

Laparoscopic Advances Thorascopic Spinal Surgery

By Glenn R. Buttermann, M.D., Midwest Spine Institute

ENDOSCOPIC SURGICAL TECHNIQUES have been applied to the spine with varying degrees of success. In the early 1990s, laparoscopic techniques were used for spinal fusion of the lumbosacral disc. Using retroperitoneal balloons for exposure, endoscopic techniques were also used in the lumbar spine to access the lumbar discs above L5-S1. Discectomies and anterior interbody fusions are performed through working portals. There was a steep learning curve. The overall success rate was less than that for the conventional mini-open procedure,

the complication rates were higher and this technique fell out of favor.

Although interest waned for posterior lumbar endoscopic decompression/discectomies, there has been continued interest in endoscopic treatment of the thoracic spine. Thorascopic techniques have evolved, and although there is also a learning curve (as in any other endoscopic technique), the thorascopic techniques seem to have earned their keep. Unlike most endoscopic procedures, which treat “soft tissues,” spine surgery is unique in that “hard tissues” (bone and tough, degenerated

annulus) are treated. Instrumentation of the spine or removal of the disc uses a greater degree of force than that required for soft tissue procedures encountered in other surgical fields. Although visualization is superb with thorascopic techniques, dexterity is decreased because of long lever arms working outside the chest. Miscalculations of any forceful maneuvers may be hazardous.

Current thorascopic techniques are typically spinal fusion for degenerative or deformity conditions in which the disc is excised, and then bone graft is



Midwest Spine Institute

Locations throughout
the Twin Cities and
Western Wisconsin

Ask Us About Artificial Disc Replacement

Areas of expertise

- Disc Degeneration
- Disc Herniation
- Fractures
- Kyphosis (hump)
- Sciatica
- Scoliosis
- Spinal Arthritis
- Spinal Cord Injury

- Spondylolisthesis (shifted vertebrae)
- Stenosis
- Tumors/Infections
- Artificial Disc Replacement
- Minimally Invasive Surgery
 - Discectomy
 - Fusion

Pain Treatment & Diagnostics

- Injections
- Radiofrequency Neurotomy/Ablation
- Spinal Cord Stimulators
- Vertebroplasty

Thomas Rieser, M.D.
Orthopaedic Spine Surgeon

Glenn Buttermann, M.D.
Orthopaedic Spine Surgeon

Stefano Sinicropi, M.D.
Orthopaedic Spine Surgeon

Louis Saeger, M.D.
Interventional Pain Management

Adam Locketz, M.D.
Interventional Pain Management

Eric Salman, P.A.-C
Physician Assistant

Steven Lawson, P.A.-C
Physician Assistant

Jacob Guth, P.A.-C
Physician Assistant

Phillip Stewart, P.A.-C
Physician Assistant

800.353.7720 • 651.430.3800 • Fax 651.430.3827 • midwestspineinstitute.com

Physicians specializing in restoring lives affected by spinal injury and disorder

Continued from Page 14

inserted along with bone graft extenders/substitutes. Instrumentation, such as for scoliosis or multilevel fusions, can be performed, but they require additional working portals. An advantage, even with use of multiple portals, is that recovery is still substantially less than doing a conventional thoracotomy. Early instrumentation systems through thoroscopic spinal surgery were of minimalist approach and were not robust enough, resulting in screw breakage, rod breakage or screw pull-out. Instrumentation has been refined so that current thoroscopic fusion techniques and instrumentation have now yielded success rates comparable to open techniques.

Our current thoroscopic spinal surgery techniques have been developed over

the last 13 years. The approach may be employed either through the right or left side. Preoperatively, patients typically have epidural catheter placement for highly effective postoperative analgesia. Our results have found that with one and two-level thoroscopic interbody fusions, one can avoid instrumentation and use bracing alone for postoperative immobilization. The key to success is having cortical purchase of the implants or grafts to avoid subsidence and to evaluate patients for osteopenia or osteoporosis preoperatively as this requires treatment to insure success. Our current techniques now have a fusion rate of over 95%. Post-thoracotomy syndrome has been virtually eliminated, and patients have enjoyed high clinical outcomes. ■



+ The National Institutes of Health should revise current U.S. Public Health Service regulations to require institutional conflict of interest policies.

+ Oversight bodies and other interested groups, such as government agencies and private health insurers, should provide incentives for institutions that adopt and implement conflict of interest policies.

Reactions to the report are mixed with some physicians praising its recommendations and others remarking that the guidelines do not go far enough. Although the majority of the recommendations are voluntary solutions, stronger legislative action to avoid potential problems will likely be created in the future. ■

National Dizzy & Balance Center

Advanced technologies. Expert evaluations and treatment. Extraordinary patient experiences.

www.StopDizziness.com



National Dizzy and Balance Center (NDBC) is a unique outpatient clinic system. We combine medical doctors, audiologists, and physical therapists all within the same facility to offer a true multidisciplinary approach for balance disorders.

We utilize advanced diagnostic balance testing labs to more accurately diagnose the source of a patient's problem. This enables our providers to develop a more specific individualized treatment protocol when our patients start their rehabilitation program.

BALANCE TESTING LAB SERVICES:

- Rotational Chair Testing
- Video-Electronystagmography - (VENG)
- Computerized Dynamic Posturography - (CDP)
- Evoked Potential Testing - (ABR, Ecog DAE, VEMP)
- Audiologic and Hearing Assessments

REHABILITATION SERVICES:

- Vestibular rehabilitation
- Neurological rehabilitation
- Balance re-training & education
- Fall prevention techniques & education
- Muscle strengthening and reconditioning

Our treatment protocols have one distinct advantage over other physical therapy clinics in that we have the ability to use our CDP system as an objective way to measure a patient's improvement in our rehabilitation programs. This gives us immediate feedback on the overall effectiveness of a patient's Individualized therapy program and enables our therapists to fine tune each patient's program to achieve the maximum benefit for each patient.

LOCATIONS:

Coon Rapids

320 Coon Rapids Blvd.,
Suite 200
Coon Rapids, MN 55433
Ph: (763) 786-6900
Fax: (763) 786-6901

Edina (Southdale)

Southdale Place Building
3400 West 66th Street,
Suite 300
Edina, MN 55435
Ph: (952) 345-3000
Fax: (952) 345-6789

St. Paul (Downtown)

Ft. Road Medical Building
360 Sherman Street,
Suite 390
St. Paul, MN 55102
Ph: (651) 221-0303
Fax: (651) 221-0302

 **NDBC**
National Dizzy
& **Balance Center**

www.StopDizziness.com