

Chapter 67

Gonioscopy-Assisted Transluminal Trabeculotomy



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Indications

Gonioscopy-assisted transluminal trabeculotomy: uncontrolled intraocular pressure and glaucoma drop intolerance

Essential Steps

1. Topical anesthetic
2. Placement of speculum
3. Paracentesis incision (opposite to side of Prolene suture entry point)
4. Preservative-free Xylocaine instillation
5. Viscoelastic injection into the AC
6. Clear corneal incision
7. Creation of Prolene suture entry point with 27-gauge needle (opposite to side of paracentesis incision)
8. Cautery of Prolene suture tip
9. Rotation of patient's head 45 degrees away from surgeon
10. Microscope forward tilt by 45 degrees
11. Visualization of nasal angle with gonioprism

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12. Creation of nasal goniotomy using MVR blade
13. 5–0 Prolene insertion through goniotomy and passage through 180 degrees of Schlemm's canal
14. Rotation of patient's head back into neutral position
15. Return to vertical microscope position
16. Explantation of Prolene suture from the eye
17. Removal of viscoelastic
18. Reinjection of small amount of OVD to maintain hemostasis
19. Stromal hydration
20. Sutures as necessary

Complications

- Hyphema
- Corneal edema
- Elevated IOP
- Peripheral anterior synechia
- Uveitis
- Endophthalmitis
- Cystoid macular edema (CME)
- Traumatic injury to the iris
- Descemet's detachment
- Cyclodialysis cleft
- Cataract formation
- Ptosis

Template Operative Dictation

Preoperative diagnosis: *Glaucoma (OD/OS)*

Procedure: Gonioscopy-assisted transluminal trabeculotomy (*OD/OS*)

Postoperative diagnosis: *Same*

Indication: This ____-year-old *male/female* has a history of open angle glaucoma despite conservative treatment measures. Given the mild/moderate severity of glaucomatous disease, it was deemed judicious to opt for a blebless glaucoma procedure, opting instead to strip the trabecular meshwork, which is thought to be the site of increased outflow resistance. After a detailed review of risks and benefits, the patient elected to undergo the procedure.

Description of the procedure: The patient was identified in the holding area, and the (*right/left*) eye was marked with a marking pen. The patient was brought into the

OR on an eye stretcher in the supine position. 0.5% tetracaine was instilled into the conjunctival fornices of the (*right/left*) eye. The (*right/left*) eye was prepped and draped in the usual sterile fashion and operating microscope centered over the (*right/left*) eye. The eyelid speculum was placed. A proper time out was performed verifying correct patient, procedure, site, positioning, and special equipment prior to starting the case.

A 15-degree paracentesis blade was used to make a side port incision followed by injection of Xylocaine, dispersive viscoelastic, and cohesive viscoelastic into the anterior chamber. Using a 2.2 mm keratome blade, a 2.2 mm temporal clear corneal incision was made. Additionally, a corneal entry point was created with a 27-gauge needle opposite to the side of the paracentesis incision to allow for 5–0 Prolene insertion.

A 2 inch piece of 5–0 Prolene was cut and the tip cauterized. It was then placed through the 27-gauge access entry. The patient's head was then rotated 45 degrees away from the surgeon and the operating microscope tilted forward approximately 45 degrees. A Swan-Jacob gonioprism was then placed on the eye and the nasal angle visualized. An MVR blade was used to make a nasal ½ clock hour goniotomy. Using micrograspers, the 5–0 Prolene was inserted through the goniotomy into Schlemm's canal, and then fed 180 degrees around Schlemm's canal with the same micrograspers. After this had been successfully achieved, the patient's head was turned back to the neutral position and the operating microscope returned to its vertical position. The Prolene was then explanted from the eye.

Balanced salt solution was injected into the anterior chamber to remove the viscoelastic. Approximately 20–30% viscoelastic was reinjected to maintain hemostasis. Stromal hydration of the corneal incisions was performed, and the incisions were noted to be watertight (*and if necessary: 10–0 Nylon simple interrupted sutures were placed*).

Eyelid speculum and drape were removed. Maxitrol eye ointment was placed in the inferior fornix and a shield was placed over the eye. The patient was transferred to the postanesthesia care unit in stable condition.

Additional Resource

<http://eyetu.be/gyfim>; <https://www.youtube.com/watch?v=58GDh0GvpkY>.