

## Relieving pain, restoring posture & protecting patients' physical health with minimally invasive kyphoplasty

Kyphoplasty is a minimally invasive back surgery used to treat vertebral fracture. Kyphoplasty can stop the pain associated with the fracture, stabilize the vertebra and restore the vertebral body height to normal or near-normal.

Vertebral compression fractures (VCFs) are both common *and* serious. Osteoporosis alone accounts for one VCF every 45 seconds in this country. Whether due to osteoporosis, cancer or other conditions, VCFs can be painful. If left untreated, they can have dramatic adverse effects on the patients' overall health, well-being and quality of life.

According to *The Journal of Imaging Technology Management*, 40% of women over the age of 50 are at risk for fracture at some time in their life, typically due to osteoporosis. Vertebral fractures are common in persons with osteoporosis and can be life-threatening.

### A very short list of symptoms

The most common symptom of VCF is pain, which is sufficiently harmful to lifestyle and general health. At the same time, the systemic nature of low bone mass in osteoporosis or osteopenia can leave many patients with multiple VCFs. This can shorten the spine and angle it forward to cause kyphosis. Over time, kyphosis' hunchbacked posture can compress the lungs and abdomen and cause a variety of other complications, including:

- *Reduced mobility & activity*
- *Impaired pulmonary function*
- *Sleep disorders*
- *Decreased appetite*
- *Decreased quality of life*
- *Isolation & depression*
- *Increased risk of premature death*

### Two MIS treatment options

Using the latest minimally invasive treatment, known as *kyphoplasty or balloon kyphoplasty*, we percutaneously insert an orthopedic balloon into the vertebral body and inflate it until the vertebra is restored to its proper height and angle. The incision required to insert the instrument and balloon is typically about 1/3 of an inch or smaller.

Once the vertebral height is restored, the balloon is deflated and removed. After deflating the balloon, we inject bone cement into the cavity, stabilizing the fracture and forming an internal cast that holds the vertebra in place.

This procedure has been used worldwide to treat nearly 200,000 spinal compression fractures since 1998. Multiple studies have shown that kyphoplasty, or balloon kyphoplasty, is successful at correcting vertebral deformity and height, reducing pain significantly, improving quality of life and the ability to perform daily activities.

As a board-certified neurosurgeon, I have probably performed more minimally invasive spine surgeries than any other area physician. As a

neurosurgeon, I am highly trained and experienced in all spine procedures, and spine surgery makes up about 70% of my training and professional experience.

For patients with vertebral compression fractures, my mission is to help them get out of pain using today's most advanced and most effective treatments.

### Complication rates & future fractures

Balloon kyphoplasty is minimally invasive and has a very low complication rate. In balloon kyphoplasty, orthopedic balloons gently inflate and elevate the fractured vertebra to return it to its correct position. The procedure takes up to one hour per fracture level treated. It can be done on an inpatient or outpatient basis, depending on the patient's overall state of health and needs. This is determined based on medical necessity.

It is currently not known whether kyphoplasty or balloon kyphoplasty will increase either the number or the likelihood of fractures at adjacent levels of the spine. Bench studies on treated bone reveal that PMMA does not change bone stiffness. But, at this writing, human studies have not been done.

### Candidates for kyphoplasty

Kyphoplasty is most successful with patients who have diminished bone strength. Typically, these patients

present with osteoporosis, or age-related bone loss, although some younger people with conditions that affect their bone strength may also benefit from kyphoplasty. Steroids, for example, can weaken the bones of young people and predispose them to compression fractures.

Kyphoplasty cannot correct an established spinal deformity. Some patients with osteoporosis are not candidates for this treatment, either.

The most likely candidates are patients with painful symptoms or spinal deformities caused by *recent* osteoporotic compression fractures. The procedure should be performed no later than 8 weeks post-fracture to achieve the greatest restoration of full vertebral height and maintain posture.

### Risks & complications

Osteoporosis is a chronic, progressive disease. Patients who have sustained fractures from osteoporosis are at an increased risk for additional fractures due to the loss of bone strength and density caused by osteoporosis.

On the other side, kyphoplasty has some general surgical risks of its own, including negative reaction to anesthesia or infection. Other risks specific to kyphoplasty include:

- *Nerve damage or spinal cord injury due to malpositioned instruments*
- *Nerve injury or spinal cord compression due to PMMA leakage into epidural space or veins*
- *Allergic reaction to contrast solution used to image the balloon as it inflates*

### Potentially great benefit for patients

Patients who undergo either kyphoplasty or balloon kyphoplasty often experience immediate relief from their spinal fracture pain. Others may need a day or two for the pain to diminish. Most patients experience pain relief and improved function within two weeks after surgery. Most patients return to their usual daily activity within a few days of a procedure, though all

are cautioned to avoid strenuous lifting for up to six weeks post-surgery.

### Conclusions

Older adults are more prone to VCF, as are those diagnosed with osteoporosis or osteopenia.

Diagnosis and treatment of VCF is a mainstay of my practice, part of a skill set acquired years ago during my training at the Mayo Clinic. I believe it is very important that VCF patients be seen as early as possible – certainly inside of two months – so that they can be appropriately treated and, ideally, continue to lead satisfying lives. This is one reason why physicians across Milwaukee, Waukesha and neighboring Wisconsin communities so often refer their VCF patients to me.

Please consider utilizing me as just such a resource for your own VCF patients. You and they will appreciate my accessibility and eagerness to help – not just with diagnosis and treatment but with answers to even their most vexing questions about their condition. I'm very sure that your patients will find my help invaluable – and that they will be so satisfied with the attention they receive that they will return to you happy and more willing than ever to continue entrusting you with their ongoing care.

For further information about VCF and kyphoplasty, my approaches to surgery and information about my other neurology-specific surgical services, please call me at (414) 385-7150.



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