ORAL SEDATION IN GLAUCOMA SURGERY

Tips for incorporation into your practice.

BY ZACHARY VEST, MD

Oral sedation has long been used in oculoplastic surgery and is becoming more common in other ophthalmic subspecialties. The role of oral sedation in cataract surgery has been well documented in ambulatory surgery centers (ASCs) and increasingly in office-based surgical suites.[1,2] An oral approach to anesthesia is becoming more frequent in retina, glaucoma, and corneal surgeries as well.[3,4] This article outlines the benefits of oral sedation and offers advice on incorporating it into your practice.

CURRENT ORAL SEDATION PROTOCOL

Options for Oral Sedation

- Benzodiazepene (lorazepam, triazolam, or midazolam)
- Combination sublingual troche consisting of ketamine, midazolam, and ondansetron (Imprimis compounding pharmacy)

Age-Based Protocol for Initial Dose of Lorazepam

- The patient is to place sublingually until dissolved.
- Less than 65 years old: 10 mg
- 65 to 79 years old: 5 mg
- 80 to 89 years old: 2.5 mg
- 90 years of age or older: None

REASONS FOR ADOPTION IN OPHTHALMIC SURGERY

Oral sedation removes the need for fasting. This is a substantial benefit for patients, for whom fasting and the placement of an intravenous (IV) line often cause greater disruption and anxiety than the surgery itself. Moreover, many patients are unsure how to maintain a medical schedule when fasting. As a result, patients with diabetes can experience large swings in blood glucose levels. Glucagon-like peptide-1 receptor agonists and antihypertensive medications are also frequently mismanaged by fasting patients during the preoperative period.[5] Adjusting these classes of medication can lead to situations in which the anesthesia provider must deliver temporizing IV medications or surgery must be canceled.

Workflow can benefit from oral sedation as well. Delays due to difficulty placing an IV line are eliminated, as are pre- and postoperative discussions between an anesthesiologist and the patient. Simplifying pre- and postoperative procedures shortens turnover time and improves surgeon efficiency. If a patient shows up late or early for surgery, fitting them into the schedule is easier with oral versus IV anesthesia. Without a fasting requirement, same-day additions are easier to accommodate, and afternoon cancellations can be filled if needed.

The use of oral sedation addresses a practical issue for ASCs, which is the current shortage of anesthesia providers, which can disrupt OR schedules and lead to delays and cancellations. In addition, ASCs are increasingly faced with the financial burden of paying an anesthesia stipend to ensure coverage at their centers.[6]

ORAL SEDATION IN GLAUCOMA SURGERY

The two main obstacles to adopting oral sedation for glaucoma surgery are (1) the frequent need for regional anesthesia and (2) the longer case duration as compared with cataract or refractive surgery[7] For several years, these factors prevented me from adopting oral sedation for glaucoma surgery, despite its being my preferred technique for routine cataract surgery.

Traditionally, glaucoma drainage device (GDD) implantation, trabeculectomy, and cyclophotocoagulation have been performed after a retro- or peribulbar block while the patient is under heavy sedation, often with propofol.

Alternatives that do not require heavy sedation are available and well tolerated with oral sedation. Sub-Tenon blocks are easily performed after a subconjunctival wheel of local anesthetic. In my experience, these are an excellent option for subconjunctival surgery when a conjunctival peritomy is already required. Another option is a multitissue blitz technique with lidocaine gel and intracameral and subconjunctival lidocaine, as described and long advocated for by Marlene Moster, MD.[8]

I have found that cases planned for under 1 hour are well tolerated by patients under oral sedation. MIGS, placement of a Xen Gel Stent (AbbVie), trabeculectomy, cyclophotocoagulation, and implantation of many GDDs may be performed with oral sedation. Larger surgical revisions, during which significant scar tissue may be encountered or operative time may be longer, typically benefit from traditional IV sedation.

TIPS FOR INCORPORATING ORAL SEDATION INTO YOUR PRACTICE

No. 1: Know Yourself as a Surgeon

You must be able to keep a patient calm in the OR when difficulties arise. Can you talk a patient through an anterior vitrectomy after a capsule ruptures, or do you prefer to have a patient anesthetized at the first sign of a complication? Do not put yourself in a situation that could become problematic. Of the utmost importance are the patient and their best possible surgical outcome.

