

Minimally Invasive Unilateral Percutaneous Transarticular Fixation Of A Hangman's Fracture. Case Report

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Introduction:

Traumatic spondylolisthesis or hangman's fractures are common cervical spine fractures. The majority of these are treated non-surgically with external immobilization. Indications for surgery generally include fracture instability or failed non-operative management. Operative stabilization can be performed through either anterior or posterior approaches and has generally required instrumentation using open methods. In this report, we propose a technique for surgical repair of hangman's fracture that is minimally invasive and motion preserving that utilizes recent advances in 3D image-guidance technology. We believe this method represents another option in the treatment of hangman's fractures which provides immediate stabilization, prompt recovery, and quick mobilization.

Report:

This report presents two patients with hangman's fractures who were treated by surgical unilateral transfixation using a minimally invasive percutaneous screw placement. In both cases, we used 3D neuronavigation and bidirectional intraoperative fluoroscopy. Surgical time from incision to closure was less than 30 minutes. Preparation and positioning after intubation varied from 40 to 150 minutes. No intraoperative complications occurred. Both patients were discharged within 48 hours. Follow-up at 3 and 12 months revealed healthy bony fusion by CT imaging and excellent clinical recovery.

Conclusion:

We provide two examples where minimally invasive unilateral fixation of hangman's fractures proved to be safe and effective. In both cases, patients were immediately relieved of their pain, quickly mobilized and promptly discharged. Successful fusion was achieved at follow-up.