Minimal Invasive Reduction of L1/L2 Fracture Dislocation with Shanz Pins and External Fixator: A Case Report of Functional Recovery with MISS

[1]Khen, Koh; [1]Kidd, Chiu; [1]Hong, Chung

[1]National Orthopaedic Centre of Excellence for Research and Learning (NOCERAL), Department of Orthopaedic Surgery, Faculty of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia

INTRODUCTION:

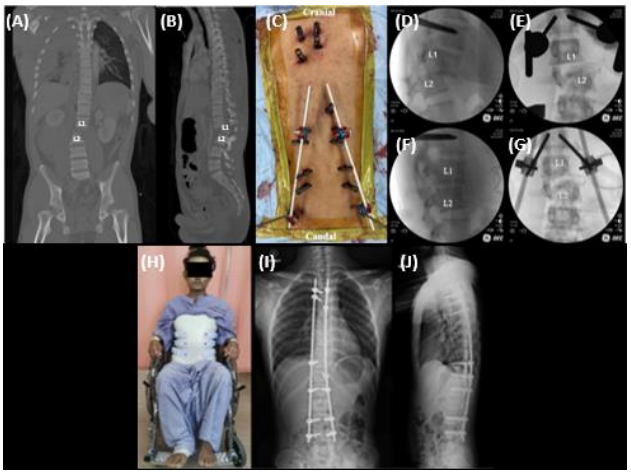
Minimally invasive spine surgery (MISS) can be utilized in unstable thoracolumbar spine fractures with proven safety and accuracy of percutaneous pedicle screws insertion. We report a successful treatment of a 19-year-old gentleman with unstable Type C injury treated with MISS.

REPORT:

A 19-year-old pedestrian was struck by a fallen tree trunk, causing an L1/L2 fracture-dislocation and multi-level thoracic vertebrae fractures (T6-T12). MRI-scan demonstrated spinal cord oedema with posterior ligamentous complex injury and epidural hematoma (T11-L1). Additional injuries include right scapular fracture, flail chest, and intra-abdominal injuries. His neurology progressed from ASIA-D and Frankel-D at L2 level, to ASIA-C and Frankel-C at L1 level within 3 days. MISS was performed with percutaneous transpedicular Schanz pins to aid reduction. The reduction was secured with external fixator followed by posterior instrumentation from T4-L4. The patient was placed in a thoraco-lumbo-sacral-orthosis (TLSO) postoperatively. He demonstrated significant functional recovery with improved motor function (Frankel D) within 2 weeks and was able to ambulate independently by week-6.

CONCLUSION:

This case underscores successful MISS surgery, highlighting the patient's remarkable functional improvement postoperatively.



Clinical Pictures: (A-B) Pre-op imaging showing L1/L2 fracture-dislocation with multilevel thoracic spine fractures; (C-E) Reduction of L1/L2 utilizing Shanz Pins and External fixator; (H) Patient good truncal support on wheelchair; (I-J) Post-op imaging

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