Percutaneous fixation of thoraco-lumbar fractures: 2 year follow-up

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Introduction

- Evaluate our experience with minimally invasive surgical technique for posterolateral fusion (MIS-PL fusion)
POSTERIOR LATERAL FUSION

- Long proven technique for stabilization of spinal segments
- Can be used as a stand-alone technique or in association with other approaches
DRAWBACKS OF OPEN PL FUSION

- Potential for significant intraoperative blood loss
- Significant post-operative pain
- Prolonged length of stay
- Long-term paraspinal muscle atrophy
METHODS

- 2 year retrospective review of thoraco-lumbar fractures fixed with MIS-PL fusion.
  - 21 patients identified
- Etiology of fractures included metastatic tumor, primary tumor and trauma.
- Outcomes measured:
  - Visual analog pain score (VAS) pre-operatively, at 1 month and 2 years, estimated blood loss (EBL), length of stay (LOS), operative time, # of levels fused.
- Pseudoarthrosis, infection, re-operation rates tracked
TECHNIQUE

2 Fluoro Units

Perc Fixation
Percutaneous Screw Fixation
GRAFT PREP AND PLACEMENT TOOLS
DECORTICATION OF TRANSVERSE PROCESSES
PLACEMENT OF BONE GRAFT
TECHNIQUE

Figure 1. Pre-Op MRI
Figure 2. Post-Op AP
Figure 3. Post-Op Lateral
RESULTS

- 21 patients identified
- Mean number of segments stabilized 3.9 (range 2-5)
- Mean EBL was 57 ml (range 0-100 ml)
- Mean OR time 93 minutes (range 82-106 mins) - 26 minutes per segment
- Average Length of Stay 1.6 Days
- No reoperation for pseudoarthrosis
- No infections
Visual Analog Score

![Graph showing changes in visual analog score over time](image)
CONCLUSION

- MIS-PL fusion is a safe, effective and less invasive alternative to traditional open PL fusion.
- It succeeds in providing significant pain relief and shortens the length of stay considerably.
- Allows for rapid mobilization of the multi trauma patient
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