

Anesthesiology in a Changing Cataract Landscape

Innovations in phacoemulsification, IOLs, and other aspects of cataract surgery have resulted in safer and less invasive procedures that no longer require a hospital setting, in many cases, said Inder Paul Singh, MD, of The Eye Centers of Racine & Kenosha, in Kenosha, Wisconsin. These advancements have also reduced surgical time and the need for ocular akinesia. As a result, ophthalmologists have been exploring alternative approaches to standard anesthesia and sedation methods.

Shifting Surgical Theaters

The use of anesthesia during cataract surgery made national headlines in 2018 when Anthem BlueCross Blue-Shield (BCBS) proposed new clinical guidelines stating that the administration of monitored anesthesia care by a dedicated anesthesiologist or nurse anesthetist was not medically necessary for routine cataract procedures given the overall safety profile. (Based on pressure from the Academy and other parties, it subsequently rescinded the proposed guidelines.)

Although the proposal drew strong objections from the Academy and the American Society of Anesthesiologists, and even an author of a study cited by BCBS in its proposed guidelines,¹ it raised a question for ophthalmologists:



CATARACT SURGERY. The anesthesia team at the Bascom Palmer Eye Institute as they prepare for a routine cataract surgery.

what exactly is the role of the anesthesiology team in light of innovations in office-based cataract surgery?

Office-based surgery. The evolution of anesthesia for cataract surgery is closely tied to changing surgical settings, Dr. Singh said. Because of refinements to cataract surgery, there has been an interest in office-based surgery, he said. “There’s such an emphasis on cost savings in medicine right now. These in-office suites can really help us further streamline our workflow by forgoing intraoperative anesthesia monitoring if it is unnecessary.”

Class A and Class B facilities. In-office surgery suites are categorized into two classes, Dr. Singh explained. Class A facilities are accredited for oral and topical anesthetics and do not require

a dedicated anesthetist, while a Class B designation allows for monitored oral and higher-level intravenous (IV) sedation—but not general anesthesia—under the supervision of a licensed anesthesiology care team.

Dr. Singh operates a class A in-office surgery suite, in addition to providing services at ambulatory surgery centers (ASCs) and hospitals, all of which have different accreditation standards. In the office-based suite, “We have a crash cart and we monitor vitals, but there’s no IV access,” he said.

ASC and hospital. Office-based cataract surgery is most appropriate for healthy patients or those with only mild systemic disease, said Steven Gayer, MD, at the Bascom Palmer Eye Institute in Miami. More complex cases with other comorbidities as well as anxious patients who may not be able to cope with strictly oral sedation may be best suited for care at an ASC or hospital

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BY MIKE MOTT, CONTRIBUTING WRITER, INTERVIEWING KENDALL E. DONALDSON, MD, MS; STEVEN GAYER, MD; AND INDER PAUL SINGH, MD.

setting, he said.

Dr. Singh agreed, saying that when a case is complex, or if the patient has health issues or comorbidities, he may want more monitoring and the option of using anesthesia. In these instances, he sends patients to his ASC or the hospital, which have the infrastructure of the anesthesiologist with IV. "No doubt, ASCs and hospitals are important and offer a higher level of ability to perform certain type of surgeries."

In-office advantages. Still, Dr. Singh said, the in-office surgery suite "has been great for the more than 90% of my patients who are otherwise healthy." And a recent adverse event study backs this up.² In part, he said, this is because the office setting—similar to an ASC—reduces patient anxiety from the start, which leads to less need for sedation. His patients also don't have the stress of undergoing surgery in a hospital or ASC setting: they don't have to refrain from eating or drinking prior to their surgery, nor do they have to go through the preadmission process, change into a gown, or prepare for an IV.

IV or Oral Sedation?

IV. Many surgeons opt to use IV sedation as insurance in case a medical emergency arises, and a dedicated anesthesiologist can provide a highly tailored experience for the patient, said Dr. Gayer. "We use short-acting agents at just the right moments," he said. "We provide an antiemetic if it's indicated or if we need to rescue the patient should they become nauseated. Our sedation is targeted. It's refined. It's elegant."

Oral. However, even in ASCs, a growing number of ophthalmologists are moving toward oral/sublingual sedation for routine cataract cases, said Kendall E. Donaldson, MD, MS, at the Bascom Palmer Eye Institute. And not having to place an IV is just one of the many reasons surgeons are making the switch.

