Can Kyphoplasty Prevent Vertebral Body with Occult Osteoporotic Fracture from Collapse?

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Background and objective: Occult osteoporotic vertebral fractures can result in back pain and the vertebral body may collapse which can lead to retropulsion of bone into the spinal canal causing spinal cord compression. We retrospectively review the patients with occult osteoporotic vertebral fractures treated by kyphoplasty at our institution to reveal whether kyphoplasty can prevent the vertebral body with occult osteoporotic vertebral fracture from collapse and alleviate the pain.

Methods: In this retrospective study, we reviewed 18 patients with occult osteoporotic vertebral fractures at our institution from January 2008 to January 2009. The occult osteoporotic vertebral fractures were diagnosed by magnetic resonance imaging (MRI) and/or bone scintigraphy. All the patients were treated by kyphoplasty and the pain and vertebral body height were measured pre-, post-operation and at the follow-up. The visual analogue scale (VAS) was used to determine the relief of back pain. The anterior body height was measured on a lateral radiography.

Results: Follow-up ranged from 12 months to 24 months. Mean VAS decreased from 8.2±1.4 preoperatively to 2.7±0.8 postoperatively, and maintained at 2.8±1.2 at final follow-up. The mean anterior body height before kyphoplasty was 98.8%±8.9%. It maintained at 98.9%±9.1% postoperatively, at 98.7%±9.0% at final follow-up.

Conclusions: Kyphoplasty was useful for prophylactically stabilize body with occult osteoporotic vertebral fractures and prevent body from collapse. Meanwhile, kyphoplasty can alleviate the pain caused by occult osteoporotic vertebral fractures.

Keywords: Stress fractures, vertebral fractures, kyphoplasty, osteoporosis.