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TREATMENT

Anesthesia for Hip and Knee Surgery

Before your total joint replacement surgery, your anesthesiologist — a doctor who is specially trained in the use of anesthesia — will discuss the process with you. The selection of anesthesia is a major decision that could have a major impact on your recovery. It deserves careful consideration and discussion with your surgeon and your anesthesiologist.

You must consider several factors when selecting anesthesia, including:

- **Your past experiences and preferences.** Have you ever had anesthesia before? Did you have a reaction to the anesthesia? How do other members of your family react to anesthesia?
- **Your current health and physical condition.** Do you smoke? Are you overweight? Are you being treated for any condition other than your total joint replacement?
- **Your reactions to medications.** Do you have any allergies? Have you ever had bad side effects from a drug? What medications, nutritional supplements, vitamins, or herbal remedies are you currently taking? Are you taking any blood thinners (e.g., Coumadin, Plavix, Eliquis, or Xarelto)?
- **The risks involved.** Risks vary, depending on your health and choice of anesthesia, but may include breathing difficulties, allergic reactions and nerve injury. Your surgeon and anesthesiologist will discuss specific risks with you.
- **Your healthcare team.** The skills and preferences of your surgical and anesthesia team play an important role in the selection of anesthesia.

Types of Anesthesia

There are three broad categories of anesthesia: local, regional, and general.

Local Anesthesia

Local anesthesia numbs only the specific area being treated. The area is numbed with an injection, spray or ointment that lasts only a short period of time. Patients remain conscious (awake) during this type of anesthesia. This technique is used only for minor procedures. For major surgery, such as total hip replacement or total knee replacement, local anesthesia may be used to complement (go hand in hand with) the main type of anesthesia that is used.

Regional Anesthesia

Regional anesthesia involves blocking the nerves to a specific area of the body, without affecting your brain or breathing. Because you remain conscious (awake), you will be given sedatives to relax and put you in a light sleep.

The three types of regional anesthesia used most often in joint replacement surgery are spinal blocks, epidural blocks, and peripheral nerve blocks.

- **Spinal block.** In a spinal block, a short-acting anesthetic drug is injected into the fluid around the spinal cord in the lower part of your back. This quickly produces a numbing effect that wears off after several (1.5 to 6) hours.
- **Epidural block.** An epidural block uses a catheter (as thin tube) inserted in your lower back to deliver continuous (a steady flow of) local anesthetics for as long as the numbing effect is needed. The epidural block and the spinal block are administered in a very similar location; however, the epidural catheter is placed in a slightly different area around the spine as compared to a spinal block.
- **Peripheral nerve block.** A peripheral nerve block places local anesthetic directly around the major nerves in your thigh, such as the femoral nerve or the sciatic nerve. These blocks numb only the leg that is injected and do not affect the other leg. One option for a peripheral block is to perform a one-time injection around the nerves to numb the leg just long enough for the surgery. Another option for this type of block is to keep a catheter in place, which can deliver continuous (a steady flow of) local anesthesia around the nerves for up to several days after surgery.

Advantages to regional anesthesia may include:

- Less blood loss
- Less nausea
- Less drowsiness
- Improved pain control after surgery

- Reduced risk of serious medical complications, such as heart attack or stroke that — although rare — may occur with general anesthesia

The most important thing about regional anesthesia is that you won't feel any pain but will still be able to breathe on your own — you won't need a machine to breathe for you during the operation.

Side effects from regional anesthesia may include:

- Headaches
- Trouble urinating
- Allergic reactions
- Nerve injury (this is rare)

General Anesthesia

General anesthesia is often used for major surgery, such as a total joint replacement. General anesthesia may be chosen:

- Based on your, the surgeon's, or the anesthesiologist's preference
- If you are unable to receive regional or local anesthesia

Unlike regional and local anesthesia, general anesthesia affects your entire body. It acts on the brain and nervous system and causes you to be temporarily unconscious.

With general anesthesia, the anesthesiologist gives the medication through injection or inhalation (you breathe it in). The anesthesiologist will also place a breathing tube down your throat and give you oxygen to help your breathing.

As with any anesthesia, there are risks — which may be increased if you already have heart disease, chronic lung conditions like COPD, or other serious medical problems — and potential side effects:

- General anesthesia affects both your heart and breathing rates, and there is a small risk of a serious medical complication, such as heart attack or stroke.
- The tube inserted down your throat may give you a sore throat and hoarse voice for a few days.
- Headache, nausea, and drowsiness are also common.

Pain Relief After Surgery

The goals of post-operative pain management are to minimize discomfort and allow you to move with less pain so you can participate in physical therapy after surgery.

The first few days after total hip and knee replacement surgery are usually painful. Your doctor will use a combination of oral medications or intravenous (given through an IV tube) medications to help control your pain and keep you comfortable.

Oral Pain Medications

You may be given a combination of oral pain medications:

- Non-narcotic pain relievers such as acetaminophen (e.g., Tylenol)
- Nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen or naproxen
- Muscle relaxants such as methocarbamol, cyclobenzaprine, or carisoprodol
- Opioid-based medications such as hydrocodone, oxycodone, or tramadol. You should use opioids only as directed by your doctor and stop taking them as soon as your pain begins to improve. Although opioids can help relieve pain after surgery, they are narcotics and can be addictive. Talk to your doctor if your pain has not begun to improve within a few days after your surgery.

Intravenous Pain Medications

Intravenous (IV) pain medications such as morphine and hydromorphone (Dilaudid) are generally used to supplement (as an add-on to) oral pain medication during severe episodes of pain. The advantage of IV pain medications is that they take effect quickly. It is important to use IV pain medications sparingly to avoid serious side effects.

If an epidural or peripheral nerve block was used for your surgery, the epidural or peripheral catheter can be left in place and anesthesia can be continued in the post-operative period to help control pain. You may also have control over the amount of pain medication you receive in these catheters, within preset limits. You will be closely monitored to avoid complications, such as too much sedation (the medication makes you too drowsy) or falls.

The proper use of pain relievers before, during and after your surgery is an extremely important aspect of your treatment. Proper use of pain medication can encourage healing and make your total joint replacement a more satisfying experience. Take time to discuss the options with your doctor, and be sure to ask questions about things you do not understand.

Learn more: Managing Pain With Medications After Orthopaedic Surgery

To assist doctors in the use of anesthesia and analgesia in total joint replacement, the American Academy of Orthopaedic Surgeons has conducted research to provide some useful guidelines. These are recommendations only and may not apply to every case. For more information: Anesthesia and Analgesia in Total Joint Arthroplasty - Clinical Practice Guideline | American Academy of Orthopaedic Surgery (aaos.org)

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