Introduction to the Guidelines for the Performance of Fusion Procedures for Degenerative Disease of the Lumbar Spine

ROBERT F. HEARY, M.D.

Chairman, American Association of Neurological Surgeons/Congress of Neurological Surgeons
Joint Section on Disorders of the Spine and Peripheral Nerves
Newark, New Jersey

On behalf of the American Association of Neurological Surgeons/Congress of Neurological Surgeons (AANS/CNS) Joint Section on Disorders of the Spine and Peripheral Nerves, I am proud to introduce the Guidelines for the Performance of Fusion Procedures for Degenerative Disease of the Lumbar Spine. This work represents the culmination of 2 years of extraordinary effort and work on the part of 11 neurological and orthopedic surgeons. The committee presents data that have been reviewed by the major organizations representing neurological surgery and orthopedic surgery. The Board of Directors of the AANS and the CNS Executive Committee have reviewed these Lumbar Fusion Guidelines and formally voted their approval. In addition, input and approval was received and greatly appreciated from the AANS/CNS Guidelines committee.

The AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves thanks Dr. John Jane Sr. and the staff of the Journal of Neurosurgery: Spine for their editorial assistance in bringing this document through the peer-review process to publication expeditiously and efficiently. The Journal of Neurosurgery: Spine has published a tool with the potential to be a mainstay reference for surgeons who treat patients with degenerative disorders of the lumbar spine.

The present treatment of degenerative lumbar spine disease covers a wide spectrum; however, various algorithms are used in the preoperative assessments and postoperative determinations of the efficacy of treatment. Due to a lack of standardization, treatment strategies have been based on institutional, departmental, or personal experience, which has led to management philosophies that are not consistent. Reports in the available medical literature are inconsistent and vary widely in terms of scientific veracity. The uncertainty that surrounds many aspects of lumbar disease has necessitated the development of an evidence-based comprehensive set of guidelines to begin to clarify patient care and the best practice standards.

Seventeen topics related to the lumbar spine were chosen for this project, and the preoperative diagnostic and treatment options were reviewed for each, as were parameters for the determination of postoperative success. Specific surgical treatments were analyzed, and recommendations were developed. Rationale and scientific foundation are offered for each topic, the findings are summarized, and key directions for future research are posed. The pertinent references are cited and characterized in evidentiary tables. The goal of this project was to increase the objectivity in the decision making for the treatment of lumbar conditions.

The strength of an evidence-based document is only as strong as the foundation on which it is built. This comprehensive document chronicles the state of scientific information in 2005. Many of the published reviews presented flawed results due to poorly defined outcome measures, inadequate numbers of patients, and comparison of dissimilar treatment groups. These studies of “apples and oranges” gleaned little scientific information; therefore, for the purpose of this review, the authors have discarded Class III studies whenever stronger scientific evidence was available. The result is that most of the published studies on lumbar fusion were not included on this document. When Class I or II scientific evidence was available, standards and guidelines were formulated; however, in most cases, the scientific data were only adequate to support recommendations for treatment options. The aforementioned results do not detract from the importance of this document; rather, we can now clearly see the need for the neurosurgical community to design and complete prospective randomized controlled studies to answer the many lingering clinical questions with rigorous scientific power. As more data continue to be accumulated, revisions of this document will be needed.

The Guidelines represent a “must read” for neurological or orthopedic surgeons who use lumbar fusion techniques in the treatment of degenerative low-back conditions. Established surgeons, spine fellows, and residents in training will benefit greatly from this thoughtful review. I am delighted to be able to present these Guidelines on behalf of the AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves, and I would like personally to congratulate and thank the authors for this masterful effort.