



Going Under

Communication between surgeons and anesthesiologists is key to providing safe pain relief and anesthesia in an outpatient setting.

By Inga Hansen

IN AESTHETIC PLASTIC SURGERY, the patient experience is paramount. In addition to delivering fabulous results, surgeons must also provide the most pleasant surgery experience possible with the lowest risk to the patient. Key to meeting these expectations is working closely with anesthesiologists to determine the best anesthesia options for your patients.



"In plastic surgery, especially, consistency as far as the team approach is important," says David Rosen, MD, president, Midwest Anesthesia Partners in Illinois. "You need to know the surgeon you're working with, more so than with other specialties. Some surgeons are faster; some are slower; some have a unique approach to their surgeries, and this really factors into the anesthesia."

The current trend in outpatient and office-based surgeries has been toward sedation and local anesthetic. When patients are awake, they can verbally respond to pain and help surgeons gauge their outcomes by opening and closing their eyes during blepharoplasty and moving their limbs during liposuction. Keeping patients awake also reduces concerns such as post-operative nausea and allows practices to perform surgeries without a lot of expensive monitoring equipment. But the indications for awake surgeries are limited.

"All cosmetic procedures—strictly elective procedures—can be done under straight local anesthesia. The problem is, most people don't want to be there for the experience," says Barry Friedberg, MD, anesthesiologist and creator of the Goldilocks Anesthesia technique. "So the question becomes, how much do you need to tread on people's physiology to create a situation where they don't hear and don't remember the experience?"

The Move to Deep Sedation

In an effort to offer the benefits of both sedation with local and general anesthesia, surgeons are increasingly performing plastic surgeries under deep sedation. One of the more common protocols involves putting the patient to sleep with a drug, such as propofol, combined with a pain reliever and local anesthetic.

More than 20 years ago, Dr. Friedberg developed the 'Goldilocks Anesthesia' technique, which involves the use propofol, ketamine and local anesthetic. "Before I called it Goldilocks, I called it minimally invasive anesthesia," he says. "The idea is to trespass the least possible amount on the patient's physiology to maximize their safety."

Dr. Friedberg puts the patient to sleep using a slow, continuous dose of propofol, followed by ketamine. Local anesthetic, typically lidocaine, is injected into the treatment area.

"The reason ketamine is added to propofol is that propofol has no analgesic effect," says Dr. Rosen. "It will put you to sleep, it will keep you asleep, but if I use a scalpel on your body, your vitals will respond, you will 'feel' that incision. Compare that to the gas anesthetics, which put you to sleep, keep you asleep and have pain relievers in them."

He notes that while ketamine looks good on paper—"it doesn't make you stop breathing as easily as other drugs like fentanyl or morphine would. It makes you sleepy, it gives good pain relief and it's cheap" he says—ketamine has its own risks. Most notable is the risk of hallucinations.

A 2010 *Plastic & Reconstructive Surgery* CME article, entitled, "Anesthesia for Cosmetic Surgery," cites ketamine as an option for both induction and pain relief. But authors Peter J. Taub, MD, note that, "hallucinations, hypertension, increased intracranial pressure and salivation have limited its appeal."

Using the Goldilocks technique, Dr. Friedberg argues he can prevent the experience of hallucination by monitoring levels of propofol using the BIS Brain Monitoring System (Covidien). "By giving incremental, small doses of propofol—3.5mg-7mg every 10 or 15 seconds—until you get them down to a BIS of 75, you're able to produce a numerically

reproducible level, during which time the patient doesn't have any side effects from the ketamine," he says. "The patient enjoys going to sleep. And when you're very good at titrating people to sleep, the mouth doesn't fall open because you've just trespassed the least possible. In 22 years, I haven't had to intubate anybody because they can keep their airways open."

Indeed, one of the biggest draws of the propofol/ketamine combination is that the drugs can be administered without endotracheal intubation. But Dr. Rosen cautions doctors not to downplay the risks of deep sedation. "The patient is completely anesthetized, they're asleep. The surgeon thinks it's sedation, because there's nothing in the patient's mouth, but really, that's potentially dangerous," he says. "If you don't have good control of the airway because you're using sedation, that's where you're going to have a massive complication."

Both Drs. Rosen and Friedberg point to the need for cooperation between surgeons and anesthesiologists to make deep sedation safe and pain free. "I know most plastic surgeons are doing a room air general, where they're giving deep

these circumstances, regardless of vasoconstriction, it means you need to put local in the area and that solves 98% of the movement problems. The problem is, most plastic surgeons don't want to stop what they're doing and inject a little more local anesthesia. They have historically assumed that if they see blanching or vasoconstriction, they have adequate analgesia.

