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NUVASIVE[®] PIONEERS MINIMALLY INVASIVE SPINE SURGERY

More than 1 million people have spine surgery annually in the United States. In 2002, 276,984 patients underwent spinal fusion in the U.S. with an average length of hospital stay of 4 days. Another 279,976 people underwent laminectomy/excision of intervertebral disc, with an average hospital stay of 2.7 days (*1*). The “national bill” in 2002 for these procedures was \$15,799,214,016 (*1*).

Exciting New Technology Benefits Patients and Surgeons, and Cuts Costs

NuVasive, (San Diego, CA), founded in 1997, designs and produces nerve avoidance and access tools for minimally disruptive spine surgery. Their minimally disruptive platform, known as **Maximum Access Surgery (MAS[™])**, consists of a suite of instruments, implants, and technology that includes the **MaXcess[™]** System for minimally disruptive spine surgery access, the **NeuroVision[®] JJB System** for nerve avoidance, and proprietary implants. This system of minimally disruptive spine surgery results in shorter hospital stays, lower hospital and patient costs, and less recovery time. Patients are often back to work within a few days, rather than the typical 4- to 6-week recovery necessary after traditional “open” spine surgery.

MaXcess Components and NeuroVision JJB System—Minimally Invasive, Novel Surgical Approach

Using the MaXcess system, surgeons can gain novel access to the spine with better direct visualization, and stabilize the spine using traditional techniques. The MaXcess system includes special instruments and implants for decompression, transforaminal lumbar interbody fusion (TLIF), and the new and innovative **Extreme Lateral Interbody Fusion (XLIF[®])** procedure. The XLIF system allows surgeons to access the spine laterally. Pioneered by Luiz M. Pimenta, MD, of Sao Paulo, Brazil, the innovative new “lateral entry” surgical technique utilizes NuVasive’s NeuroVision system, which helps to avoid the patient’s nerve tissue. Sensors on the dilators of the XLIF system alert the surgeon when the surgical probe is approaching any of the nerves running through the psoas muscle, allowing the surgeon to avoid sensitive neural tissue. The XLIF procedure is effective for a number of traditional open procedures, including spinal fusion and disc removal/replacement.

Early Results Demonstrate NuVasive's Benefits

William Taylor, MD, Assistant Clinical Professor, Department of Neurosurgery, at the University of California, San Diego, Medical Center, has used the NuVasive system for more than 2 years. Using the TLIF system, Dr. Taylor has performed laminectomy and interbody fusion on 48 patients. In this series of patients, operative time averaged 90 to 120 minutes for each level, blood loss averaged 125 cc, there were no blood transfusions, no infections, and the length of hospital stay averaged 2.5 days.

“Preoperatively, the patients’ Oswestry disability scores averaged 51 and after recovery, the scores averaged 15. Similarly, their average pain scores for leg and back pain improved from 6 to 2,” Dr. Taylor said. Dr. Taylor has used the XLIF system, an alternative to anterior interbody fusion, in 10 patients, 5 of whom had lumbar scoliosis, also with success. “This system avoids the bowel, bladder,

Surgeon Benefits:

- maximum access to the spine through a minimally disruptive technique
- ability to use conventional instrumentation
- fewer intraoperative complications
- ability to use conventional surgical techniques means decreased learning curve

Patient Benefits:

- less cutting and scarring of skin, muscle, ligament, and nerve tissue
- reduced blood loss
- reduced hospital stay
- RAPID return to normal activity

and vessels, thus minimizing the possibility of injury to those structures. With both of these procedures, patients are out of the hospital in a few days, are up and around and back to their normal activities within approximately 2 weeks,” Dr. Taylor added.

NuVasive is dedicated to the education and training of surgeons on new and innovative surgical techniques. At NuVasive, there is a state-of-the-art training center and operating theater where surgeons are trained and perform research. The operating theater simulates the surgical experience and provides the surgeon with exceptional knowledge and skill.

NuVasive is a medical device company focused on the design, development, and commercialization of products for the minimally disruptive surgical treatment of spine disorders. Founded in July 1997, NuVasive’s products provide a comprehensive solution for safe, reproducible, minimally disruptive surgical treatment of spine disorders.

For more information concerning NuVasive’s products, call NuVasive at 1-858-271-7070, or visit the NuVasive Web site at www.nuvasive.com.

Reference:

1. Healthcare Cost and Utilization Project. Agency for Healthcare Research and Quality, Rockville, MD. Available at: <http://www.ahrq.gov/HCU/Pnet>. Accessed August 20, 2004.