

# External Choroidal Drainage Using Direct Visualization

Laura L. Snyder, MD; Shriji N. Patel, MD

**Laura L. Snyder, MD, and Shriji N. Patel, MD,** very nicely and concisely demonstrate and discuss the use of a guarded-needle technique to drain persistent serous choroidal detachments.



John W. Kitchens, MD

Highlighted in the surgical video are several key features to the success of this procedure.

First, they illustrate the appropriate type of patient who benefits from surgical intervention: one with a symptomatic and persistent choroidal detachment despite medical management. They very elegantly demonstrate the technique to guard the needle to guard against over-penetration into the choroidal space, along with the need to attempt drainage in the area of greatest choroidal detachment (which is typically temporal). Placing illumination in the vitreous cavity while taking care

to avoid iatrogenic injury to the elevated retina allows the surgeon to visualize the drainage in “real time” to monitor progress of the resolution of the choroidal detachment. Utilizing aspiration creates a “closed loop” system where the surgeon always maintains control over the drainage process. Finally, the use of the guarded-needle technique reduces conjunctival manipulation, thus giving a better chance at preserving the filtering bleb.

In summary, this video is a concise guide and reference to the important steps in performing guarded needle drainage of a serous choroidal detachment. It is a useful technique that is less invasive in many ways when compared to the traditional scleral cutdown procedure. I sincerely appreciate the authors mentioning our contributions to the development of this procedure.

**John W. Kitchens, MD**

Retina Associates of Kentucky  
Lexington, KY



Laura L. Snyder

**ABSTRACT:** A woman in her 60s with a functional glaucoma tube shunt presented after vitrectomy for epiretinal membrane peeling with symptomatic choroidal effusions not responsive to medical therapy. She underwent a minimally invasive, transconjunctival choroidal drainage procedure, which was directly visualized under a widefield viewing system to prevent intraocular hemorrhage or retinal penetration of the needle. This allowed for preservation of her conjunctiva, restoration of normal intraocular pressure by temporary blockage of her tube shunt with a viscoelastic, and resolution of her choroidal effusions.

