

Pennsylvania hospital neurosurgeon performs first endoscopic minimally invasive spinal surgery in PA

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Neil R. Malhotra, MD, an assistant professor of Neurosurgery and Orthopaedic Surgery and the vice chairman of operations in the department of Neurosurgery. Credit: Penn Medicine

Spine disc related low back and leg pain is a major challenge and is the second most common reason that patients visit the doctor in the United States—outnumbered only by respiratory infections—and is the leading cause of disability worldwide. Compression of the spinal nerves is one of the most common diagnoses and is frequently reversible with surgery.

Kevin Clark, 51, is one of 200,000 individuals in America who suffer with debilitating back pain, leg cramps, and difficulty standing, bending or walking due to [spinal nerve](#) compression and stenosis each year. He sought help from Penn Medicine neurosurgeons, and today, Clark is celebrating three months of being pain-free after suffering debilitating back pain, [leg pain](#) and thigh numbness for over a year. He became the first patient in Pennsylvania to undergo a life-changing, minimally invasive spine [surgery](#) through a single incision in his side that had him up and walking just hours after surgery. Neil R. Malhotra, MD, an assistant professor of Neurosurgery and Orthopaedic Surgery and the vice chairman of operations in the department of Neurosurgery, performed Clark's [procedure](#)—called an endoscopic percutaneous lumbar spinal nerve decompression and discectomy—at the Hospital of the University of Pennsylvania in May.

Clark, a bridge inspector from Quakertown, Pa., had been experiencing back pain and numbness in his right upper leg and thigh for nearly a year. Clark previously had undergone open spinal laminectomy surgery—a procedure during which a small portion of the bone over the

nerve root and/or disc material is removed to give the nerve root more space—three years earlier for nerve compression causing symptoms in the back and below the knees. He had an excellent surgical result, with 100 percent improvement of his symptoms, but he felt that the surgery recovery was tough, with incision pain lasting nearly three months. But since the surgery helped, he was prepared to do it again to get relief from his new problem above the knee. When he heard that there was another option for his problem, Clark agreed to become the first patient in the state to receive the new [minimally invasive treatment](#). Following the procedure, Clark said, "The speed of recovery alone has been amazing. I was able to walk around without pain the same day." He noted that he had rapid results for his different problems with both surgeries, but with this surgery there was almost no incision pain—relief without suffering the more typical side effects of surgery.

According to Malhotra, Clark's symptoms of numbness, stabbing pain and cramping in the legs—which some [patients](#) have described as being as intense as having a toothache in the leg—were caused by a spinal disc herniation. Unlike the more invasive lumbar laminectomy, the endoscopic procedure involves only one small incision in the patient's side. The procedure allows the surgeon to address the cause of the ailment while minimizing symptoms from surgery-incisional pain and muscle dissection pain.

But Malhotra also notes that the procedure is not for everybody. "This is the best option for patients with symptoms in one leg that is caused by a disc herniation or a foraminal stenosis," he advised.

Nationally, doctors perform 500,000 spinal decompression operations each year. Malhotra says at least a quarter of those who would normally receive more invasive procedures for spinal stenosis might qualify for the minimally invasive approach. While the endoscopic decompression procedure has a 70 to 90 percent success rate versus a 90 to 100 percent

success rate with more invasive procedures, the minimally invasive approach of the endoscopic procedure provides a more rapid recovery and enables a patient to pursue a more invasive option in the future if necessary.

"It's exciting to be able to offer the least invasive surgery for the greatest immediate benefit to the patient," Malhotra said. "The reason why I was excited to adopt and help develop the procedure is because I can provide the same benefits to patients as a more invasive procedure does with the least incision and risk."

In the future, Malhotra hopes to help evolve the tool to be able to use it for removing spinal column and spinal cord tumors. This would allow surgeons to remove tumors with less incision and shorter recovery time.

"When it comes to cancer patients, they may not have a good prognosis, so you always want to find ways to get them out of the hospital and on to living their lives sooner," Malhotra said. He's hopeful that the procedure will be adapted for tumor removal within the next two to three years. Malhotra added, "I am enthusiastic to develop this remarkable tool to serve my cancer patients in the coming years and I am ecstatic that it is ready today for patients with spinal nerve [pain](#)."

Provided by Perelman School of Medicine at the University of Pennsylvania

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