"General anesthesia is known and practiced by everyone who is a dedicated anesthesia provider, and it's easy to understand," he continues. "Unfortunately, Goldilocks anesthesia is more like a tango, where the surgeon and the anesthesiologist need to work together for the patient's benefit."

The bottom line is that patients under deep sedation do require monitoring throughout surgery.

A Regional Approach

Another alternative to general anesthesia that is used widely in orthopedics, but seldom in plastic surgery, is regional anesthetic or nerve blocks. "For lower body liposuction, we know there is a higher risk of DVT, and that is potentially catastrophic," says Dr. Rosen. "In orthopedic knee replacements,

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sedation and a lot of local. But the problem there is, many are hesitant to give local frequently during the procedure," says Dr. Rosen. "They'll numb the patient up real well at the start and maybe do some more at the end around the incisions that are closed. But during, if the patient is just under sedation and feeling pain, most surgeons are reluctant to inject more local. What happens then is you're just giving more and more drugs, and these patients wake up feeling lousy."

Dr. Friedberg uses a secondary "EMG" setting on the BIS, which monitors the frontalis muscle, to track patients' movement during the procedure. "I have three golden rules for the surgeon, which say that if the propofol is in a range between 60 and 75, and the EMG is at the baseline, that means the patient is asleep and doesn't see, hear or remember," he says. "If you see movement under

where a lot of the patients are elderly, you're wrapping the knee up in a tight garment, and the patient is going to be immobile because their knee hurts so much, spinal blocks have become the norm. And I regret that it's not more prevalent in cosmetics."

Regional anesthesia is not commonly offered in an outpatient setting for three reasons: One, many anesthesiologists are not comfortable performing blocks. Two, some surgeons have had bad experiences with spinal blocks. "A pretty efficient anesthesiologist can get a patient asleep and ready in just a few minutes, but that same anesthesiologist may take 20 minutes to do a spinal block," says Dr. Rosen. "I've got four cases with him, that's 80 minutes of anesthesia that I'm waiting for and maybe one in 10 patients or one in 15 will call and say, I have the worst headache I've ever had."

The third obstacle is the use of day-to-day



coverage groups, where the surgeon is working with different anesthesiologists based on who is available. "You don't know if the guy coming in Wednesday knows how to do spinals, so you can be setting yourself up for a real problematic and even dangerous situation," says Dr. Rosen. "But, in general, what we've seen in anesthesia in the last 10 years is a huge push toward more regional anesthesia. In a setting where the anesthesiologist is familiar and comfortable with regional anesthesia, where they have a good working relationship with the surgeon and know how long it will take for the surgeon to perform a given procedure, this could be considered an option."

In Defense of General Anesthesia

Though the push in recent years has been away from general anesthesia, Dr. Rosen argues that the drugs and protocols used today in general anesthesia, combined with an elective surgery patient base that has been screened for significant health risks, make general anesthesia a very safe choice for surgeons. "Most plastic procedures are a couple hours. The patient actually will get less anesthesia when they're under general than with sedation," he says. "This results in a more stable, secure field for the surgeon to work in, and the wake up is much quicker and the recovery is much quicker."

The costs associated with monitoring equipment and the need for an on-site anesthesiologist has played into some surgeons' decisions to investigate alternatives to general anesthesia, but there are ways to reduce costs. "If you have multiple rooms going, an anesthesiologist could easily supervise

nurse anesthetists in multiple rooms, and the benefit is a cost efficiency," says Dr. Rosen. "If I have three rooms running with three anesthesiologists, that's going to be costly. If I have three nurses in the room and one anesthesiologist is supervising, the cost is closer to two anesthesiologists, so you're saving a third on the personnel costs. A nurse anesthetist with supervision can do whatever they're comfortable doing and whatever you credential them for."

Improving the Patient Experience

Plastic surgeons who achieve high satisfaction rates spend a lot of time consulting with patients prior to surgery to determine and set expectations. They also go to great lengths to make sure patients understand what will happen during and after the surgery. Practices that would like to further enhance the patient experience may benefit from having the patient speak with the anesthesiologist as well.

"The problem with anesthesia is we have very limited time to bond with the patient," says Dr. Rosen. "They've seen that surgeon multiple times and discussed their options and researched them. It is also really important to discuss anesthesia with the patient ahead of time. We encourage patients to call us before hand. They can go crazy talking to their fiends and Googling surgery risks, but if I can talk to the patient for five minutes on the phone, 99% of the time, I can allay their fears. A day before conversation is going to have a lot more impact than the day of surgery." ❖

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