Extreme Lateral Interbody Fusion (XLIF) in the Morbidly Obese

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Introduction: Minimally invasive procedures are challenging in obese patients whose body habitus may decrease the accessibility of the spine to the instruments necessary to perform these procedures. The XLIF procedure, however, is performed in the lateral decubitus position, minimizing the difficulty of the pannus as it falls away from the exposure.

Methods: In our single-site prospective series of 941 XLIF patients, 479 were identified as obese (BMI>30) and 160 of those were morbidly obese (BMI > 38). Comorbidities, surgical details, hospital stay, complications, pain scores, changes in disk height and alignment, and fusion were assessed.

Results: In all our XLIF patients, no surgery could not be successfully completed due to body habitus. The heaviest patient to date weighed 427 lbs (193.7 kgs); the largest BMI was 61.8 (avg 43.6, range 38.0-61.8). Age ranged from 22-78yrs. Comorbidities included smoking (30%), prior spine surgery (43%), diabetes (30%), CAD (42%), COPD (4%). 586 levels were treated in these 479 patients: 386 1-levels, 80 2-levels, 12 3-levels and 1 4-level; the majority at L4-5. All but 2 surgeries included supplemental fixation. There was three transfusions and one infection. Complications included 2 MI's at 4 and 6 wks, one atrial fibrillation, pneumonia requiring intubation for 5 days, one other respiratory distress requiring reintubation, one pulmonary embolism, one posterior hardware failure/rod fracture at 6 mos, and one fracture of vertebral osteophytes requiring reoperation. Hospital stay averaged 1.29 days. From pre-op to 24 month follow-up: disk height increased an average 2.6mm; slip decreased an average 3.2mm in spondylolisthesis patients; and VAS pain scores decreased from 8.7 preop to 2.7 at 24 mos. Lenke scores were 2.1 at 3 mos, 1.2 at 12 mos, and 1.1 at 24 mos.

Conclusion: Our results demonstrate the usefulness and safety of the XLIF technique in treating morbidly obese patients minimally invasively. Complications are minimal, procedures timely, and outcomes similar to non-obese patients.