**What’s Your Diagnosis?**

**Morning Rounds**

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**A Nail Gun, a Ruptured Globe—and a Surprise**

Luis Aguilar is a 31-year-old carpenter who was using a nail gun on a piece of wood when a splinter flew into his left eye. He immediately noted a foreign body sensation and a cloud coming over his vision. Worried, he went straight to the ER of a hospital that is outside of our network.

**Initial Management at the ER**

**A first look at the wound.** At the ER, the ophthalmologist on call examined Mr. Aguilar and noted a 4-mm full-thickness corneal laceration centrally with vitreous prolapse through the wound. Mr. Aguilar had a traumatic cataract and a 2-mm hyphema. There was no view to the retina. Computed tomography (CT) showed no intraocular foreign body.

**Repair of the ruptured globe.** The patient was given a tetanus shot, and the ophthalmologist repaired his ruptured globe. After vitreous was trimmed with Vannas scissors, the corneal laceration was closed with six 10-0 nylon sutures.

He was seen on post-op day 1, but no records were available from that visit.

**Post-op day 3: Worsening inflammation.** Mr. Aguilar was seen again at the same hospital on post-op day 3 and was noted to have increased inflammation. Vision was hand motion (HM), IOP was 20 mm Hg, and he had 2+ injection, a closed central corneal laceration that was Seidel negative, and 3+ Descemet folds. His hyphema had resolved, but he had a 0.5-mm hypopyon with 3+ fibrin in the anterior chamber. There was a poor view, but he was noted to have iris sphincter tears and a complete traumatic cataract.

Records for this visit noted that prednisolone acetate 1% drops were increased from every two hours to every hour and that he was continued on topical moxifloxacin, atropine, timolol, and brimonidine.

Because Mr. Aguilar did not have insurance, he was instructed to go to the county hospital so he could be evaluated by a retina specialist.

**We Get a Look**

**Post-op day 5: The patient arrives at our hospital.** Two days later (five days post-op), Mr. Aguilar arrived at our county hospital ER, where he was examined by an ophthalmology resident and retina fellow.

**Examination.** Mr. Aguilar reported decreasing pain and poor vision, though the latter was stable. His visual acuity was still HM, and he was noted to have 1+ injection, corneal edema with Descemet folds, vitreous in the anterior chamber, a 1.5-mm hypopyon, and some nonlayered blood on the inferior iris, as well as a white cataract. Due to corneal edema and cataract, the retina could not be viewed.

**Imaging.** B-scan ultrasonography showed vitritis with an attached retina (Fig. 1). Because the CT performed at the outside hospital could not readily be obtained, a CT of the orbit without contrast was performed in our ER to rule out an intraocular foreign body. This showed no radiopaque foreign bodies, but it did show mild periorbital superficial swelling with punctate air...
We started the patient on 60 mg of isms, and cultures showed no growth. The aqueous fluid gram stain showed 1+ white blood cells with no organ findings were otherwise unchanged. The aqueous fluid gram stain showed 2+ white blood cells. Bacterial and fungal cultures showed no growth after three weeks. By Mr. Aguilar’s three-week post-op visit, vision in the left eye had improved to 20/125 with a +11 lens and was deemed to be limited by aphakia, astigmatism from corneal sutures, and residual corneal edema. Mr. Aguilar noted continuing improvement in vision and decreased pain. IOP was 10 mm Hg with 1+ anterior chamber cell, no hypopyon, clear vitreous, and normal optic nerve and retina, with a limited view due to the corneal edema. B-scan ultrasound confirmed a clear vitreous cavity (Fig. 3B). We tapered his oral prednisone and atropine and stopped his timolol and moxifloxacin drops. Prednisolone drops were continued as part of normal post-op care.

Final Diagnosis
Mr. Aguilar was given the final diagnosis of phacoantigenic uveitis.

Lens-associated uveitis can be divided into phacolytic uveitis and phacoantigenic uveitis. Phacolytic uveitis is inflammation caused by leakage of lens protein through an intact lens capsule in mature or hypermature cataracts, whereas phacoantigenic uveitis is
inflammation caused by lens proteins that have been released through a ruptured lens capsule.2 Phacoantigenic uveitis typically presents days to weeks after trauma or cataract surgery. Symptoms include a red, painful eye, anterior chamber cell, keratic precipitates, occasional hypopyon, and sometimes elevated IOP. Its former name, phacoanaphylactic uveitis, is no longer used because immunoglobulin E (IgE), which mediates true anaphylaxis, is not present.3

The diagnosis of phacoantigenic uveitis is supported by a traumatic cataract with a ruptured lens capsule, aqueous and vitreous cultures that show no growth, lack of significant improvement after intravitreal antibiotics/antifungals, and marked improvement after vitrectomy/lensectomy. We went back and reviewed Mr. Aguilar’s B-scans prior to vitrectomy/lensectomy (Figs. 1 and 3A) and determined that the more hyperechoic area was actually his dislocated traumatic cataract rather than a focal area of vitritis, as had been previously thought.

Because post-traumatic endophthalmitis can mimic phacoantigenic uveitis and can have dire consequences, patients may need to be treated for endophthalmitis until infection is ruled out. Definitive treatment for phacoantigenic uveitis consists of steroids and removal of the inciting lens material.4

* Patient name is fictitious.


Dr. Scholle is a retina specialist and assistant professor of ophthalmology and Dr. Chancellor is a retina fellow. Both are at Baylor College of Medicine in Houston. Dr. Naguib is a retina fellow at New York University and Dr. Matharu is a cornea and refractive fellow at the University of Pittsburgh Medical Center. Financial disclosures: None.