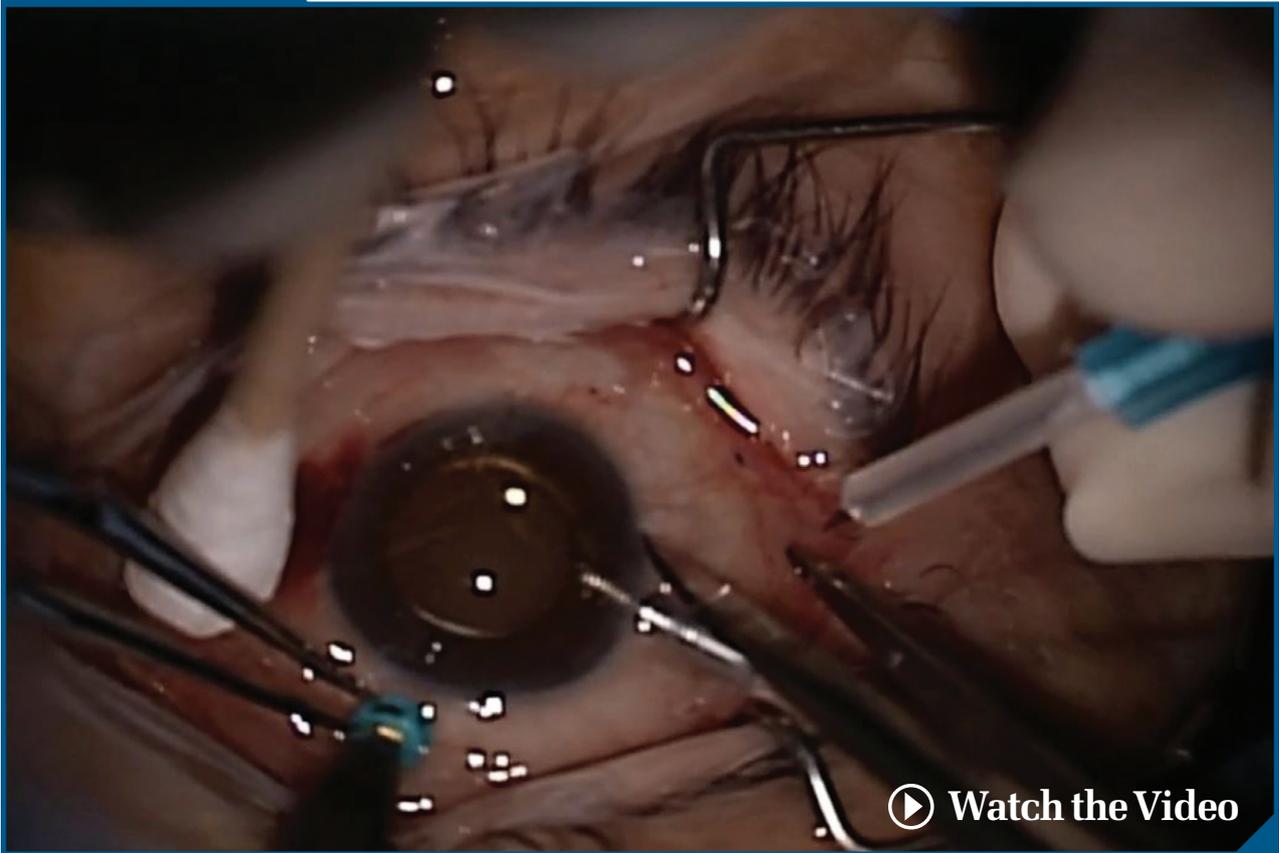


Shriji N. Patel

A pseudophakic woman in her 60s with a history of severe glaucoma in the left eye managed with a tube shunt presented 2 weeks after vitrectomy for epiretinal membrane peeling with symptomatic choroidal effusions that were not responsive to medical therapy. Her visual acuity was 20/50, and she complained of an enlarging shadowed area in her peripheral vision. Her intraocular pressure (IOP) was 4 mm Hg by applanation. After extensive discussion, the patient elected to undergo drainage of the choroidal effusions. We performed this procedure under direct visualization using a technique that was described previously.<sup>1</sup> Our surgical goals included normalizing IOP and draining the effusions while minimizing conjunctival disruption in the event that additional glaucoma surgery may be needed in the future.

After the patient was placed under monitored anesthesia care with a peribulbar block, a paracentesis

Healio.com/OSLIRetina



**Figure 1.** The guarded 25-gauge needle is placed in the suprachoroidal space approximately 8 mm posterior to the limbus in the area of the highest choroidal effusion.

was created at the 4-o'clock position, and an anterior chamber infusion line was inserted. A chandelier light was placed at the 7-o'clock position for illumination. The temporal choroidal detachment was larger, so the eye was rotated nasally. A 270-style scleral buckle sleeve was placed over a 25-gauge needle and trimmed to expose 2 mm of the needle tip. This "guarded needle" was then attached to the extrusion line and passed transconjunctivally and transsclerally 8 mm posterior to the limbus. Under direct visualization with the BIOM (Oculus Surgical, Port St. Lucie, FL), the needle was confirmed to have not penetrated the retina. The choroidal fluid was then gently aspirated from the suprachoroidal space until approximately 10% remained. The needle was removed, and gentle pressure was placed over the entry site with a cotton tip. No intraocular bleeding was confirmed. The chandelier was removed, and the sclerotomy wound was sutured with 7-0 Vicryl (Ethicon, Somerville, NJ). The anterior infusion line was then removed, and the anterior chamber was filled with viscoelastic to

temporarily block the tube shunt. The paracentesis was sutured with 10-0 nylon, and the eye was confirmed to be normotensive with watertight wound closure. Five days after the procedure, the patient had resolved choroidal detachments, stable vision at 20/50 in the left eye with resolution of peripheral shadows, and an IOP of 17 mm Hg.

Given the patient's history of severe glaucoma requiring previous surgical intervention, this technique allowed preservation of the remaining conjunctiva for future glaucoma surgeries. Traditional methods of choroidal drainage would have necessitated a conjunctival peritomy with extensive dissection and/or isolation of rectus muscles that would cause postoperative conjunctival adhesions and scarring. Furthermore, our temporary blockage of her tube shunt with viscoelastic allowed for normalization of IOP and resolution of the choroidal effusions. Direct visualization also allowed us to extensively drain choroidal fluid and minimize complications such as intraocular hemorrhage or retinal penetration with the needle.

## REFERENCES

1. Mandelcorn ED, Kitchens JW, Fijalkowski N, Moshfeghi DM. Active aspiration of suprachoroidal hemorrhage using a guarded needle. *Ophthalmic Surg Lasers Imaging Retina*. 2014;45(2):150-152.

---

**Laura L. Snyder, MD**, can be reached at North Carolina Retina Associates, Raleigh, NC; email: lsnyder@ncretina.com.

**John W. Kitchens, MD**, can be reached at Retina Associates of Kentucky, 120 N. Eagle Creek Drive, Suite 500, Lexington, KY 40509; email: jkitchens@gmail.com.

**Shriji N. Patel, MD**, can be reached at Vanderbilt University Medical Center, Nashville, TN; email: shriji.patel@vumc.org.

**Disclosures:** This video was awarded a travel grant for the 6th Annual Vit Buckle Society Meeting in Miami in March 2018. The authors report no relevant financial disclosures.

**doi:** 10.3928/23258160-20190806-11