



AUG. 1, 2004

Citation: *Spine*, August 1, 2004, “Endoscopic Lateral Transpsoas Approach to the Lumbar Spine.”

HIGHLIGHTS:

Surgeons who perform minimally invasive spine fusion surgery find access to the upper portion of the lumbar spine difficult because major blood vessels, nerves and important muscles are situated in the way of the usual approaches. In the August issue of the journal *Spine*, surgeons describe a new, more direct approach that simplifies the procedure and reduces the risk of potentially serious complications.

NEW MINIMALLY INVASIVE APPROACH TO UPPER LUMBAR FUSION SURGERY REDUCES COMPLICATION RISK

LOS ANGELES (Aug. 1, 2004) – Surgeons at the Cedars-Sinai Institute for Spinal Disorders describe in the August 1 issue of the journal *Spine* a minimally invasive approach that enables them to perform fusion surgery on the difficult-to-access upper lumbar region of the spine with a reduced risk of serious complications.

“Compared to previous options, this new approach is safer with respect to major blood vessels and abdominal organs,” said John J. Regan, M.D., co-director of the Institute. “The majority of patients experienced immediate improvement in their preoperative pain, and there were no vascular injuries or major complications.”

Minimally invasive procedures that employ thin instruments and laparoscopes with high-powered camera lenses typically result in shorter recoveries, less pain and lower risk of complications than open surgeries that require long incisions in the large muscles of the back. The preferred approach is from the front or side, sparing the back muscles entirely and positioning instruments at the forward edge of the spine where the placement of bone grafts and supportive devices help maintain the spine’s natural shape.

The upper lumbar region – L-1 to L-4 – is particularly challenging, however. The most commonly used approach enters through the abdomen and extends through the abdominal cavity (peritoneum). In addition to the risk of small bowel obstruction and the formation of scar tissue in the peritoneum, major blood vessels and a network of sympathetic nerves must be separated or moved out of the way. Injury to these structures can cause complications ranging from blood loss to nerve damage. In men, this nerve damage can result in a condition called retrograde ejaculation in which semen escapes into the bladder instead of passing through the urethra.

(more)

Attempting to avoid these and other potential problems, some surgeons have accessed the lumbar spine through the patient's side above the pelvis. Using this lateral approach, they advance the instruments behind the peritoneum rather than through it and they avoid major vessels and nerves, but they must retract the psoas muscle with considerable force. Tearing or bruising of this major muscle, which extends from the low back to the thigh, can cause significant pain, swelling and weakness after surgery.

Dr. Regan and his colleagues at Cedars-Sinai document for the first time in the *Spine* article a more direct lateral approach that actually goes through the psoas muscle, avoiding many of the risks of other approaches to the upper part of the lumbar spine.

“Surgical dissection is carried out in a longitudinal fashion in line with the muscle fibers and through the anterior (forward) two-thirds of the psoas muscle. This results in minimal muscular retraction and bleeding with excellent visualization of the intervertebral disc space,” said Dr. Regan.

The procedure offers several practical advantages, as well. With the patient on his or her side, gravity draws the abdominal contents out of the way, for example, and the angle at which the spine is approached minimizes the risk of accidental injury to the spinal column during the fusion procedure.

The study is based on a review of 21 endoscopic lateral transpsoas procedures performed by Dr. Regan, senior author of the article. Six operations were completed at the Texas Back Institute in Dallas, where Dr. Regan was a principal before he joined Cedars-Sinai. All patients had previously undergone at least six months of non-surgical therapy and pain management.

Subjects ranged in age from 35 to 73 years, with a mean age of 50 years. Fourteen of those referred for surgery suffered from pain resulting from disc disease, three had disc instability at levels adjacent to discs that had previously been fused, and four suffered from progressive degenerative scoliosis.

Seventeen of the 21 patients underwent surgery for a single-level fusion (bone grafting of one disc space to fuse two vertebrae). One patient had a two-level fusion, and three patients underwent surgery on three levels. Because one operation had to be changed to a more open procedure because of scarring resulting from previous surgery, 20 patients are included in the analysis of results.

Six patients experienced post-operative numbness in the groin or thigh, and five of these patients also complained of pain in the area. For most of these patients, the symptoms resolved over a four-week period. Two patients who had persistent symptoms had undergone three-level fusion for scoliosis, and their symptoms continued to subside over time.

“Anatomic correction was achieved in all patients who underwent the lateral endoscopic approach, which provides direct and relatively easy access to the upper lumbar spine,” Dr. Regan said.

Cedars-Sinai is one of the largest nonprofit academic medical centers in the Western United States. For the fifth straight two-year period, it has been named Southern California's gold standard in health care in an independent survey. Cedars-Sinai is internationally renowned for its diagnostic and treatment capabilities and its broad spectrum of programs and services, as well as breakthroughs in biomedical research and superlative medical education. It ranks among the top 10 non-university hospitals in the nation for its research activities.

###

If you have received this news release in error and do not wish to receive future advisories, or if they should be directed to someone else in your organization, please call 1-800-396-1002, so we can update our records. Alternatively, you may fax your updated information or your request for removal from our list to 808-263-3364 or e-mail it to sandy@vancommunications.com.