Some surgeons recommend transitioning to oral sedation by also keeping IV access and anesthesia available during surgery in the event it is needed. This might increase your comfort, but it is not a long-term requirement. A study of routine resident cataract surgery cases using oral anxiolytics while an IV line was in place found that supplemental IV anesthesia was not required in any cases during a 2-year retrospective window.[9]

POINTS OF PATIENT ANXIETY

Preoperative Bay

- Review with the patient what they can expect once in the OR.
- Reassure them that they can provide feedback during the procedure.

Draping

- Ensure that the person applying the drape talks the patient through the process.
- Minimize the time the patient's mouth and nose are covered to reduce feelings of claustrophobia.

Initial Exposure to the Microscope Light

- Keep the OR lights on until the microscope light has been illuminated to minimize dark adaptation.
- Start with a dim microscope setting and slowly increase the light intensity throughout the case to decrease eyelid squeezing by the patient and difficulty with fixation.

No. 2: Know Your Patients

You likely have a feel for which patients are not good candidates for premium IOLs or glaucoma surgery. Similarly, you can learn to identify which patients are and are not likely to fare well with oral sedation (see *Current Oral Sedation Protocol*).

Patients look to the surgeon for guidance and reassurance. Most of my patients have done well with oral sedation since it became my standard approach. Typically, all the reassurance they need is to be told that they will receive a pill to help them relax, they will get to skip fasting and the placement of an IV line, and any pain or discomfort will be managed with local anesthesia. If a patient is still worried, I follow up with questions to identify the source of their anxiety. Are they claustrophobic? Are they reflecting on a prior poor surgical experience? Do they have chronic pain or back problems that could make comfortable positioning a challenge? Do they have a general concern about surgery?

Ultimately, some patients benefit from IV sedation. Of more than 3,300 patients undergoing cataract and/or glaucoma surgery with me during the past 3 years using only oral sedation, two entered the OR and had to be rescheduled for surgery with IV anesthesia. Both instances occurred before the start of surgery as the surgical drape was placed.

No. 3: Consider the Case

Case selection is important when adopting oral sedation. The easiest cases to start with are straightforward cataract surgery, MIGS, and placement of a Xen Gel Stent. GDD placement can be performed with a sub-Tenon block through the quadrant of tube shunt implantation. The duration of GDD surgery may be longer than cataract surgery or MIGS but typically carries a lower risk than trabeculectomy. For these reasons, I began using oral sedation with trabeculectomy last.

No. 4: Engage Your Staff

The ASC preoperative and OR staff must be active participants in the process. Preoperative nurses can help identify patients who need extra medication. Patient case order can then be adjusted to accommodate any individual who will be receiving another dose of an anxiolytic.

Both of my surgical cases that were canceled due to patient anxiety in the OR occurred during my first year at a new ASC. Since then, the preoperative nurses have become proactive about alerting the OR staff and me when a patient may require additional medication or need to wait longer in the holding area for oral medication to become more effective

The OR staff must be diligent about potential changes in case order to ensure correct IOLs and other implants are pulled for each patient.

No. 5: Get a Good Start

Draping, speculum placement, initial exposure to the microscope light—the beginning of the case is when patients are most likely to experience anxiety (see *Points of Patient Anxiety*).

My staff and I are diligent in ensuring the patient's airway is clear during draping to minimize claustrophobia. We talk patients through lid speculum placement and have a topical anesthetic available nearby if it is needed.

My baseline microscope light intensity is set at 15%, which I have found sufficient for ensuring proper patient and surgeon positioning and placement of the initial paracentesis. This setting allows the patient to become acclimated to the light, whereas higher intensity can prompt eyelid squeezing and poor fixation at the start of surgery. The illumination intensity is slowly increased throughout the beginning stages of surgery, which I find patients typically tolerate well.

No. 6: Consult a Colleague

It can be helpful to talk to a colleague who is using oral sedation about their protocol, missteps, and lessons learned. Insight into how the use of oral sedation fits within your local ASC and anesthesia community is also beneficial.

CONCLUSION

The use of oral sedation in glaucoma surgery can benefit the patient, the surgeon, and the ASC. With increasing patient loads, decreasing reimbursement, and the complexity of navigating available anesthesia resources, oral sedation has a growing role in glaucoma management. ■

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