extruding intraocular content, irregular/tear like pupil, marked decrease visual acuity, prolapse, severe conjunctival hemorrhage, irregular shape globe. Requires emergent surgery.

3. Orbital wall rupture: Caused by trauma. Usually presents with restriction in extraocular movements, double vision, step off sensation when palpating, crepitus, eyelid edema. Depending on the location can also have decrease sensation in cheeks and lips. No blood in anterior chamber

4. Corneal abrasion: Superficial injury usually after scratching, foreign body, or trauma. Usually presents with increase tearing, pain/burning sensation, photophobia, blurry vision, and foreign body/sand-like sensation. No blood in anterior chamber.

5. Retinal detachment: mostly an adult diagnosis. Usually spontaneous, but could be seen after trauma. Characterized by flashes of light, floaters, loss of visual acuity, “dark curtain”. No blood in anterior chamber

Hyphema

- Important things to consider
  - PMHx: Sickle Cell Disease (greater risk for increased IOP), Bleeding Disorders
  - Non-accidental traumas

- Management in ED
  - Most important: rule out open globe rupture (physical exam, imaging, fluorescein)
  - Consult ophthalmology
  - Protective eye shield, elevate head of bed, bed rest, dim lights
  - Measure Intraocular Pressure
  - Imaging if needed (CT scan)
  - Lab testing for AA patients with unknown sickle cell status and for bleeding disorders
  - Control pain and nausea/vomiting
  - No NSAIDs

Hyphema

- Major Complications
  - Increase IOP → Glaucoma
  - Re-bleed in 4-5 days
  - Both lead to decrease visual acuity and blindness

- Discharge Recommendations
  - Bed rest, elevate head of bed, protective eye shield
  - No return to sports until resolution
  - Daily visits to Ophthalmology to measure IOP
  - No use of NSAIDs

References:
1. UpToDate: Traumatic Hyphema; Eye injury in the Emergency Department; 2. Pediatric Ocular Injuries B.Klein. Pediatrics In Review. 1992;. 3. Ocular trauma. McMaster University. 2012.