

PATIENT GUIDE TO ANESTHESIA AND PAIN CONTROL FOR SHOULDER SURGERY

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Overview

One of the main goals during the perioperative period, aside from providing you the best clinical outcome for your shoulder surgery, is to safely get you through the surgery and have your pain adequately controlled when you wake up from your operation. The purpose of this document is to provide you with a brief overview of the anesthetic options and pain management for your surgery. We are hopeful that this guide will answer your questions about anesthesia and the recovery after your surgery.

Goals of Anesthesia:

One of the most important parts of your surgery is the type of anesthesia and pain management that we use during and after surgery. Adequate anesthesia and pain management after surgery helps get the pain from surgery under control, and to a comfortable enough level that you are able to do your rehab if needed. The goal of anesthesia is to not only keep you safe and asleep during surgery, but also to optimally treat your pain and minimize any side effects to promote a successful recovery from your surgery.

What are the options for anesthesia during surgery?

There are two types of anesthesia that are commonly used for shoulder surgery. These are called “general anesthesia”, where you are made unconscious during surgery and a second type called “regional anesthesia”, where the nerves to the arm or extremity are injected with local anesthetic to keep your arm or extremity numb. This latter type of anesthesia is also called a “nerve block” or “peripheral nerve block.”

General anesthesia is typically induced with medicine placed into your veins to put you to sleep and then gases are typically used to keep you asleep until the procedure is completed. In these cases, the anesthesiologist may also give you pain medicine by vein (intravenously or IV) so that when you awaken you have less pain. This technique of general anesthesia with pain medicine has proven to be very successful and safe and it is the most common type of anesthesia used for many surgical procedures around the body.

What is regional anesthesia?

Regional anesthesia (peripheral nerve block) involves placing local anesthetic or “numbing” medication (like Novocain at the dentist) near the nerves that provide pain sensation to your arm or extremity. These nerve blocks are most effective when the medication is injected close to where the nerves are still together and have not branched out. For your upper extremity (shoulder, arm, elbow, forearm and hand) the nerves begin in your neck (cervical spine) and go out beneath the collarbone deep in front of the shoulder and then down your arm. Where they are closest together is the hollow area or depression above your collarbone (or clavicle) (Figure 1). If you place or inject anesthetic in that location then the nerves become numbed and you lose sensation of pain and feeling in your shoulder and the rest of your arm.

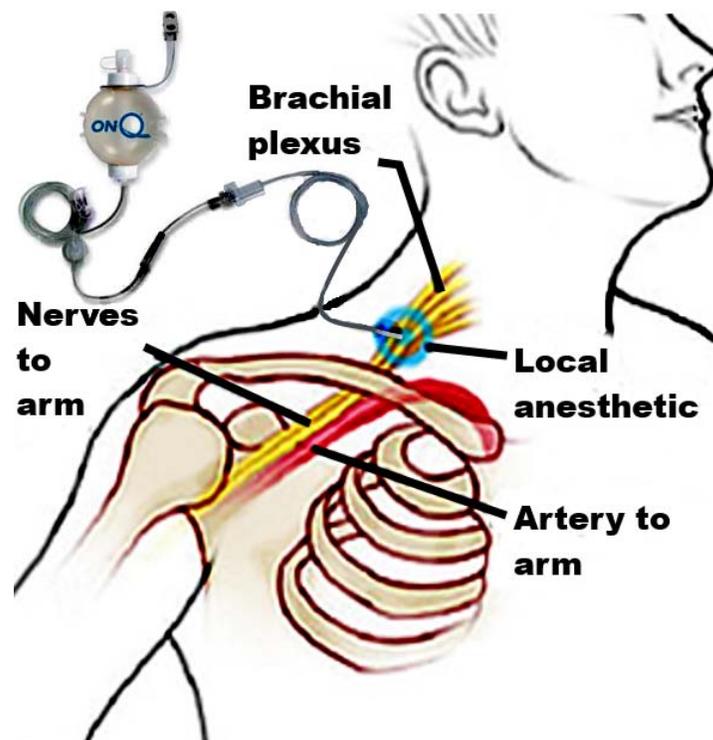


Figure 1: Diagram of nerve block placement

What is the advantage of regional anesthesia?

