



## Preparing Patients Taking Sublingual Buprenorphine to Treat Addiction for Surgery

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**T**he use of buprenorphine products to help treat opioid dependence has increased over the last decade. This trend has been paralleled by an increase in the number of surgeries involving patients taking buprenorphine products. Educating surgeons, nurses, and anesthesia personnel about the pharmacologic properties of buprenorphine and strategies to use it in the perioperative care of these patients is important.

Buprenorphine is a semisynthetic opioid derived from thebaine, a naturally occurring substance that, like morphine and codeine, is derived from the poppy pod. There are 2 categories of medication containing buprenorphine to treat opioid dependence: the monoproduct, Subutex, which contains buprenorphine only, and combination products, Zubsolv and Suboxone, which contain buprenorphine and

naloxone. Naloxone is a pure opioid antagonist and is not bioavailable if the medication is taken sublingually, as prescribed. Naloxone only becomes active if the medication is snorted or injected. Therefore, the naloxone is present as a deterrent for abuse.

Buprenorphine is described casually as a mu receptor agonist-antagonist. This implies that buprenorphine activates the mu receptor but then also blocks the receptor to other mu receptor agonists. However, buprenorphine is more accurately described as a partial mu receptor agonist with a very high affinity for the mu receptor. Clinically, patients describe buprenorphine as being “as strong as a Percocet [oxycodone/acetaminophen] 10 mg.” If one takes small doses of other opioids with buprenorphine, the other opioids will have no mu receptor activation. However, the blockade produced is not absolute, and buprenorphine



can be “overpowered” at the receptor level with higher doses of other mu receptor agonists.

Since the enactment of The Drug Addiction Treatment Act of 2000, the prescribing of buprenorphine products for patients with opioid dependence has steadily increased. These patients frequently present to the operating room for scheduled and emergency operations. However, there is little in the literature on management of the “Suboxone Patient” who requires anesthesia for an operation. The considerations required for perioperative analgesic control of such patients are complex. This article describes the protocol used by my practice, which has been used on more than 300 patients presenting for elective procedures while taking sublingual buprenorphine products. This article does not address transdermal buprenorphine (Butrans).

### Patient Protocol

My practice has a sizeable Buprenorphine Clinic (anesthesia lead) that is consulted frequently for recommendations regarding the perioperative opioid care of patients taking buprenorphine. While this is a retrospective uncontrolled review, the protocol has been implemented without exception or difficulty.

Cases are divided into either Day Surgery, having discharge to home on the day of the surgery, or Overnight Cases, which require an overnight stay in the hospital.

#### Day Surgery Cases

For this type of case, patients are maintained on their buprenorphine as normally scheduled. They are encouraged to take it early in the morning before their case, and to continue to take the medication as scheduled (most frequently bid). Under the protocol, surgeons do not prescribe supplemental opioids at discharge.

#### Overnight Stay Cases

In these cases, we stop the patients’ buprenorphine 3 days before surgery. Specific instructions are given as follows:

- To the Patient: You will stop your buprenorphine (Zubsolv, Subutex, or Suboxone) 3 days prior to your scheduled operation. Twelve hours after your last buprenorphine dose, you may begin: hydrocodone/acetaminophen (Norco 10/325), one tablet tid prn up until your operation.
- To the Surgeon: Please give the patient, on discharge from the hospital, the standard one-time prescription for postoperative opioids that you give all patients who have had the given operation. Instruct the patient to resume his or her buprenorphine as previously scheduled after these medications are used.

My pain clinic staff members see patients scheduled for elective surgery about 1 week prior to their scheduled procedure to discuss this perioperative protocol with them. While these patients are at risk for relapse, rational care of patients in acute perioperative pain needs to be addressed. We encourage all patients to bring a “loved one” with them for this preoperative strategy meeting. This person can be invaluable in facilitating adherence to our protocol.