"The question is how much sedation is truly necessary for a large part of what we do as anterior segment surgeons," said Dr. Donaldson. "Are we overmedicating a lot of patients unnecessarily? We're starting to see significant advantages with oral sedation in terms of not

only complications and cost savings, but also meeting the expectations of a demanding patient demographic."

Complications. There is indeed a markedly low complication rate for cataract surgery in general, said Dr. Donaldson. However, data suggest that risk of bradycardia, hypertensive episodes, postoperative drowsiness, and other adverse events are more associated with the use of IV versus oral sedation.³

Costs. Some estimates report significant cost savings when routine cataract surgery is performed with oral sedation and topical anesthesia versus IV sedation and block anesthesia.⁴

Patient satisfaction. Some patients are needle averse, said Dr. Donaldson, and may choose not to undergo cataract surgery because of an IV phobia or IV-associated challenges in their past. The IV also may give the impression that the surgery is a more complicated procedure or more cumbersome surgical "experience," she said.

Oral sedation, on the other hand,

can offer these individuals the option to mitigate perioperative pain while maintaining a level of comfort similar to that achieved by IV sedation. In fact, recent studies have found similar levels of satisfaction with both IV and oral sedation among patients undergoing cataract surgery—the same was also true for the surgeons involved.^{5,6}

And this focus on patient experience is key in today's health care environment, said Dr. Singh. "Much of how we're judged as eye care providers now depends not just on the final 20/20 outcome but also on the experience of surgery," he said. "What was the flow like for the patient? How long did they have to wait? What do they remember from the procedure? Were they comfortable?" Not only can the reduced use of anesthesia allow for more efficient and cost-effective surgeries, said Dr. Singh, but also it can provide a more positive patient experience.

Diazepam. For Dr. Singh, oral diazepam (Valium) is the ideal sedative for

Notes From the Academy's D.C. Office

While some ophthalmologists have commercial contracts that reimburse procedures delivered in office-surgical suites, the Medicare fee schedule does not publish non-facility reimbursement for cataract, cataract/MIGS, and retinal/vitrectomy procedures at this time. However, select regional Medicare contractors may choose to price components of these procedures in the office setting, and further Medicare adoption is anticipated in the coming years.

Three hurdles to office-based surgery. However, CMS has been considering requests from interested parties to change this policy. In its 2023 Medicare Physician Fee Schedule (MPFS) Proposed Rule, the agency sought feedback about these procedures in the office setting. The Academy's response was based on the results of a 2022 member survey, which showed the top barriers to expansion of office-delivered procedures were patient safety concerns, lack of accreditation standards/certification, and a lack of Medicare coverage.

The Academy's position. The Academy does not oppose further developments in office-based surgery, but it wants to ensure adequate patient protections so members are well prepared to adopt the care delivery model. CMS was receptive to this concern. In the agency's 2023 MPFS final rule, it stated: *Based upon commenters' feedback, we have concerns about these services being furnished in non-facility settings. It is also unclear whether these services are routinely being furnished outside of facility settings. CMS will continue to evaluate whether these services are being furnished in non-facility settings and will consider establishing non-facility values for these services at that time.* CMS has not made any further proposals for office-based cataract surgery in subsequent rulemaking cycles. The Academy will continue to gather information concerning cataract and retinal surgeries in the non-facility office setting for potential future rulemaking.

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most of his routine cataract surgeries. "A majority of my patients don't require any IV sedation," he said, "and so whether it's in the office or in the ASC, 5 to 10 mg of diazepam is enough to help a patient feel comfortable and yet stay cooperative. In my clinical experience, this method of oral sedation has been the sweet spot."

MKO Melt. Another IV alternative is the MKO Melt (ImprimisRx), a sublingual troche consisting of 3 mg of midazolam, 25 mg of ketamine hydrochloride, and 2 mg of ondansetron. Although he does not often use this drug, Dr. Singh said studies show that its sedative effects are evident after two to three minutes and peak at about 15 minutes. Studies have shown that not only is MKO Melt as effective as IV sedation in providing a comfortable patient experience but also it can result in improved pre- and postoperative vital signs compared with semiconscious sedation.^{6,7}

However, there are some drawbacks, said Dr. Gayer. "It's kind of a shotgun approach because you're giving a fixed dose of three different drugs that are not specifically tailored to the patient's needs," he said. "You're also essentially giving the patient midazolam (Versed) orally, so you really need to make sure you have good, up-to-date monitoring of the patient's vitals and be on the lookout for any disinhibition that can result in an uncooperative patient."

