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WHAT IS A VERTEBRAL COMPRESSION FRACTURE?

The spine is made up of a stack of bones called vertebrae. A vertebral compression fracture means that one or more of these bones has collapsed due to a break.

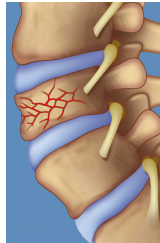
The most common cause of vertebral compression fracture is osteoporosis. With the bones weakened due to osteoporosis, fractures can occur during normal activities or minor accidents.

Other causes for vertebral compression fractures include:

- Hematologic diseases (multiple myeloma and leukemia)
- Metastatic disease to the spine from cancer
- Severe injury (car accident, ski injury, horse riding)

Even though many vertebral compression fractures occur silently, without any significant pain, they can often become painful and disabling. Typically, the main clinical symptoms of vertebral fractures include one or more of the following:

- Sudden onset of back pain
- Limited spinal mobility
- Kyphotic deformity of the spine ("hunchback")
- Loss of height



Due to pain and spine deformity, vertebral compression fractures may lead to breathing problems, prolonged inactivity, muscle weakness, and ultimately loss of independence.

OVERVIEW OF TREATMENTS

Standard treatments for a vertebral fracture include pain medications, a brief period of bed rest followed by progressive mobilization, and the use of a brace for support.

If the patient has any of the following, however, a minimally invasive procedure known as vertebroplasty or kyphoplasty may be the best option:

- Severe pain that does not improve over a number of weeks
- Severe pain that results in significant limitation of normal daily activities
- Severe pain that requires hospitalization
- A fracture that is getting worse

Vertebral compression fractures are a common cause of back pain, but with today's minimally invasive surgical procedures they're relatively easy to treat.

VERTEBROPLASTY/KYPHOPLASTY

Vertebroplasty and kyphoplasty are image-guided procedures performed in an operating room with x-ray equipment. Both vertebroplasty and kyphoplasty are successful about 80 to 90% of the time in relieving the pain of fractured vertebrae. Both procedures involve the injection of a polymer ("bone cement") into the fractured bone. This not only provides pain relief, but also stabilizes the bone and prevents progression of the fracture and associated kyphosis, an abnormal curvature of the spine.

Both procedures are performed with the patient in a prone position (face down). We typically perform these procedures with local anesthesia and sedation ("twilight" anesthesia, similar to colonoscopy). Only rarely is general anesthesia required. Both procedures involve the careful advancement of one or two needles under x-ray guidance into the fractured vertebra through very small incisions in the back. The x-ray guidance is essential to allow us to position the needles safely in the bone while avoiding nerves and other sensitive parts of the body.

After the x-ray confirms good needle placement, the surgeon injects bone cement into the fractured vertebra. The cement hardens in a few minutes, providing immediate stability to the bone and relief of pain. Kyphoplasty, also referred to as "balloon vertebroplasty," differs slightly from vertebroplasty, as it involves the extra step of balloon inflation in the fractured bone in order to correct the abnormal wedging. The balloons are then removed and the cement is infused as in a vertebroplasty.

After the procedure the patient remains in the recovery area for two to three hours before being discharged to home. Rarely is an overnight stay required.



RECOVERY

Elimination or reduction of pain is reported within a few days, and typically within one week. Patients can gradually return to their normal daily activities, although strenuous activities (such as heavy lifting) should be avoided for at least a few weeks. Patients should also see the appropriate physician to begin or review their treatment plan for osteoporosis, including medications to prevent further bone loss.

FRACTURES RELATED TO METASTATIC DISEASE

For fractures related to metastatic disease, we offer an additional procedure called ablation, which is performed in conjunction with vertebroplasty or kyphoplasty. The ablation procedure is done via the same needles used for vertebroplasty or kyphoplasty and maximizes the pain relief specifically for fractures related to metastatic disease.

OUR EXPERIENCE

To date we have treated thousands of vertebral compression fractures with excellent results. In our hands these procedures are extremely safe. We recommend the vertebroplasty and kyphoplasty procedures only to carefully selected patients, and as a result we have very high success rates.