

Prevention Of Accelerated Degenerative Changes Of Adjacent Segment Following Dynamic Stabilization Of Lumbosacral Spine Within 2 Years Follow-Up

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INTRODUCTION:

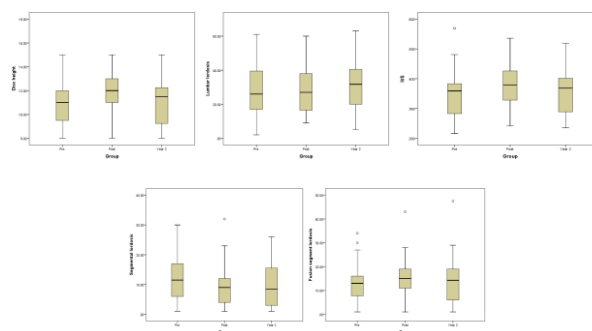
Adjacent segment degeneration (ASD) following lumbar fusion surgery remains a generally acknowledged problem. Currently there is still inconclusive knowledge regarding the factors that contribute towards this complication. The aim of this study is to analyse non-fusion motion preservation surgery using the IsoBar TTL[®] semi-rigid pedicle screw stabilization system (Scient'x, Britonneux, France) may prevent accelerated adjacent segment degenerative changes through the protective effect of controlled motion segment.

MATERIALS & METHODS:

Data collected from patients who underwent Transforaminal Lumbar Interbody Fusion (TLIF) with IsoBar TTL[®] procedure done by a single surgeon between May 2005 till April 2014 in Spine Unit, HKL. This study involved 35 patients (20 females; 15 males) whom underwent IsoBar TTL[®] procedure above one or more fused levels (16 single level fusion, 18 two level fusion and 1 three level fusion). Serial lumbosacral radiographs (preoperative, immediate post-operative, and 2-year post-operative lumbosacral lateral radiographs) were studied and compared for any radiological signs of degenerative changes specifically at the adjacent segment cephalad to fused lumbar spine. Parameters that being used for these evaluations are disc height (Dabbs method), intervertebral space (IVS), global lumbar lordosis, segmental lordosis, and fused segment lordosis.

RESULTS:

There were no statistically significant changes in the disc height, intervertebral space (IVS), lumbar lordosis, segmental lordosis, and fused segment lordosis ($P > 0.05$) at the operated levels between immediate post-operative and 2 years postoperatively plain radiographs.



DISCUSSIONS:

As there are no significant changes of the parameters measured in 2 years follow-up data, we hypothesized that accelerated ASD can be prevented or delayed by means of dynamic stabilization procedure. The 2 years radiological data in this study demonstrated the short-term benefit of IsoBar TTL[®] semirigid system. Nevertheless, more long term data and extended sample size with post-operative MRI of the lumbosacral spine are needed to produce more representative and accurate results to clearly define the efficacy of the implant on the prevention of ASD

CONCLUSION:

Posterior dynamic stabilization device has been demonstrated to delay the degenerative process at the adjacent segment in short term follow-up (2 years).

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