#### Rationale Behind Protocol

Regarding day surgery cases, the rationale is as follows: Buprenorphine is a semisynthetic opioid with definite mu receptor activation, again, clinically as strong as a Percocet 10 mg. Pain clinic staff members explain to patients that “the strongest analgesic their surgeon is going to prescribe for postoperative pain relief is Norco or Percocet.” The analgesia from their buprenorphine is just as strong, if not stronger; therefore it is senseless to give them a weaker analgesic.

It is important to remind patients that they are being prescribed

buprenorphine for the treatment of opioid dependence, not as a pain reliever. The pain relief provided by buprenorphine is a beneficial side effect of the medication.

Regarding more involved surgeries requiring an overnight stay in the hospital, it is much less confusing if patients are taken off their buprenorphine 3 days preoperatively, thus freeing up their mu receptors. This enables anesthesia, and the entire perioperative team, to address their acute pain needs in a less complex manner. When patients are taken off buprenorphine, despite its long half-life, they will go into significant opioid withdrawal over the 3 days before the surgery. This is why they are prescribed 9 tablets of hydrocodone/acetaminophen (Norco 10/325 mg) or oxycodone/acetaminophen (Percocet 10 mg) for this period. The protocol does not include specific instructions to surgeons on what postoperative opioid and quantity to order for patients who have had surgeries requiring an overnight stay. The protocol recommends that surgeons use their standard discharge script. Most patients seem to be given a prescription covering 1 to 2 weeks worth of opioid medications.

The Buprenorphine Clinic staff, their “buprenorphine doctors,” remain the prescribing service when they transition back to their original buprenorphine medication. The protocol emphasizes close vigilance by a person close to the patient, along with his or her behavioral therapist, and the Buprenorphine Clinic team. Oral fluid testing alone is used for patients with substance abuse (opioids), which obviously decreases adulteration, but most probably has a beneficial therapeutic effect (fear of getting ‘caught’ can influence behavior).

Great care is taken when writing the prescription for this preoperative opioid for the patient to avoid significant



confusion regarding the prescription, such as a pharmacist asking why the patient has a prescription for Norco when they are taking buprenorphine for addiction. An example of what we write on a prescription is as follows:

- Norco 10/325
- #Nine
- Sig: Stop Suboxone on January 2, 2014 at 8 AM in anticipation of major surgery on January 5, 2014, and begin Norco 10/325, one PO q8 hours prn at 8 PM January 2, 2014.

### Emergency Surgery

Anesthesia personnel are skilled at multiple methods of ensuring stable intraoperative analgesia. When a patient who is taking buprenorphine presents for major emergency surgery, the agonist-antagonist can be overpowered by significant doses of other opioids. There is scant evidence in the literature regarding the superiority of one opioid over any other with respect to its ability to overpower buprenorphine. Opioids should be dosed to desired effect or until the patient experiences significant side effects. The use of adjunctive medications along with regional anesthetic techniques can be very helpful. Strict postoperative surveillance is recommended in cases in which higher doses of opioids are used in emergency situations. Often the patient is

admitted to the ICU for respiratory monitoring. One also must remember the other caveat in caring for patients with opioid dependence—increased tolerance. These patients will require higher doses of opioids to achieve the same analgesic levels as patients who are naive to opioids.

### Conclusion

We have employed this protocol in more than 300 patients without any significant issue. Lastly, we always defer the final decision on the perioperative opioid care of the patient on buprenorphine to the patient's surgeon and anesthesia provider. ■

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### Commentary

In addition to making the pharmacologic changes reviewed in the article, I would also consider using the elective perioperative setting to increase non-opioid options for pain management, such as the use of anticonvulsants in the perioperative period for appropriate patients, to decrease the risk of worsening postoperative pain control. There is a growing body of medical literature on this topic.<sup>1</sup> I also use it as an opportunity to increase patient awareness of non-pharmacologic approaches to pain. These can include many of the cognitive behavioral techniques used for pain flares in patients with chronic pain (breathing exercises, mindfulness, use of distracting techniques like music, etc). I agree that switching from buprenorphine to a short-acting full mu agonist prior to surgery is the approach that gives you the most flexibility.

**Ilene Robeck, MD**

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### Suggested Reading

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