The major advantages of regional anesthesia are that it can provide superior pain relief to just pain medicine given intravenously (by IV) after surgery. The other major advantage of this approach is that it decreases the amount of oral or IV pain medicine you need after surgery. This also will keep down the degree of the complications seen frequently with IV or oral pain medicine including nausea, vomiting, constipation, itching and urinary retention.

This also means that the anesthesiologist does not have to use so much medicine to keep you asleep and also that they do not have to give you as much pain medicine during surgery. This also can decrease the complications mentioned above with just pain medicines.

The other big advantage of regional anesthesia is that you will need less pain medicine after surgery, especially the first few days after surgery when the pain has the potential to be the worst. If the pain can be well controlled the first day or so after surgery then it has been shown that the pain is less and better controlled usually for longer than just a couple days.

If I have a block will I still have pain medicine?

While a nerve block or regional anesthesia is designed to lesson your pain it may not eliminate it entirely. As a result, in cases where there is regional anesthesia, we provide pain medicine either intravenously (if you stay overnight) or by mouth (if you go home or stay in the hospital after surgery). The reason to have pain medicine is to make sure your pain is taken care of immediately after surgery but also for when you go home. The goal is to make the period after surgery as pain free as possible, but there almost always is some pain after surgery; the medicine is there only if you need it.

How do you do a regional anesthetic or block?

First the anesthesiologist will talk with you about anesthesia in general and also about our system for regional anesthesia and pain control after surgery. Our anesthesiologists are all specially trained in performing general and regional anesthesia, and they have been involved directly with setting up a system to make the pain less after surgery.

For surgery of the shoulder the best type of regional anesthesia is to numb up the nerves to the arm about an inch above the collarbone near where the nerves come out of the neck. The anesthesiologist will give you some medicine to help you relax and then will numb up the skin in that area. The numbing medicine is placed near two

muscles in that called the “scalene muscles”, so this kind of block is called an “interscalene block.”

Once the numbing medicine is injected around the nerves the arm will feel a tingling or “pins and needles” sensation (like your hand has fallen asleep) and there may be some weakness of the muscles of the arm. These feelings go away once the anesthetic medicine wears off, and these sensations last only as long as there is still numbing medication acting on the nerves

How does the block work after surgery?

There a couple of ways to make the block or regional anesthesia work after surgery is done. One way for the block to last longer is to use long acting anesthetic agents which last longer than lidocaine. These medicines when injected around the nerves can make the arm numb for anywhere from 8 to 24 hours, but they typically wear off by about 12 to 16 hours after they are injected near the nerves. If the numbing medicine is injected and no catheter placed then this is called a “one shot” block meaning that only one dose of medicine is given. The medicines used include lidocaine, marcaine and bupivacaine. Each one will last a different amount of time once they are injected near the nerves.

Another way to make the block or regional anesthesia last longer is to place a small catheter near the nerves so that numbing medicine can be injected near the nerves for hours or days after the surgery. This little catheter is about the width of a pencil lead or paper clip (only about a millimeter in size) and can be placed by the anesthesiologist. This catheter is made of rubber and has small holes in it near the end near the nerves so the numbing medicine can be injected through the catheter.

How does the anesthetic or numbing medicine get into the catheter?

The nerve blocks are typically done prior to you going back to the operating room. The nerve block can be given as a one-time dose of numbing medicine (a “single shot”) or continuously through a catheter. The catheter is about the size of a guitar string but it is very soft and flexible. The one time dose can last anywhere from 12 to 24 hours and the catheter lasts as long as it is left and the medication is given through it. Regardless of the technique you have you be given medicine through the IV to relax you and sedate you prior to the procedures. For patients who are staying in the hospital after surgery, the catheter is hooked up to a pump which will deliver the numbing medicine down the catheter (Figure 2). This pump can actually be controlled by the patient, so you have to push a little button which will make the pump push medicine down the catheter into your neck area where the catheter is located.



