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Kyphoplasty: Spinal Surgery for Fractured Vertebrae

In older people with osteoporosis (soft or brittle bones), the bones of the spine – called the vertebrae – sometimes fracture or collapse. This causes pain and a "hunchback" appearance that get worse as time goes on. Certain forms of cancer also weaken the vertebrae and cause the same problems. A relatively new treatment for these conditions is a type of spinal surgery called "kyphoplasty" (ki'-fo-plass-tee).

What is the surgical procedure?

Kyphoplasty only requires two small incisions in the back, so usually you can go home the same day. You may receive a general anaesthetic, which means that you will be completely unaware of what's going on. Or you may have an intravenous local anaesthetic that numbs just the area of the surgery. Your surgeon or the anesthesiologist will discuss with you which is best in your case.

Since the surgery is performed on your back, you will lie facedown on the operating table. The orthopaedic surgeon will make two small cuts, insert tubes through the openings, and then push tiny balloons through the tubes into the fractured vertebrae. It is possible to do this without larger incisions because the surgeon will be following the progress of the balloons on a bedside x-ray machine. Once the balloons are in place, they are gently inflated so they will push the bones back toward their normal height and shape. Pushing the vertebrae up will leave cavities within the bones, so after removing the balloons, the surgeon will fill the cavities with bone cement. The tubes come out as soon as the cement has hardened, which takes about 15 minutes. The incisions are so small, only a single stitch is needed to close them.

After kyphoplasty, you will not have any restrictions on what you can do. Your physician will encourage you to resume all your normal activities as soon as possible.

What results can I expect after kyphoplasty?

Early results on other patients have shown that kyphoplasty is a safe and effective method of reconstructing and stabilizing collapsed vertebrae in the spine that were caused by osteoporosis or cancerous tumors. Most patients have excellent pain relief and straighter backs, which may result in added height. Well over 95 percent of patients rate their treatment as successful and report that they are able to return to all their pre-fracture activities. Most patients do not need physical therapy or any other form of rehabilitation, though they should take bone-strengthening medication during treatment.

A very few patients complain of persistent pain after kyphoplasty. Sometimes the area is painful because the tissues have been irritated by the procedure. If this is the case, the pain should get better within two weeks. Other patients may have underlying degenerative arthritis in the spine. With these patients, the usual treatment is medication and an ongoing exercise program. If you have persistent pain after kyphoplasty, talk to your doctor about what can be done to relieve it.

Kyphoplasty has to be performed immediately or soon after spinal bone collapse or fracture. It does not work on old, healed fractures.

If you have severe osteoporosis, spinal bones that were not treated could collapse or fracture at other levels of the spine. If this happens, you can have another kyphoplasty to treat these bones. However, kyphoplasty tends to help prevent further fractures by keeping the spine aligned in its proper upright position.

What are the risks with kyphoplasty?
The use of anaesthetics carries some risks in all surgeries. Just what these risks are depends on your overall health.

There is a slight possibility that bone cement will leak outside the vertebrae. This happens in less than 10 percent of patients, and in most cases, it does not cause any problems. Very rarely, the cement may irritate or damage the spinal cord or nerves, which can cause pain and/or altered sensation. Though it is seldom required, surgery could be necessary to relieve this problem. In one case in 10,000, the patient develops paralysis as a result of leaking cement.

There is also an extremely small chance that cement could travel to the lungs and an even smaller chance that the cement block could cause infection at the time of surgery or even years after surgery. These complications would be treated with medications and/or surgery.

Who should not have kyphoplasty?
Kyphoplasty is recommended for older patients with vertebral collapse or fracture due to osteoporosis or tumor only. It is not suitable for:

- patients with young, healthy bone
- patients who receive fractures or collapse of the vertebrae due to accidents or injury
- patients with spinal curvature, i.e., scoliosis or kyphosis, due to causes other than osteoporosis
- patients with spinal stenosis or herniated discs with nerve or spinal cord compression and loss of neurological function

For more information:

Osteoporosis

National Osteoporosis Foundation