

Delayed Vertebroplasty in Acute Traumatic Burst Fracture First Treated by Short-Segment Fixation: a
Case Report

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【Introduction】

The management of traumatic burst fractures without neurologic deficits is still controversial. It is a relative controversy for vertebroplasty in treatment of burst fracture, especially when posterior wall destruction and retropulsed bony fragment were noted. We report a case of acute traumatic burst fracture with posterior wall disruption and retropulsed fragment treated by posterior short-segment instrumentation followed by delayed vertebroplasty 2 months later.

【Materials and Methods】

A 63-year-old woman with a history of gastric ulcer was admitted via the emergency department because of fell from the height of 2-floor. Radiographic findings included left 11th rib fracture, left distal radial and ulnar fracture, L1/L3 burst fracture, L1 to L5 spinal process fracture and left sacrum fracture. CT scans revealed intact endplates of L1 and broken endplates of L3. Posterior wall disruption of L1 and L3 vertebral bodies and retropulsed bony fragments were also noted. We performed posterior instrumentation from T12 to L4 and transpedicular bone graft with autograft and triosite over L1 vertebral body. Two months after the first surgery, she underwent L3 vertebroplasty due to cavity in L3 vertebral body.

【Results】

Her back pain were improved after the first surgery. The vertebral body height of L1 and L3 was maintained without implant loosening after 1-year follow-up.

【Discussion】

The treatment of burst fractures is based on 2 primary principles, neurologic optimization and biomechanical stability. It is a relative contraindication to perform vertebroplasty in acute traumatic burst fracture with posterior wall disruption and retropulsed fragment. However, after consolidation of destructed endplate and posterior wall, the risk of cement leakage is decreased. Vertebroplasty can then be performed to maintain vertebral body height and prevent kyphosis or implant failure.

【Conclusions】

Posterior short-segment instrumentation followed by delayed vertebroplasty may be an option in the management of acute traumatic burst fracture with posterior wall disruption.