

## ***“AWAKE” ANESTHESIA FOR SHOULDER SURGERY***

The goal of the anesthesia is to keep you comfortable and to provide you with pain control during and after your operation.

When having shoulder surgery, you have 2 basic options when it comes to anesthesia:

- 1) You may be given a general anesthetic that will put you to sleep throughout the entire procedure by placing a breathing tube in your throat.
- 2) You may remain awake after receiving an injection that prevents you from feeling any pain.

We believe that, in almost all cases, the best choice for anesthesia for shoulder surgery is the use of a nerve block called an interscalene block (regional anesthesia). The nerve block numbs the entire shoulder and arm. Unfortunately, it has been reported that outpatient surgery in North America involves regional anesthesia only 2% - 5% of the time.

**Regional Anesthesia or Interscalene Block:** This is simply a pain-killing injection into the side of your neck using a long acting local anesthetic. It will numb your neck, shoulder, and arm, but will leave you awake during the operation. The length of time that the entire arm is numb depends upon the type of anesthetic that is used and whether or not epinephrine is added to the mixture. This type of a nerve block will generally provide several hours of "surgical" anesthesia, during which time your surgeon can operate on your arm, and up to 24 hours of pain relief in some situations.

### **Advantages of “Awake” Surgery—Fewer Side Effects:**

With a block, the patient does not have to worry about “waking up” after surgery. As a result, one does not experience alterations of mental status and the problems with thinking associated with general anesthesia. Patients therefore tend to recover faster and feel less drowsy after surgery.

In addition to the block, the patient may be given a sedative to help make him (or her) relaxed and to reduce anxiety. This will be different from general anesthesia where one is made totally unconscious and has no awareness or other sensations. With general anesthesia, your entire body is made to fall asleep. The idea with regional anesthesia is to keep you sleepy enough so that you are comfortable and can tolerate the procedure while still breathing on your own, but not so sleepy that you lose consciousness and require artificial breathing. Without the side effects of general anesthesia, your post-operative recovery is likely to be smoother and more tolerable. Although patients remain conscious throughout the surgery, they may still not "remember" much from their experience. Therefore, after the surgery, you may think that you had gone to "sleep" yet really only received conscious sedation.

An anesthesiologist (or nurse anesthetist) will be with you from the start of your care in the operating room to the time that you are taken to the recovery room. The anesthetist can give more or less sedative depending on how awake the patient chooses to be. Some patients are completely awake and others prefer to be quite sleepy. Many of the patients who remain wide awake enjoy the experience of being able to watch their arthroscopic procedures on the video monitor during surgery.

Generally speaking, regional anesthesia is less intrusive to the body. It tends to affect the heart and lungs less than the general anesthesia. As a result, the recovery is faster, there are fewer side effects and there is less likelihood of severe heart or lung problems. Also, this type of anesthesia can provide prolonged pain relief.

One of the main advantages of a regional anesthetic is that you do not have to go to sleep. Many patients find that the medications that are used to put them to sleep can make them nauseated and sick to their stomach. Patients who have an interscalene block for shoulder surgery require less medication. Using less medication during surgery helps prevent nausea after surgery. In addition, the block reduces the time that it takes for anesthetic medicines to wear off and reduces the risk that you could have a bad reaction to the medicine. Patients often have a sore throat after general anesthesia but the absence of a breathing tube with regional anesthesia also eliminates this side effect.

Other rare but serious risks of general anesthesia include:

- Irregular heartbeat (arrhythmia).
- Trauma to the teeth, lips or vocal cords
- Increases or decreases in blood pressure, which may be dangerous.
- A rapid increase in body temperature.
- Rare reactions to medications used in the anesthesia.
- Difficulty breathing.
- Heart attack or stroke.
- Death from complications of changes in heartbeat, blood pressure, body temperature, or breathing.

### **Advantages of “Awake” Surgery—Better Pain Relief:**

Surgery on the shoulder often causes severe pain and, therefore, requires high doses of pain medications after surgery. Several studies have shown a reduction in postoperative pain in patients receiving regional anesthesia compared to those who were given a general anesthetic. The pain relief from a regional anesthetic can be designed to last for up to 24 hours, and this allows the patient to get situated at home after outpatient surgery. The patient’s family can get pain medications filled in a relaxed fashion since the arm will remain numb for several hours after the arrival home.

In one study, 35% of the patients with a block did not require additional painkillers during the first 24 hour period after surgery, whereas 95% of those with general anesthesia requested painkillers. Only 32% of the patients who had a block required opioids (such as morphine) versus 86% with general anesthesia. The average duration of stay in the recovery room was reduced by nearly an hour in those patients who were given a block.

Regional techniques can block or reduce pain anywhere from several hours to several days. Preemptive pain management (numbing the shoulder before the operation starts) may reduce subsequent pain in the days to weeks following surgery. Better pain control has the potential to allow for earlier hospital discharge and may improve the patient's ability to tolerate physical therapy. In many cases, a patient's entire post-operative course can be affected dramatically if their pain is not well-controlled immediately after surgery.

## **Summary**

Regional anesthesia is highly effective for many surgical procedures and post-operative pain management, has fewer adverse effects and complications than general anesthetic, promotes economy of time, and improves patients' quality of life - but many patients and practitioners alike are not aware of this.

Dr. David Brown, who is a consultant anesthesiologist at the Mayo Clinic, noted that regional anesthesia is superior to general anesthesia with regards to several criteria: stress response, coagulation function, severity of acute pain, plasticity of nervous system, blood loss, nausea and vomiting, and complications. "Pre-emptive" anesthesia before incision speeds recovery of function, he said. Patient positioning and incision times are shorter. Recovery is faster, and patients experience fewer side effects and sequelae, especially after major surgery. In short, Dr. Brown said, regional anesthesia should be promoted "whenever the surgical procedure can be accomplished without significant adverse patient outcome." He also noted that regional anesthesia is highly effective in post-operative pain management. Despite all these advantages, use of regional anesthesia did not increase significantly over the decade 1980-1990.

At Nashville Knee & Shoulder Center, we perform the vast majority of our shoulder procedures using "awake" anesthesia. We are one of a select group of shoulder specialists in North America who offer this option, and we have seen dramatic benefits for our patients