Figure 2: Patient controlled pump for pain catheter

If you are going home after surgery and have a catheter, then there is pump made of plastic which has a reservoir of numbing medicine which looks like a bulb or balloon filled with fluid (Figure 3). This bulb attaches to the catheter and is designed so that it will deliver the medicine to the catheter automatically without you having to push any buttons. The medicine is delivered to the catheter at a steady rate over a few days. When the bulb or reservoir of medicine is gone, then catheter can be pulled out of the neck with no difficult by someone at home. Because the catheter is not sewn in and because it is not under the skin very far, it comes out very easily once the bandage over it is removed.



Figure 3: Portable pain reservoir

What if the nerve block or catheter does not work?

Occasionally the nerve block does not work or the catheter does not successfully make the arm numb. Sometimes the nerve block does not take care of all of the pain either. In these instances we rely upon standard pain medicines to alleviate the pain. Depending upon whether you are allergic or sensitive to certain medicines, these are usually non-steroidal anti-inflammatory drugs (NSAIDs), acetaminophen (Tylenol) or narcotic medicine (morphine like). If you are staying in the hospital after surgery we typically have a pump which delivers narcotics to you intravenously upon demand meaning you have to push the button to get the medicine to go into the intravenous line in your arm. When patients go home after surgery, whether it is the same day or days later, we will give you the appropriate medicines to prevent pain at home.

What if I do not want a nerve block?

There are some people who cannot have a nerve block due to a variety of reasons. The first would be people allergic to local anesthetics or numbing medicine like lidocaine. The second would be people who have severe lung disease such as emphysema or chronic obstructive pulmonary disease. The anesthesiologist can speak with you about what is the best anesthesia for you.

If you do not have a nerve block, then we give you the necessary medicine to keep your pain to a minimum. If you go home the same day the medicine is oral pain medicine to take by mouth. If you stay in the hospital over one or more nights we give you medicine intravenously (by IV) with a pump that delivers the medicine and we also use oral pain medicine to keep your pain down to acceptable levels.

What if I need more information?

The anesthesiologist will go over the type of anesthesia for you the day of surgery. It is important to know that the type of anesthesia you receive is always up to the anesthesiologist taking care of you the day of your surgery. Their number one priority is to have you safely get through the surgery and the anesthetic plan is tailored to your medical history. If you have any medical conditions of concern then an appointment weeks prior to the surgery will be arranged. Also, if you have significant concerns then an appointment with the anesthesiologist a week or so prior to surgery can be arranged.

What kind of anesthesia do you typically use for different shoulder surgeries?

We generally will use a peripheral nerve block with a catheter placed for most upper extremity and shoulder surgeries. We also typically use a general anesthetic after the block is placed in order to protect your breathing and your airway during

surgery. The type of anesthesia is individualized for each patient according to your needs and the surgery that is being performed.

Reverse Total Shoulder:

Surgery: Nerve catheter in hospital with general anesthesia

After surgery: Nerve catheter, narcotic pain pump, oral pain medicines

At home after discharge: oral pain medicine

Rotator Cuff Surgery (outpatient):

Surgery: Nerve catheter in hospital with general anesthesia

At home after discharge: Nerve catheter with bulb and oral pain medicine

Rotator Cuff Surgery (overnight):

Surgery: Nerve catheter with general anesthesia

After surgery: Nerve catheter, narcotic pain pump, oral pain medicines

At home after discharge: oral pain medicine

-Shoulder Instability Surgery (outpatient)

Surgery: Nerve catheter in hospital with general anesthesia

At home after discharge: Nerve catheter with bulb and oral pain medicine

Shoulder Instability Surgery (inpatient)

Surgery: Nerve catheter with general anesthesia

After surgery: Nerve catheter, narcotic pain pump, oral pain medicines

At home after discharge: oral pain medicine

Distal Clavicle Excision or Biceps Tenodesis (outpatient):

Surgery: Nerve catheter in hospital with general anesthesia

At home after discharge: Nerve catheter with bulb and oral pain medicine

Frozen Shoulder Surgery (outpatient):

Surgery: Nerve catheter in hospital with general anesthesia

At home after discharge: Nerve catheter with bulb and oral pain medicine

Frozen Shoulder Surgery (inpatient):

Surgery: Nerve catheter with general anesthesia

After surgery: Nerve catheter, narcotic pain pump, oral pain medicines

At home after discharge: oral pain medicine