

Short Segment Posterior Fixation with Index Level Screws Versus Long Segment Posterior Fixation for Thoracolumbar Spine Fracture: Angle of Correction and Pain

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Introduction

As a simple and commonly used technique, short-segment pedicle instrumentation of thoracolumbar instability seems to have a high rate of implant failure and recurrence of instability.Data obtained from those studies suggest that the use of transpedicular screws at the fractured level provides the advantages of a stiffer construct, an increased biomechanical stability and the effect of 3-point fixation of the unstable segment leads to gardening against pulled-out.

Methods

Methods: A prospective study of 61 patients, have single level thoracolumbar spine fracture with Cobb's angle = 25°, underwent posterior fixation. Of them, Thirty three patients underwent short segment fixation one level above and one level below with screws into the index level, and twenty eight patients underwent long segment fixation with two levels above and two levels below with skipped index level. All patients were followed up for about 1 year until the fusion achieved. The angle of correction and pain were regularly assessed by Cobb's angle measurement and visual analogue scale (VAS) respectively.

Learning Objectives

Objective: The purpose of this study was to assess and compare between short segment fixation with screws into index level (fractured level) versus long segment posterior fixation in maintaining angle of correction and post-operative pain

Results

The sixty one patients who underwent posterior fixation was grouped into 33 short segment cases and 28 long segment cases. the post –operative mean angle of correction were 6.8° ± 2.6° and 5.8° ± 1.6° respectively (P= 0.098). After 1 year follow up, the angle of correction have become 7.8° ± 1.6° and 7.9° ± 1.8° respectively (P= 0.860). The pain was assessed by VAS on regular base follow up. In short segment group the pre-operative VAS was 5.6 ± 2.1 whereas the long segment group VAS was 5.1 ± 2.1 (P= 0.284).On one year follow up the VAS were 1.4 ± 0.5 and 1.8 ± 0.4 (P= 0.590) respectively.

Conclusions

Conclusion: the short segment fixation with screws into index level can maintain the angle of correction till the fusion achieved as long segment fixation

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