

# Chapter 63

## Trabectome (Trabeculectomy Ab Interno)



Nisha Chadha

### Indications

Uncontrolled intraocular pressure, progression on visual field, need to reduce topical glaucoma medications, visually significant cataract in glaucoma patient on topical glaucoma medications, visually significant cataract and need for intraocular pressure reduction.

### Essential Steps

1. Apply topical anesthesia.
2. If combining with cataract surgery, create side port incision.
3. Inject 1% preservative-free lidocaine intracamerally.
4. Create clear corneal incision (1.6–1.7 mm), and flare internal lip of wound to facilitate movement of trabectome handpiece across angle.
5. Rotate microscope approximately 30–45° toward surgeon, and rotate patient head in nasal direction approximately 30–45°.
6. Place gonioscopy lens (Swan-Jacobs lens) on the cornea, and visualize nasal angle.
7. Activate irrigation/aspiration with foot pedal, and enter incision with trabectome handpiece (ensure anterior chamber depth is maintained).
8. Hook trabecular meshwork at 45° angle with footplate of handpiece, and gently pull forward to avoid posterior pressure on the wall of Schlemm's canal.

---

N. Chadha (✉)

Department of Ophthalmology, Icahn School of Medicine at Mount Sinai/New York Eye and Ear Infirmary of Mount Sinai, New York, NY, USA

e-mail: [nisha.chadha@mssm.edu](mailto:nisha.chadha@mssm.edu)

9. Gently sweep across angle with handpiece while depressing foot pedal to apply electrocautery (power 0.8–1.0) (aim for 90–120° of treatment depending on visibility).
10. Remove handpiece and discontinue irrigation/aspiration.
11. Consider injecting viscoelastic to tamponade any reflux bleeding from Schlemm's canal.
12. Reposition head and microscope to primary position.
13. If combining with cataract surgery, enlarge corneal wound to desired width for phacoemulsification and proceed with cataract extraction.
14. Hydrate wounds and consider placing suture through the main wound (leave the eye slightly pressured to prevent reflux bleeding).
15. Start pilocarpine, topical antibiotic, and topical steroid postoperatively.

## Complications

- Hyphema
- Cyclodialysis cleft
- Inflammation
- Intraocular pressure elevation
- Peripheral anterior synechiae
- Cataract or lens trauma (if not combined with phacoemulsification)

## Template Operative Dictation

**Preoperative diagnosis:** Glaucoma (OD/OS)

**Procedure:** Trabectome (trabeculectomy ab interno) (OD/OS)

**Postoperative diagnosis:** *Same*

**Indication:** This is \_\_\_\_- year-old (*male/female*) with glaucoma and uncontrolled intraocular pressure or need for topical glaucoma drop reduction in combination with cataract extraction for visually significant cataract. After a detailed review of risks and benefits, the patient is 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. After proper time-out was performed verifying correct patient, procedure, site, positioning, and special equipment prior to starting the case, topical anesthesia (0.5% tetracaine) was instilled. After adequate

anesthesia, the patient was prepped and draped in the usual sterile ophthalmic fashion. A lid speculum was inserted and the microscope was positioned.

A temporal paracentesis was created. Preservative-free lidocaine 1% was instilled into the anterior chamber. A temporal clear corneal incision was created using a 1.6 mm keratome blade. The patient's head was tilted away from the microscope, approximately 30–45°. The microscope was tilted toward the surgeon approximately 30–45°. A Swan-Jacobs gonioscopy lens was placed on the cornea to visualize the nasal angle. Irrigation/aspiration was activated, and the trabectome handpiece was introduced into the anterior chamber. The trabectome tip engaged the nasal trabecular meshwork, and electroablation was activated while sweeping across the nasal angle. 90–120 degrees of trabecular meshwork were ablated at a power setting of 0.8 mJ. Blood reflux was noted from the ablated area. The handpiece was removed. Viscoelastic was injected to the anterior chamber. The head was repositioned to supine. The microscope was placed level (Fig. 63.1).

The wounds were hydrated. There was noted to be no leakage. One drop of pilocarpine was instilled. Topical antibiotic and steroid drops were placed onto the eye. The eyelid speculum was removed. Topical antibiotic and steroid ointment was placed onto the eye. The eye was shielded, and the patient was wheeled to the recovery room in stable condition.

**Fig. 63.1** Nasal angle visible through gonioscopy lens and trabectome handpiece in position to engage trabecular meshwork. Trabecular meshwork has been dyed with trypan blue for ease of identification. (Photo courtesy of Nisha Chadha, MD)



**Additional Resource**

<http://eyetu.be/ehafo>; [https://www.youtube.com/watch?v=\\_bid1ZHMadc](https://www.youtube.com/watch?v=_bid1ZHMadc).