Is the Less Invasive Far Lateral Approach a Safe Way to Reconstruct the Anterior Spinal Column in Advanced Adult Deformity Surgery? A Minimum 2-year Follow-up Study
B. Akbarnia1, G. Mundis1, R. Bagheri1, P. Salar1, N. Kabirian1
1San Diego Center for Spinal Disorders, La Jolla, CA, United States

Summary: 16 adult patients with an average Cobb angle of 47° were treated with an anterior release and spinal fusion via a less invasive lateral interbody fusion. While there are predictable perioperative sequelae, there was significant improvement of curve magnitude and various clinical outcome measures at two year post-op.

Introduction: Anterior reconstruction of the adult spine is a widely accepted approach to improve fusion rate and achieve coronal and sagittal correction. We present our experience using the less invasive far lateral interbody fusion (LIF) to achieve these goals.

Methods: This was a retrospective review of adult deformity patients undergoing LIF. Of 58 patients, 16 met the inclusion criteria: Cobb ≥30°, initial surgery for scoliosis, and minimum 2-year follow up. Exclusion criteria included add-on disease and primary diagnosis other than scoliosis. Clinical, radiographic and outcomes data were analyzed.

Results: There were 15 females and 1 male. Mean age was 56 (23-84) yrs, 7 were idiopathic and 9 were degenerative scoliosis. Mean co-morbidities were 2.6 per patient. Main curve improved from 47° to 17°, the L4 tilt significantly corrected from 23° to 10°. Change in spinal balance, lordosis (L1-S1) or amount of lordosis across the LIF was not significant (Table 1). 5 of 16 developed a total of 8 complications associated with LIF: 3 abdominal wall bulging, 3 post-op quadriceps weaknesses, 1 anterior dislodgment of a cage requiring revision, and one pleural effusion resolved with chest tube. All patients regained quadriceps function within 6 months of surgery. 9/16 (56%) experienced anterior thigh numbness (2 permanent) and 8/16 (50%) anterior thigh pain for at least 4 weeks post-op. Post-operative improvement at two year follow up for VAS (6.5 to 2.5), ODI (60 to 24) and SRS-22 (2.6 to 3.8) were all statistically significant.

Conclusion: LIF approach is a safe and effective alternative to open surgery for adult scoliosis. Patients with advanced spinal deformities should be made aware of possible post-op thigh numbness, pain and/or transient weakness as sequelae of the less invasive LIF technique.