The Truth About Peri-Operative Anesthesia for Modern Joint Replacement Surgery

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Although surgery itself can be a significant source of stress for patients about to undergo a joint replacement, many patients seem to have more apprehension about the anesthesia than any other aspect of the procedure. The fear of going to “sleep”, trusting they will ultimately “wake up” and not having control of the situation during the procedure weighs heavy on some patients.

Most patients still believe, however, that anesthesia for routine total joint replacement involves general anesthesia. This is a method of anesthesia, still utilized in many other surgeries, that involves receiving one or more of several potent sedatives, a complete body paralytic (paralyzes the entire body including the diaphragm which allows you to breathe on your own) and placement of an endotracheal tube through your mouth and throat into your lungs so a machine can breathe for you during the procedure. Fortunately for the majority of routine joint replacement surgeries, general anesthesia is no longer required, nor is it recommended.

One of the greatest advances in joint replacement surgery in the last few decades has been the utilization of regional anesthesia rather than general anesthesia. Regional anesthesia involves the isolated “numbing” of specific nerves and nerve distributions that receive pain sensations from the lower extremities (legs), allowing the surgery to be performed without “going to sleep”. No intubation is required.

For hip replacements my standard anesthesia protocol includes a small amount of pre-operative “relaxation” on the way to the operating room and a spinal performed by our team of anesthesiologists once in the operating room. A spinal is a single injection of a local anesthetic into the spine that very quickly and completely numbs, and temporarily paralyzes, the lower extremities from the waist down. This block typically wears off after about 3hrs or so. This allows me time to prepare and position you for the procedure, perform the surgery and get you to the post-op care area pain- free. Motor and sensory function to your legs will return while in the post-anesthesia care unit, and when it does, we move you up to the floor to start you walking with all your weight on your new hip.

For partial and total knee replacements, in addition to the protocol mentioned above, patients also receive an injection into the upper thigh called an adductor canal block that additionally “numbs” only the sensory (not motor) pain fibers of the thigh and knee. A fishing wire- thin catheter is also placed at the same time into this adductor canal by the block team. This is

currently done in the pre-operative holding area prior to heading into the operating room. Placement of the catheter allows for 24-48hrs of continuous dosing of pain controlling anesthetic to the knee and tissues surrounding the knee. During the procedure two additional long acting local anesthetics are injected into the areas around the bone, tissues and skin as an additional way for me to help control the early post-operative pain. Like the anesthesia utilized in the hip, the spinal wears off after 3hrs or so, and at that point we begin to get you mobile on the orthopaedic floor.

Although, there are still situations in which general anesthesia is recommended or required in joint replacement surgery, such as an extended lumbar spine fusion where there is no access to the nerves in the spine, this use of regional anesthetic has all but made the use of general anesthesia obsolete in joint replacement surgery. Patients are given the option of receiving sedation during the case and literally taking a nap or, if they wish, being completely awake and aware of everything that's taking place in the operating room. Currently most patients are choosing the "nap".

Theoretic benefits of the regional blocks also include less post-operative nausea and grogginess, decreased blood loss, decreased risks of blood clots, decreased use of narcotics in the early post-op period and quicker recovery due to decreased pain. It is my opinion that the best thing to happen to joint replacement surgery in the last 2 decades has less to do with custom implants or instruments, navigation or surgical technique, but more to do with these continued advances in peri-operative anesthesia and immediate post-operative pain management.