Perioperative Outcomes and Complications Following XLIF for the Treatment of Adult Scoliosis: Results of a Prospective, Non-randomized, Multi-center Evaluation

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Introduction: Combined anterior/posterior instrumented fusion is often performed for the surgical treatment of adult scoliosis. Such procedures have been associated with a high risk of complication, particularly in the elderly patient population. Less invasive surgical approaches to neural decompression and fusion have recently been applied in the treatment of degenerative scoliosis. This report summarizes the perioperative complications following lateral fusion for the correction of degenerative scoliosis.

Methods: In a prospective multicenter observational study of patients who underwent the XLIF procedure for the treatment of degenerative scoliosis, perioperative measures were compiled to identify the short-term outcomes of the procedure. Intraoperative data collection included surgical details, operative time, estimated blood loss, and complications. Postoperative complications, length of hospital stay, and neurological status were recorded.

Results: 107 patients (mean age 68 years; range 45-87) were treated with XLIF. 28% had at least one comorbidity. A mean of 4.4 levels/patient (range 1-9) were treated. Supplemental pedicle screw fixation was used in 75.7% of patients, 5.6% had lateral fixation and 18.7% had standalone XLIF. Mean operative time and blood loss were 178min and 50-100cc. Mean hospital stay was 2.9 days (unstaged), 8.1 days (staged; 16.5%), 3.8 days overall. 5 patients (4.7%) received a transfusion, 3 (2.8%) required ICU admission, 1 (0.9%) required rehabilitation services. Major complications occurred in 13 patients (12.1%): 2 (1.9%) medical, 12 (11.2%) surgical. Of procedures that involved only less invasive techniques (XLIF standalone or with percutaneous instrumentation), 9.0% had one or more major complications. In those with supplemental open posterior instrumentation, 20.7% had one or more major complication. Early reoperations (3, for deep wound infections) were associated with open posterior instrumentation.

Conclusion: The morbidity in adult scoliosis surgery is minimized with less invasive techniques. The rate of major complications in this study (12.1%) compares favorably to reports from other studies of surgery for degenerative deformity.