



Discover the future of spine surgery

Dr. Don Y. Park, founding director of the UCI Health Comprehensive Spine Center's Advanced Endoscopic and Outpatient Spine Program, is setting a high bar for the future of spine surgery in the country.

His pioneering endoscopic surgical techniques and use of augmented reality (AR) is ushering in a new era of ultra-minimally invasive spine care.

Park, who trained extensively in South Korea, where advanced endoscopic spine surgery techniques were perfected, is one of about 50 U.S. surgeons with this expertise, and the only one in Orange County offering this level of surgical care. He has performed more than 600 such procedures to date.

Where most minimally invasive spine procedures involve cuts of one to two inches, Park starts with two ultra tiny incisions of less than a quarter inch. Through one, he inserts a miniature high-definition camera attached to an endoscope. Through the other, he guides specialized instruments to operate using direct endoscopic visualization.

This level of precision allows him to avoid damaging muscle, nerves and soft tissue while effectively treating spinal stenosis, disc herniation and spondylolisthesis.

World's first

In March, Park spearheaded the world's first AR-assisted, biportal endoscopic lumbar fusion.

With the AR headset, he viewed the surgical field magnified as much as 200 times alongside the patient's MRI images and medical details. This eliminated the need to shift attention between multiple monitors, enhancing precision and streamlining the operation.

"We expect AR integration to become more common in spine surgery, especially in endoscopic procedures to decompress delicate spinal nerves, where detailed visualization and ergonomics are crucial," he says.

Lives transformed

The benefits of ultra-minimally invasive spine surgery extend well beyond the operating room. "Most patients are able go home the same day," the surgeon says. "They also experience fewer complications, faster recovery times and less pain and discomfort than with traditional open surgery."

Park's first AR-guided biportal lumbar fusion patient, a 56-year-old man with severe lumbar stenosis and unstable spondylolisthesis, went home the same day, free of chronic back pain and tingling in his legs. Three months later, he has regained his former activity level.

Another patient, an avid runner in her late 40s with crippling nerve pain from lumbar stenosis and spondylolisthesis, feared open fusion surgery would end her active lifestyle. Park performed endoscopic decompression without fusion and she also walked out the same day, free of pain and able to run again in six weeks.

"I've done many other types of spine surgery, and you can have great success," he says. "But I have seen these techniques have the most impact in patient outcomes and better quality of life."

Named one of the leading U.S. spine programs by *Becker's Hospital Review*, the UCI Health Comprehensive Spine Center is a preeminent academic program whose multidisciplinary team specializes in personalized care for all spinal disorders, including trauma, tumors, scoliosis and spinal cord injury.

Renowned for its high-quality minimally invasive, robot-assisted and endoscopic procedures, the center continues to drive innovation through biomechanics research and each year trains future spine surgeons in the latest techniques.

Learn more at ucihealth.org/spine-care

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