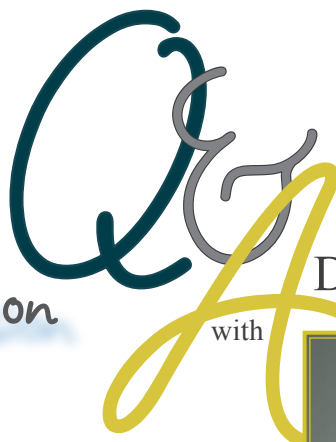


Treating Vertebral Compression Fractures



Dr. Michael Chang

with



The National Osteoporosis Foundation reports that in the United States, osteoporosis causes over 700,000 vertebral compression fractures (VCF's) annually, more fractures than in the hip and wrist combined. Since 50% of women and 25% of men older than 50 will have an osteoporosis-related fracture in their lifetime, it is important to take a closer look at osteoporosis and new options for treating vertebral compression fractures.

Q: How common is osteoporosis?

Osteoporosis affects 44 million Americans and is cited as a major public health threat by the National Osteoporosis Foundation. The World Health Organization ranks osteoporosis second only to cardiovascular disease as a leading healthcare problem. Osteoporosis is diagnosed by a bone density study, which can be ordered by your doctor.

Bones in our spine, hip and wrist deteriorate as a result of osteoporosis and become susceptible to fractures. In the spine, small fractures lead to compression of the vertebral body (called vertebral compression fractures or VCFs). Left untreated, these VCFs create a curvature of the spine, sometimes referred to as “dowager’s hump.” Over time, this curvature can become more pronounced, painful and debilitating.

Q: What are the symptoms of a VCF?

Most VCFs have a gradual onset and are unrelated to specific injury or trauma. Fractures can result from normal activity such as bending over to pick up something or carrying a bag of groceries. The onset of pain ranges from sudden and severe to persistent and dull. The fact that symptoms of a VCF can be easily confused with other back problems underscores the importance of obtaining a correct diagnosis and receiving treatment.

Q: What happens to you if you have a spinal fracture?

The pain and the unnatural spinal alignment associated with VCFs may significantly affect the quality of life, making it difficult to walk, eat, and sleep. The occurrence of one

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fracture also greatly increases the risk of a second fracture. One fracture is sufficient to affect how weight is distributed through the spine, thus placing higher than normal stress on the front of the spine which contributes to the risk of future fractures. In addition, VCFs may affect survival. One recent study determined that patients with VCF had an overall mortality rate that was approximately twice that of matched control groups. The mortality rate is about 20% at 1 year and 30% at 2 years after diagnosis!

Q: What options are there if I have a spinal fracture?

Traditional treatments for spinal fractures include

non-operative measures consisting of extended bed rest, pain medication, and back braces, all of which can relieve pain over time. However, pain relief may not occur for prolonged periods of time, and the pain may sometimes persist for more than a year. Open surgery is also an option, but it is more invasive than non-surgical management and is typically reserved for patients with neurological complications. Kyphoplasty is a relatively new and minimally invasive procedure designed to treat the fracture.

Q: What are the potential benefits of kyphoplasty?

Kyphoplasty has been shown to achieve the following benefits:

- Significant reduction in back pain—
- Significant improvement in quality of life—
- Significant reduction in number of days per month that a patient remains in bed—
- Significant improvement in mobility—
- Improved ability to perform daily activities, such as walking, hobbies and work—
- Significant reduction in number of days where pain interfered with daily activities—

Q: How is kyphoplasty performed?

Kyphoplasty is a minimally invasive treatment that is performed through an incision that is only a few millimeters in length. With a hollow instrument, the spine specialist creates a small pathway into the fractured bone. A small, orthopaedic balloon is guided through the instrument into the vertebra. The balloon is then inflated to create a cavity and to gently elevate the bone fragments in an attempt to return them to the correct position. The balloon is deflated and removed, leaving a void (cavity) within the vertebral body. The cavity is then filled with a special cement to support the surrounding bone and prevent further collapse. The cement forms an internal cast that holds the vertebra in place. The procedure is typically performed under

general anesthesia and usually takes less than one hour per fracture treated. An overnight hospital stay is generally required.

Q: What are the advantages of kyphoplasty over non-operative treatment?

Non-operative treatment of VCFs can lead to prolonged periods of pain with significant impairments in mobility, independence, quality of life, and survival. An international, multicenter, randomized comparison of balloon kyphoplasty and non-operative management in patients with VCFs was recently conducted. When compared to non-surgical management, balloon kyphoplasty demonstrated superior outcomes in pain, function, and quality of life with no difference in serious adverse events. Kyphoplasty risks are minimal, but should be discussed with your physician.

Q: What is the utility and cost-effectiveness of kyphoplasty for the treatment of vertebral fractures?

With increasingly limited health-care resources, it is important to evaluate the cost-effectiveness and utility of surgical interventions. A prospective study of patients undergoing kyphoplasty for VCFs was recently conducted. Quality of life data was collected and analyzed to determine the average gain in Quality Adjusted Life Years (QALYs) after kyphoplasty. Cost data for kyphoplasty was then utilized to calculate the average cost per QALY. The cost per QALY for kyphoplasty was found to be comparable to hip replacement surgery and much less than cardiac bypass surgery.

Q: What is the difference between vertebroplasty and kyphoplasty?

Both kyphoplasty and vertebroplasty treat fractures of the spine with injection of cement into vertebrae that have experienced compression fracture. In **kyphoplasty** a balloon is inserted into the vertebral body and gently inflated to create a cavity and attempt to restore shape and height to the fractured bone before the bone cement is injected. This allows the injection of higher viscosity cement under lower pressure. In **vertebroplasty**, the bone cement is directly injected into the broken areas of bone, and no attempt is made to create a cavity or to restore the former height of the bone. Several studies have shown other safety advantages of choosing kyphoplasty to treat compression fractures, including fewer health complications. Be sure to discuss your treatment options and concerns with your physician.

