

## Introduction

The treatment of thoracolumbar burst fracture is a controversial issue. Short-segment (SS) instrumentation is a less invasive and economically viable treatment option. However, there are several studies regarding the high rate of failure. The aim of this retrospective study was to evaluate the clinical and radiological factors influencing the outcome and efficacy of this procedure.

## Methods

This is a retrospective review of 57 consecutive patients with short segment instrumentation of thoracolumbar burst fractures performed between 1997 and 2003. Baseline demographic & clinical information was obtained. All patients underwent a clinical and radiological assessment by an independent observer. Preoperative evaluation of neurological compromise was graded according to Frankel Grading Scale; while disability preoperatively, at discharge and at follow up was measured using the Barthel Index (BI) and Functional Independence Measure (FIM) scoring.

## Results

Fifty seven patients were studied which included fifty three (93%) males and four (7%) females. The mean age at injury was 31.29 years (range 15-65 years). Most patients were between 15 and 25 years of age. There was significant improvement in Impairment and Disability Scores at discharge and follow up as measured by Barthel Index and Functional Independence Measure score (FIM) respectively. ( $p < 0.001$ ). Frankel A showed less significant improvement compared to other groups. Mean length of stay in hospital was 35 days (range 5 -177 days). Most common complication was UTI followed by wound infection.

## Discussion

The management of these fractures remain controversial ranging from no treatment to a myriad of instrumentation procedures. Tenderness over the spine with or without neurological deficit should elicit a high index of suspicion to the presence of underlying spinal injury. 54/57 patients in our series had partial or complete neurological deficits. This was likely due to a referral bias. Surgery stabilizes the spine and reduces the hospital stay. It was 35 days in our series, due to poor grade at presentation. The Frankel grade at admission is a strong determinant of outcome following surgery. In the present study, patients who were Frankel A at admission had the worst outcome, with only 3 out of 12 patients having useful motor function at follow up. However patients who were in Frankel B (paraplegia with incomplete sensory) showed significant improvement in outcome. Disability scores improved significantly from admission to discharge and discharge to follow up ( $p < 0.001$ ).

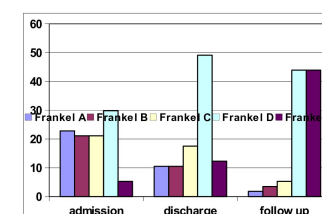
## Conclusions

Short segment instrumentation is less invasive, more affordable and operative time less and blood replacement not necessary. Surgery affords optimal results with early mobilization. Significant improvement in functional outcome at follow up in Frankel Grades B-E. Implant failure on a long term follow up can be avoided by proper hardware selection, meticulous surgical technique towards achieving a solid bony fusion, graduated load bearing and rehabilitation.

## Learning Objectives

Thoraco lumbar fractures- less invasive treatment options  
Follow-up for treatment failure.  
Surgery leads to earlier mobilization.

**Frankel grades at Admission Discharge and Followup**



## References

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