

OUTCOME OF SHORT SEGMENT POSTERIOR INSTRUMENTATION WITH INDEX LEVEL PEDICLE SCREW IN THORACOLUMBAR FRACTURE

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INTRODUCTION:

Thoracolumbar fracture common in traumatic spine injury. The optimal surgical treatment of thoracolumbar burst fractures remains a matter of debate. Short segment posterior instrumentation (SSPI) with index level pedicle screw is one of several possible choices. Yet far too little attention has been paid to the radiological and functional outcome.

METHODS:

Patients treated using the SSPI and fusion technique with index level pedicle screw at the HSAJB from April 2017 to July 2018 were selected for this study. Radiographic parameters such as segmental kyphotic angle and anterior height of the vertebral body at admission, post operation and final observation were collected for radiological outcome evaluation. SF36, Denis pain and work scale used for functional outcome evaluation.

RESULTS:

Prospective longitudinal study conducted with total 20 patients who met the inclusion criteria. Mean follow up duration of 6 months. The median age was 32.5 years (range, 18-58 years). Significant kyphosis and anterior vertebra height correction postoperatively without significant loss of reduction at final follow up. Majority of patients had physical and emotional health at least similar to general population postoperatively. All patient was able to return to work with no severe incapacitating pain at final follow up. No correlation found between radiological and functional outcome

DISCUSSIONS:

The radiological outcomes do not always correspond to the clinical outcomes. The relationship between radiological findings and clinical outcomes is still a matter of debate. Hence, further research involving a larger patient population with long-term follow-up

might open the new door for the future thoracolumbar fracture management.

SSPI with index level pedicle screw	N=20
Gender: N (%)	Males: 15 (75%)
	Females: 5 (25%)
Age (years) at the time of operation	32.5 years (range, 18-58 years)
Mean Operation Time (Minutes)	116±24
Median post-operative hospitalization	4 days (range, 3-7 days)
Fracture Level	T11-L2: 17
	L3-L5: 3
Follow Up Duration (Months)	6 months (range, 5-8 months)

Figure 1: Characteristic & Demographic

Radiograph	Median	Minimum	Maximum
Sagittal Index			
At injury	14.7	-8.3	24.7
Post-operative	-2.4	-15	10
6 months	-2.4	-13	11.8
Anterior vertebral height (%)			
At injury	53.5	13	80
Post-operative	92.5	55	100
6 months	86	52	100

Figure 2: Radiological outcome

CONCLUSION:

Short term functional outcome of SSPI with index level pedicle screw was satisfactory. Radiological outcome was improved with surgical treatment without significant loss of reduction. Yet no correlation was found between functional and radiographic outcome.

REFERENCES:

1. Gelb, D., Ludwig, S., Karp, J. E., Chung, E. H., Werner, C., Kim, T., & Poelstra, K. (2010). Successful treatment of thoracolumbar fractures with short-segment pedicle instrumentation. *Journal of Spinal Disorders and Techniques*, 23(5),293–301.