Staying awake during spine surgery is cutting recovery time in half

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Praveen Mummaneni (right), MD, performs an awake spine surgery with (from left) Leslie Robinson, MD; Catherine Miller, MD; and Jeremy Lieberman, MD. Credit: Melissa Lau

The spinal surgery David B. underwent in November wasn't his first – but it was the first time he was awake for a procedure.

David is one of about 10 patients so far who have taken advantage of UC

San Francisco's offering of awake spine surgery, which neurosurgeon Praveen Mummaneni, MD, began doing in spring of 2018.

"At first I thought 'Do I really want to be awake for this?'" said David. But in reality, it was more like being pleasantly oblivious. "I was not aware of anything that was going on. It was sleepy time."

After the procedure – a transforaminal lumbar interbody fusion, or TLIF, which generally takes only two to three hours – David was up and walking again, without pain, before the end of the day.

"The procedure is relatively new," said Mummaneni, who is also co-director of the UCSF Spine Center. "It's changing my practice in that I can get my patients through their surgery much more quickly."

Local Anesthetic Lends Advantages Over Going to Sleep

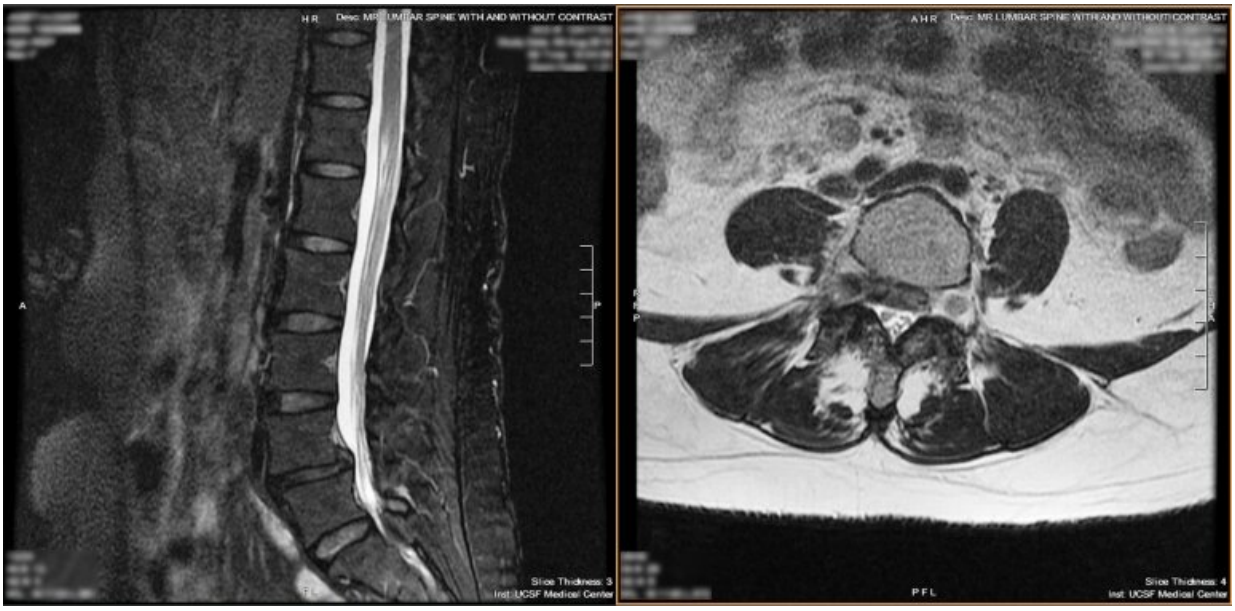
One of the keys to this new approach to spine surgery is a long-acting, local anesthetic called liposomal bupivacaine, which was recently approved by the U.S. Food and Drug Administration. The anesthetic is injected into muscle in the low back before the incision is made, and provides pain relief for 72 hours.

"This means we're not giving post-operative IV narcotics anymore," said Mummaneni. "And it's allowed us to cut the hospital stay by two-thirds."

A traditional spinal fusion surgery with general anesthesia takes about four hours and requires a hospital stay of three to four days as well as IV painkillers. The awake spine surgery takes half the time and typically has patients out of the hospital within 24 hours.

Patients might continue oral pain medication for a week or two after the long-acting anesthetic wears off, but overall the pain management is much less intensive.

The benefits of awake spine surgery go beyond quick recovery times and shorter hospital stays. Patients circumvent the disorientation and "out-of-it" state that anesthesia and post-operative narcotics induce, and return to their lives in much shorter order. And the lack of general anesthesia means that patients don't need to be on a ventilator or breathing tube during surgery, reducing the risk of side effects such as post-operative nausea and delirium.



A preoperative MRI for an awake spine surgery patient shows an L4-5 disc herniation and severe spinal stenosis. Credit: University of California, San Francisco

Low Back Pain Takes Physical, Economic Toll

There's no shortage of people in the U.S. in need of back surgery. Spinal disorders debilitate more Americans than any other medical condition. Nearly four in five Americans struggle with low back pain at some point in life. About one-quarter of those, or 20 percent of Americans, experience chronic low back pain with persistent symptoms, according to the National Institutes of Health.

The incidence of low back pain has been steadily increasing since the 1990s, is now the leading cause of missed workdays and the most common cause of job-related disability, according to the National Institutes of Health.

Because back pain interferes with an individual's ability to exercise and be active, it often saps a person of their overall wellness. In fact, back pain now ranks third as a cause of poor health among Americans, following heart disease and chronic obstructive pulmonary disease (COPD).

In other words, getting people with spinal conditions back to work faster and with fewer complications has economic and social benefits as well as health advantages.

Making Surgery Accessible to More People

By allowing patients to avoid general anesthesia, Mummaneni's new approach makes back surgery accessible to a broader range of people. That group includes most patients who would benefit from traditional spinal fusion or decompression surgery, as well as many who have difficulty tolerating general anesthesia, such as elderly patients.

In addition, the awake surgery appeals to those who are deterred from the traditional operation by the recovery time of a week or more.

To determine whether a patient is a good candidate for awake surgery, Mummaneni reviews the MRI and clinic notes. Awake surgery is currently available for one- or two-level lumbar procedures for decompression and/or fusion to treat stenosis and spondylolisthesis. UCSF is one of the first major medical centers in the U.S. to offer awake spine surgery through an Enhanced Recovery After Surgery (ERAS) protocol.

David had seen his share of back problems when he contacted Mummaneni last summer. "I've had so many surgeries," he said. "I'm hardly a rookie with this."

Despite previous spinal procedures done at other hospitals, David experienced persistent back pain, and he'd been referred to Mummaneni by another surgeon. When the UCSF doctor offered him the opportunity for spine surgery without general anesthesia, David opted for it.

"I have zero pain now," he said. "It was less time in the hospital, less impact on your body, recovery is accelerated, and there's less need to use pain meds."

Benefits of Awake Spine Surgery

- Procedures take one to three hours, compared with four to six hours for open spine surgeries
- Patients walk on the day of surgery and usually go home within 24 hours, instead of three to four days for standard spine surgery under general anesthesia
- Faster recovery rates mean patients can rapidly return to daily recreational and work activities
- Postoperative IV narcotics are not needed
- Since no general anesthesia is necessary, patients do not need to be on a ventilator, resulting in a lower risk of side effects and

faster recovery time

Provided by University of California, San Francisco