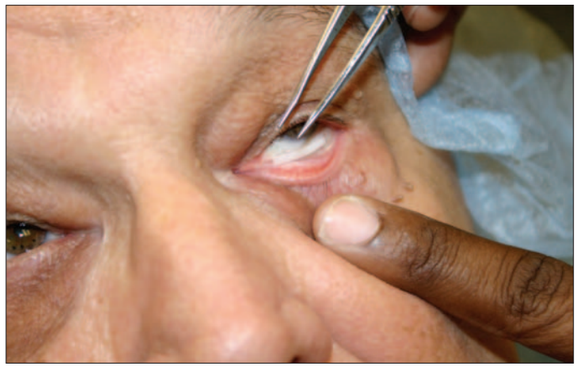


Edited by Jay Horowitz, CRNA

# Anesthetic Techniques for Cataract Cases

## The favored approaches of 3 high-volume ophthalmology centers.

Which anesthetic technique is best for your cataract patients? That depends on several variables, including how cooperative your patients are, how strong their lid squeeze is and your surgeons' preferences. Here are the anesthesia techniques 3 high-volume ophthalmology centers favor.



**ANESTHESIA AND DILATION** Place a pledget soaked in tetracaine, an antibiotic, an anti-inflammatory and dilating drops under the lower lid.

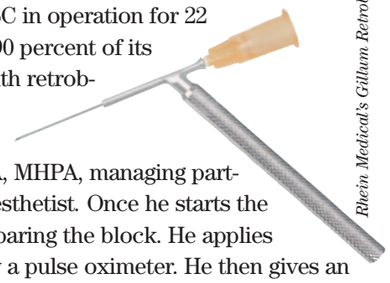
### Pledgets speed topical technique

Tuesdays at the Surgery and Endoscopy Center in Sebring, Fla., are cataract days with T. Hunter Newsom MD at the helm. We perform nearly all of the cases under topical anesthesia with light (1mg midazolam) intra-operative sedation. Upon admission, under the lower lid we place a small pledget that has been soaked in tetracaine, an antibiotic, an anti-inflammatory and dilating drops. We securely tape the eye shut to prevent blinking. (We give patients who take Flomax a drop of ophthalmic atropine to assist dilation). About 20 minutes later, remove the tape and assess the anesthesia and dilation. If necessary, administer additional tetracaine and neosynephrine drops. If the patient is noted to be a lid "squeezer" or is particularly concerned about intra-operative discomfort, apply a small amount of ophthalmic xylocaine gel.

On the rare occasion where a block is required, we inject 6cc of 3% xylocaine with hyaluronidase using a peribulbar technique. After consideration of the possible negative effects of a retro-bulbar bleed vs. an increased risk of CVA or clot formation in patients who stop anticoagulant therapy, we'll block patients who are anti-coagulated.

### Retrobulbar blocks

The Spokane Eye Surgery Center in Spokane, Wash., a 3-OR ASC in operation for 22 years, performs 90 percent of its cataract cases with retrobulbar anesthesia, says Dan Simonson, CRNA, MHPA, managing partner and chief anesthetist. Once he starts the IV, he begins preparing the block. He applies monitors, usually a pulse oximeter. He then gives an appropriate dose of midazolam, usually about 1-2mgs IV. He says he may also on rare occasion as indicated give other such adjuncts as fentanyl, diazepam or even propofol.



*Rhein Medical's Gillum Retrobulbar Guide*

Once the sedation takes effect, he performs the retrobulbar block. He typically injects 1½ml of 0.5% xylocaine through the lower lateral conjunctiva. He then pulls the lid down and out and directs a 30 ga ⅜" sharp needle into the pre-septal area. "This is done to reduce the discomfort from the block needle that follows," he says.

The surgery center uses a 25 ga 1⅜" Sprotte pediatric spinal needle for all its retrobulbar blocks. Depending on the length of the procedure or other considerations, the block mixture may consist of either 5ml of 2% xylocaine/75 u hyaluronidase (for 1 to 1½ hours of surgical anesthesia) or a mixture of 0.75% bupivacaine/2% xylocaine/75 u hyaluronidase (for 2 to 3 hours), says Mr. Simonson. He inserts the needle through the anesthetized conjunctiva (although he may sometimes use a trans-dermal approach) and into the retrobulbar space. He then injects the entire 5ml and applies a 4x4 gauze to the closed lid. Place a Honan balloon with a pressure of 25mm/Hg for 15 to 30 minutes. He assesses the block and the patient's level of sedation, and then takes him back to the operating room where he once again applies monitors. "The procedure is now ready to be performed," says Mr. Simonson.

### Topical and blocks

Two of the cataract surgeons at Cityview Surgery Center in Fort Worth, Texas, prefer blocks for their cases. A third prefers topical with sedation. Jeff Weertman, CRNA, MHS, the chief anesthetist, says the 2-room ASC does about 80 percent of its eye cases under topical and 20 percent under block in our 2-room ASC.

Mr. Weertman gives topical anesthesia patients 2 sets of dilating drops in the pre-operative area. In the OR, he places tetracaine drops in the operative eye before the surgical prep and again after. Depending on the level of anxiety, he gives 2mg midazolam for sedation, with additional midazolam as needed. "Our topical surgeon is very good at talking with the patients and having them cooperate by looking straight into the microscope light and holding still so the sedation is titrated to decrease anxiety and promote cooperation," says Mr. Weertman.

He uses a modified retrobulbar technique to block regional patients. "We give patients dilating drops in the pre-operative area and an IV with either 250cc of Lactated Ringer's or saline," he says. "With a CRNA in each OR, we perform blocks in the OR. We give oxygen with a cannula, place tetracaine drops in the operative eye and sedate with either midazolam 1-2 mg or propofol. We place a 25g 1" needle 2mm lateral to the limbic line through the conjunctiva. Once in the intra-conal space, we inject 6cc of an equal mixture of 2% xylocaine and 0.75% bupivicaine with 75u of hyaluronadase."

**BLOCKING CATARACT PATIENTS** Many cataract patients at the Cityview Surgery Center receive a modified retrobulbar technique.

He tapes the eye shut, places a 4x4 gauze and applies a Honan's cuff for 5-10 minutes at 25 mmHg. "We let patients awaken and maintain them in a cooperative state," he says. "We assess the block and let the surgery proceed." **OSM**

*Mr. Horowitz (**unconscious@verizon.net**) is chief anesthetist for ophthalmology at the Surgery and Endoscopy Center in Sebring, Fla.*

### What Type of Anesthesia Do You Use for Your Cataract Cases?

| Anesthesia | ASCs | Hospitals |
|---|---|---|
| Topical anesthesia | 57.5% | 38.6% |
| IV anesthesia | 47.7% | 19.1% |
| MAC | 63.7% | 68.6% |
| Retrobulbar | 16.7% | 6.9% |
| Peribulbar | 7.5% | 3.1% |
| Regional | 2.1% | 2.5% |

SOURCE: *The National Center for Health Statistics, which in 2006 collected data on more than 51,000 ambulatory surgery procedures performed in 189 hospitals and 295 freestanding ambulatory surgery centers.*