Clinical: Fusion

Extreme Lateral Interbody Fusion (XLIF) for the Treatment of Degenerative Spondylolisthesis

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Introduction: The optimal surgical treatment for lumbar spondylolisthesis remains unclear. This work shows our clinical and radiological experience in treating degenerative spondylolisthesis in a lateral minimal invasive way. Satisfactory clinical outcomes for the treatment of degenerative spondylolisthesis have been reported, but its optimal surgical treatment still remains unclear.

Methods: Prospective, non randomized single center clinical trial with 66 levels. Patients were treated for low grade degenerative spondylolisthesis at lumbar levels. Lateral, A-P, and flexion-extension X-rays, neurological examination, and clinical outcome assessment using Oswestry and VAS scores were performed at the preoperative, 1, 6 week, 3, 6, 12 and 24 months postoperative intervals. Also, radiological outcomes were accessed at same f.u. points. The extreme lateral approach was done through the retroperitoneal space and through psoas muscle avoiding neurological and vascular lesions. A discectomy was done and the end-plate cleaned, a cage settled with graft and the ALL and PLL were preserved, adding more stability, thus the ligamentotaxis. Two groups were compared - standalone and supplemented XLIF procedures.

Results: The procedures were performed without complication in an average 171 minutes and with less than 50cc blood loss. Global VAS pain scores improved from the average 8.84 at pre-op to 3.2 at 2 years, standard deviation 1.75 and 1.16 respectively. Oswestry scores improved from an average 58.44 at pre-op to 20.75 at 2 years with standard deviation of 12.79 and 9.32 respectively. In the two groups, stand alone or supplemented with pedicle screws, occurred fusion, with no difference of consolidation time. We observed similar cage subsidence prevalence in both groups, but only on standalone group occurred cases of total disc collapse. L4L5 was the level that presented most of the subsidence occurrences, and severe cases appeared on elderly women. These results are proven to be statically significant.

Discussion and conclusion: Using the XLIF technique we were able to treat the deformity, improving pain, providing stabilization and fusion. The XLIF technique has shown to be a safe and reproducible technique to treat spondylolisthesis deformity thought a minimally invasive way. On elderly women fusion supplementation may be considered to avoid cage subsidence.