

البحث السابع

عنوان البحث باللغة الإنجليزية:

Percutaneous Fixation as an Option for Traumatic Neurologically Intact Thoracolumbar Vertebral Fractures

Abstract

Background: The most frequent spinal fracture is the thoracolumbar fracture. Minimally invasive percutaneous fixation of cases having thoracolumbar vertebral fractures without neurological impairments has remained controversial. The advantages of minimally invasive percutaneous fixation are decreasing muscle and soft tissue injury, decreasing blood loss and infection rate, in addition to shortening hospital stay and recovery times. In comparison to the open technique, percutaneous fixation is adequate for treating thoracolumbar (TL) fractures without causing neurological impairments & with satisfactory outcomes in terms of kyphosis decline. Elevated radiation exposure to the surgeon & the patient, lack of decompression and fusion via bone graft, & a steep learning curve are all disadvantages of percutaneous fixation of vertebral fractures.

Methods: This study was retrospectively conducted on forty-eight patients, age ranging from 16 to 65 years old, with a thoracolumbar (TL) fracture without causing neurological impairments who were meeting the eligibility criteria for fixation in the period from July 2019 to January 2024.

Results: We included the forty-eight patients who met the inclusion criteria (34 males and 14 females) their ages ranged from 16 to 65 years. The most common pathology was L1 fracture in 38 patients. No major complications were experienced, only wound infection in five patients which was treated efficiently with repeated dressings and broad-spectrum antibiotics. Four patients experienced misdirected screws, only in one patient the screw encroached into the spinal canal with no deficit experienced, while the other three showed minimally laterally deviated screws.

Conclusion: The advantages of percutaneous pedicle screw fixation in thoracolumbar fractures through preservation of posterior musculature, are less blood loss, shorter operative time, lower infection risk, less post-operative pain, shorter rehabilitation time as well as a shorter hospital stay. Limitations of percutaneous fixation include the inability to achieve direct spinal canal decompression and, not having the option to perform a fusion and also requiring a learning curve to master the anatomy and technique.

Keywords: Thoracolumbar Fractures, Fracture Stability, Percutaneous Fixation