Opioids. Oral sedation can be opioid-free, said Dr. Donaldson. "Medical care in general is trending away from opioid use due to societal concerns over addiction and abuse," she said. "And we know that opioid administration during routine cataract surgery doesn't need to be a common practice any longer."

For example, intracameral phenylephrine 1% and ketorolac 0.3% solution (Omidria) is now being used by many surgeons to decrease the inflammatory cascade during surgery and reduce postoperative ocular pain, said Dr. Singh. "The opioid epidemic is what made me look at this new agent, and I actually use it with all of my patients," he said. "The company's data clearly support less need for opioids during and after cataract surgery."

This is not to say that opioids should be avoided at all costs, said Dr. Gayer. "There is an abuse issue in this country, but in the right hands, with the right drugs, in the right dosing, with the right timing, IV anesthesia can be a blessing for many of our patients," he said. And many new ultra-short-acting agents on the market can ameliorate some concerns, said Dr. Gayer. For example, remimazolam (Byfavo), a benzodiazepine, and remifentanil (Ultiva), a synthetic opioid, have effective utility for just over five minutes. And unlike ketamine, midazolam, or other narcotics, they both are metabolized in the bloodstream, independent of the liver and kidney, so they're good alternatives for many elderly patients, he said.

Open Communication

In order for cataract surgeons in the ASC or a hospital setting to create the best experiences for all patients, whether their surgical cases are routine or complex, ophthalmologists and the anesthesiology team need to be on the same page and stay aware of the latest updates in their respective fields, said Dr. Donaldson.

An opportunity. Both sides may have different perspectives; however, that's not a bad thing, said Dr. Singh. "We, as surgeons, can get caught up going through the motions of surgery for efficiency's sake," he said. "But we need to learn from one another. I might want to use oral sedation, but there could be rules and regulations that I'm unaware of that preclude its use in certain patients. So, it behooves us as practitioners to stop and discuss with our anesthesiologists the latest changes in our fields and the data on which we are basing our recommendations."

Checklists. To help with any disconnects, Dr. Gayer has been working with Dr. Donaldson and other cataract surgeons at the Bascom Palmer Eye Institute on a new formalized communication tool. Both ophthalmologists and anesthesiologists now share templated checklists in the morning to keep track of important patient details for high-volume surgical days. "It's been a great way to facilitate conversation," said Dr. Gayer. "For example,

what patients might benefit from a block instead of topical or intracameral anesthesia? Should it be short- or long-acting? We also get a heads-up on other important patient details, including the size and shape of the eye, any concerning medical issues, or a history of anxiety or severe nausea."

In the end, everyone is on the same team with the patient at the center, said Dr. Singh. "Each anesthesiologist might have their own personal way of delivering sedation, just like each surgeon might have a different technique," he said. "But this isn't a turf battle. It's a matter of setting and establishing expectations together."

1 Rosenfeld SI. *EyeNet*. 2018;22(4):10.

2 Kugler LJ et al. *J Cataract Refract Surg*. Published online June 5, 2023.

3 Katz J et al. *Ophthalmology*. 2001;108(10):1721-1726.

4 Reeves SW et al. *Am J Ophthalmol*. 2001;132(4):528-536.

5 Peeler CE et al. *Ophthalmology*. 2019;126(9):1212-1218.

6 Smith JC et al. *AANA J*. 2020;88(6):429-435.

7 Dickson D et al. *J Cataract Refract Surg*. 2020;46(7):1037-1040.

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Dr. Gayer is professor of clinical anesthesiology at the Bascom Palmer Eye Institute in Miami. *Relevant financial disclosures:* None.

Dr. Singh is president of The Eye Centers of Racine & Kenosha in Kenosha, Wis. *Relevant financial disclosures:* None.

See disclosure key, page 4. For full disclosures, view this article at aao.org/eyenet.

AT THE MEETING

Don't miss the Spotlight on Cataract symposium (event code Sym57). **When:** Monday, Oct. 21, 8:00 a.m.-12:15 p.m. **Where:** Grand Ballroom S100ab. **Access:** AAO 2024 registration.

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