

Chapter 64

Goniotomy and Exam Under Anesthesia (EUA)



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Indications

Uncontrolled intraocular pressure requiring surgical intervention in childhood glaucomas including congenital, juvenile open-angle glaucoma, Sturge-Weber syndrome, aphakic glaucoma, Axenfeld-Rieger syndrome, and uveitic glaucoma. For patients with uveitic glaucoma, it is advised that the eye be non-inflamed for 3 months preoperatively.

Essential Steps

1. Examination of the anterior segment to determine the presence of ocular abnormalities and to determine if on gonioscopic examination the angle is sufficiently open (Fig. 64.1).
2. Topical application of pilocarpine and apraclonidine.
3. Tilt patient's head 30–45° away from surgeon, and tilt the microscope 30–45° toward surgeon.
4. Place locking forceps on the Tenon's insertion superiorly and inferiorly at the limbus and have the assistant hold the forceps.
5. View nasal angle with gonioscopy lens.
6. Enter anterior chamber with 27-gauge sterile needle on viscoelastic-filled syringe and instill viscoelastic.
7. With gonioscopy lens in place, create cleft perpendicular to anterior trabecular meshwork (Fig. 64.2).

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Fig. 64.1 Angle seen through Swan Jacob gonioscopy lens

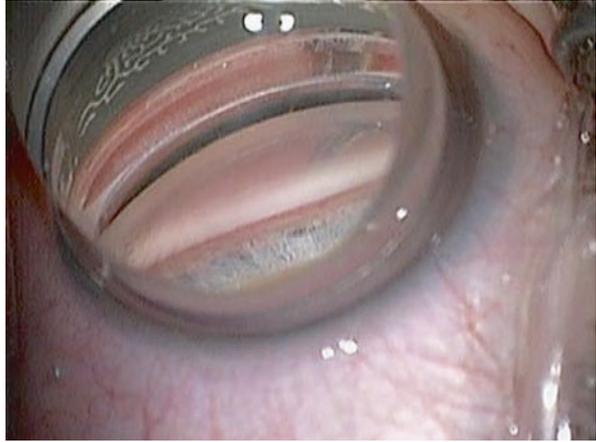


Fig. 64.2 MVR blade creating cleft through trabecular meshwork. (Image courtesy of Cellso Tello, MD and Matthew Hosler, MD)



8. The assistant carefully rotates the eye clockwise and counterclockwise to extend cleft.
9. Replace viscoelastic syringe with syringe containing filtered air to fill chamber.
10. Close entry site with interrupted 10-0 nylon or Vicryl suture.

Complications

- Hyphema
- Hyperemia
- Capsular disruption
- Cataract formation
- Lens subluxation
- Miosis
- Endothelial damage
- Corneal scarring
- Epithelial ingrowth

- Corneal edema
- Hypotony
- Iridodialysis
- Cyclodialysis
- Endophthalmitis

Template Operative Dictation

Preoperative diagnosis: Childhood glaucoma (*OS/OD/OU*)

Procedure: Examination under anesthesia and goniotomy (*OD/OS/OU*)

Postoperative diagnosis: *Same*

Indication: This ___-year-old (*male/female*) has findings of glaucoma. Procedure is indicated to lower the eye pressure. A detailed review of risks and benefits was conducted with the parents (*and the patient—if age appropriate*).

Description of the procedure: The patient was identified in the holding area, and the (*right/left/both*) eye(s) was/were marked with a marking pen. The patient was brought into the operating room and placed on the operating table in the supine position. A proper time-out was performed verifying correct patient, procedure, site, positioning, and special equipment prior to starting the case.

Light anesthesia by mask was given, and topical anesthesia was instilled into the conjunctival fornix of the (*right/left/both*) eye(s). IOP measured with a (*pneumotonometer/Tono-Pen/Perkins tonometer*) was ___ mm Hg OD ___ standard deviation ___ mm Hg OS ___ standard deviation. Dilating drops (*Mydracyl* __%, *Neo-Synephrine* __%, *Cyclogyl* __%) were instilled to (*right/left/both*) eye.

