The Eight-Ball Eyeball: Grade IV Hyphema

Felix H. Lui, MD¹, Kenneth Downes, MD², and Sara L. Swenson, MD, FACP¹

¹Department of Internal Medicine, California Pacific Medical Center, San Francisco, CA, USA; ²Department of Ophthalmology, California Pacific Medical Center, San Francisco, CA, USA.

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Figure 1. External eye examination. The cornea appeared completely black (blue arrow) after the initial injury. The anterior rupture (red arrow) appeared two weeks later and prompted the patient to come to the emergency room. The protrusion occurred inferior to the corneal limbus and contained blood, clot, uveal tissue and aqueous humor.

A 31-year-old woman presented with left eye pain and vision loss after being hit in the eye by a cigarette lighter. Exam revealed a globe protrusion encased by conjunctiva at the inferior limbus (Fig. 1), elevated intraocular pressures (IOP) (> 50 mmHg), and grade IV hyphema. Computed tomography (CT) scan confirmed anterior globe rupture (Fig. 2). She received an alpha agonist, a beta blocker, steroids, cycloplegics, and a carbonic anhydrase inhibitor before undergoing open globe repair.^{1,2}

Post-traumatic hyphema is an ophthalmologic emergency that can result in permanent vision loss. Accumulation of blood

Figure 2. Sagittal view of CT scan showing area of anterior rupture encased by a thin layer of overlying conjunctiva (red arrow). This area corresponds to the protrusion seen at the inferior limbus of the left eye in Figure 1. The lighter layer surrounding globe (blue arrow) is the sclera (yellow arrow). The whitish area behind the protrusion represents the lens (green arrow).

in the anterior chamber causes trabecular meshwork obstruction, thereby elevating IOP. Hyphema with increased IOP can result in corneal blood staining, reduced corneal transparency, and vision loss.¹ Other complications of traumatic hyphema include endophthalmitis from penetrating trauma and optic nerve damage via elevated IOPs. Hyphemas are graded by the percentage of the anterior chamber (AC) filled with blood, and range from Grade I (blood occupying <1/3 of the AC) to Grade IV (blood occupying 100 % of the AC, or “eight-ball eye”).^{1,2}

Unfortunately, the patient’s postoperative visual acuity was limited to light perception. Since only 50 % of patients with Grade IV hyphemas recover to 20/50 visual acuity, her long-term prognosis is poor.

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Corresponding Author: Felix H. Lui, MD; Department of Internal Medicine, California Pacific Medical Center, 2351 Clay Street #380, San Francisco, CA, 94115, USA (e-mail: fhlui88@gmail.com).

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