

Spectrum of Thoracolumbar Fractures Involving the Vertebral Body in a Trauma Population Over a One-Year Period

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Introduction

Descriptive data on traumatic fractures of the thoracic and lumbar spine are lacking. We reviewed our institution's experience with traumatic thoracolumbar fractures over a oneyear period.

Methods

We queried the LAC+USC Trauma Registry for all thoracic and lumbar fractures between December 2013 and December 2014. Patients with chronic injuries, isolated transverse or spinous process fractures, and those with indeterminate imaging were excluded. Fracture characteristics including loss of height (LOH) and kyphosis at the fractured segment were ascertained from review of initial imaging. Outcomes were ascertained from review of last available imaging.

Results

We identified 149 patients, of whom 112 were male (75.2%). The mean age was 38.2 years (range: 15-65 years). All patients had a CT scan. Seventy-four patients (49.7%) received an MRI, and 47 patients (31.5%) received x-rays. Compression fractures occurred in 96 patients (64.4%), with >25% LOH in 15 (15.6%). Burst fractures occurred in 42 patients (28.2%), with >25% LOH in 21 (50.0%) and >25% canal compromise in 24 (57.1%). Chance fractures occurred in 7 patients (4.7%) and fracturedislocation injuries in 4 (2.7%). Sixty-four patients (43.0%) sustained any fracture at an additional thoracic or lumbar level. For all fractures, the mean kyphosis across the fractured level was 11.0°. Twenty-seven patients (18.1%) received a spine surgery: 6 patients with compression fractures, 16 with burst fractures, 1 with chance fracture, and 4 with fracture-dislocations. Followup imaging was available in 48 patients (32.2%) and occurred at a median of 2.5 months. In nonoperative patients, kyphosis increased by a mean of 2.2° and LOH progressed in 5/20 (25%) at last follow up.

Conclusions

In this observational study, LOH > 25% was seen in 25.5% of thoracolumbar fractures involving the vertebral body. Follow-up rates and durations were low. Longitudinal radiographic and clinical follow up is warranted for significant thoracolumbar fractures given the risk for progressive deformity.

Learning Objectives

By the conclusion of the session, participants should be able to: 1) recount the types of fractures observed in the study, 2) cite the average kyphosis across fractured levels, 3) report increase in kyphosis at last follow up