The patient was then intubated and an intravenous line was placed per anesthesia. Central cornea thickness was OD ___ microns and OS ___ microns. The operating microscope was used for subsequent examination. Corneal diameters measured with a caliper were ___ mm horizontally by ___ mm vertically OD and ___ mm horizontally by ___ mm vertically OS. Anterior segment cornea exam OU revealed (*Haab's striae, clear, cloudy, hazy, opacities, etc.*). The iris was (*normal, thin, etc.*) and the anterior chamber was moderately (*deep, shallow, formed, etc.*). (*No*) vitreous was observed in the anterior chamber. On (*4-mirror, Swan Jacob, etc.*) gonioscopy, the angle OD was (*wide open with CB band and iris processes, poorly visualized, etc.*), and the angle OS was (*wide open with CB band and iris processes, poorly visualized, etc.*). (*Each quadrant [superior, nasal, inferior temporal] should be described and clarified in the note .*)

A dilated exam was then performed. With the microscope and a flat retina lens, the cup-to-disk ratio measured ___ horizontal, ___ vertical OD and ___ horizontal, ___ vertical OS. OD optic nerve rim was (*intact, thin, notched*), and OS optic nerve rim was (*intact, thin, notched*). OD optic cup was (*shallow, deep, elongated*), and OS optic cup was (*shallow, deep, elongated*). Macula OD was (*unremarkable, absent foveal reflex, thin, etc.*), and macula OS was (*unremarkable, absent foveal*

reflex, thin, etc.). Indirect ophthalmoscopy was performed with a 20 diopter lens. OD central and peripheral retina was (*describe*), and OS central and peripheral retina was (*describe*). (If a portable OCT was used, findings should be reported.)

Based on the above findings including a clear cornea and well-visualized angle structures on gonioscopy, it was decided to proceed with glaucoma surgery in the (*right/left/both*) eye(s). A waterproof adhesive transparent dressing was used to cover the contralateral (*left/right*) eye.

The (*right/left*) eye was prepped and draped in the usual sterile fashion. The operating microscope was centered over the (*right/left*) eye, and an eyelid speculum was placed. Pilocarpine 2% and apraclonidine 0.5% drops were placed onto the cornea of the (*right/left*) eye and viscoelastic placed onto the central cornea. The surgeon was seated temporally, and the microscope was tipped 30–45° toward the surgeon. The patient's head was tilted 30–45° away from the surgeon. Locking forceps were placed on the Tenon's insertion superiorly and inferiorly at the limbus. The assistant held the locking forceps, and adjustments were made until an excellent detailed view of the nasal angle was obtained through the (*Swan Jacob, 4-mirror, etc.*) gonioscopy lens. The gonioscopy lens was removed from the eye.

The anterior chamber was entered through the peripheral clear cornea temporally with a sharp 27-gauge sterile needle on a viscoelastic-filled syringe (*Miochol was injected*). The needle was carefully passed across the anterior chamber, avoiding contact with the iris or lens, toward the nasal anterior chamber angle. Viscoelastic was instilled into the anterior chamber as needed. The gonioscopy lens was again placed onto the eye. The (*needle/MVR blade*) was placed perpendicular to the anterior trabecular meshwork, and a cleft was created. The assistant carefully rotated the eye clockwise and counterclockwise to extend the cleft in the anterior trabecular meshwork for a total of ___ clock hours. Viscoelastic syringe was removed and replaced by a syringe with filtered air to fill the chamber. The 27-gauge needle was removed from the eye, and the site was closed with an interrupted (*10-0 Vicryl/10-0 nylon*) suture.

The wound was tested and did not leak. The knot was rotated into the cornea. Subconjunctival injections of (*antibiotics and steroids*) were administered inferiorly. A patch and a shield were placed over the eye.

If procedure was performed bilaterally—The patient was then prepped and draped in the usual sterile fashion for the (*left/right*) eye. The surgeons rescrubbed for this eye. *The same procedure was then performed for the contralateral eye.*

The patient was awakened from anesthesia without complications and transported to the postoperative care unit. Follow-up was scheduled for the next day.

Additional Resource

<http://eyetu.be/rohoho>; https://www.youtube.com/watch?v=ZM13T_Af8HA&t=31s.