PROCEDURE

Kyphoplasty

Kyphoplasty uses a balloon and bone cement to stabilise a painful collapsed spinal bone.

PURPOSE
Stabilise a painful vertebral compression fracture

PROCEDURE TYPE
Therapeutic, minimally invasive image-guided procedure

WHERE IT IS DONE
Operating theatre or interventional radiology suite

ANAESTHESIA
Local with sedation, or general anaesthesia

HOW LONG IT TAKES
About 30 to 60 minutes per treated vertebra

PREPARATION
Fasting and review of blood-thinning medicines

RECOVERY
Same day or overnight; no driving until cleared

MAIN RISKS
Cement leakage, infection, bleeding, nerve injury, embolism

RESULTS
Pain response often clear within hours to several days

Overview

Kyphoplasty is a minimally invasive procedure used to treat certain painful compression fractures of the spine. A compression fracture happens when a vertebra, one of the bones forming the spine, weakens and partly collapses.

During kyphoplasty, a clinician places a small balloon inside the fractured vertebra using X-ray guidance. The balloon creates a space and may restore some of the bone's height. Bone cement is then placed into that space to stabilise the fracture.

Kyphoplasty does not treat osteoporosis, which is a common cause of compression fractures. It also cannot guarantee that lost height or spinal shape will be restored. Its main aim is to reduce pain and help you move more comfortably.

Why the procedure is performed

Kyphoplasty may be considered when a recent or still-unhealed compression fracture is causing substantial pain and limiting daily activity. Imaging, such as an MRI or CT scan, is used to confirm which vertebra is fractured and whether it is likely to be the source of pain.

The procedure is most often used for fractures caused by osteoporosis. It may also be used for selected fractures related to cancer, such as myeloma or cancer that has spread to a vertebra.

Kyphoplasty is usually considered after simpler treatments have not provided enough relief, or when severe pain makes movement and recovery difficult. The expected benefit must be weighed against the risks and the possibility that pain could have another cause.

Who should and should not have it

You may be offered kyphoplasty if you have a painful vertebral compression fracture confirmed on imaging, especially when pain remains severe despite appropriate non-surgical care.

It is not suitable for every spinal fracture. The procedure may be avoided when:

Treatment may be delayed while an infection, uncontrolled medical condition, or blood-clotting problem is addressed. New weakness, numbness, or loss of bladder or bowel control usually requires urgent assessment for spinal cord or nerve pressure rather than routine kyphoplasty.

- The fracture is old, fully healed, or not painful
- Your pain appears to come from another condition
- The vertebra is not safely reachable with a needle
- Bone or tumour is severely pressing on the spinal cord
- The spine is unstable and needs open surgery
- You have an infection in the blood, spine, or treatment area
- A bleeding disorder or blood-thinning medicine makes bleeding unsafe
- You cannot safely receive the planned anaesthesia
- You have a serious allergy to a required material

How to prepare

The treating facility's own instructions take priority because preparation depends on your anaesthesia, medical conditions, and medicines.

Tell the team about all prescription medicines, over-the-counter products, supplements, allergies, and previous reactions to anaesthesia or contrast material. Blood-thinning medicines may need adjustment, but do not stop them unless the treating team gives you specific instructions.

You may need blood tests to check blood counts and clotting. Your imaging will also be reviewed to confirm the fracture level and plan the safest needle route.

If sedation or general anaesthesia is planned, you will be told when to stop eating and drinking. Arrange for a responsible adult to take you home and, if requested, stay with you afterward.

Wear comfortable clothing and leave jewellery and valuables at home. Tell the facility if you develop a fever, infection, new illness, or pregnancy before the procedure.

What happens during the procedure

You will usually lie face down on a padded table. The team monitors your blood pressure, heart rate, breathing, and oxygen level.

You may receive local anaesthetic to numb the skin and deeper tissues, together with medicine that makes you relaxed and sleepy. Some procedures use general anaesthesia, meaning you are unconscious.

Using continuous or repeated X-ray images, the clinician guides one or two hollow needles into the fractured vertebra. A small balloon is passed through each needle and carefully inflated. This creates a cavity and may partly lift the collapsed bone.

The balloon is removed. Bone cement is then injected while the team watches its position on X-ray. The cement hardens quickly and supports the weakened vertebra.

The needles are removed, and the small skin openings are covered with dressings. Stitches are usually unnecessary. More than one vertebra may be treated during the same session, which can make the procedure longer.

Recovery and what to expect afterward

You may have soreness where the needles entered, along with mild bruising. This often improves over several days. Pain from the fracture may improve within hours, but it can take several days to judge the full effect. Some people have limited or no relief.

You can usually drink and eat once you are fully awake, unless your team advises otherwise.

You may need to remain lying down for a short period. The team will then help you sit, stand, and walk safely. Follow instructions about lifting, bending, exercise, wound care, and any brace. Gradual movement is usually encouraged.

Do not drive yourself home. Sedation, anaesthesia, pain, and pain medicine can affect your reactions. Many facilities advise avoiding driving for at least 24 hours, but follow the restriction given to you.

People with desk-based work may return within a few days. Work involving lifting, repeated bending, or physical labour may require more time and specific clearance.

Risks and possible complications

Kyphoplasty is performed through small skin openings, but it still has risks.

Bone cement can leak outside the vertebra. Many leaks cause no symptoms, but cement can occasionally irritate or compress a spinal nerve. Cement entering a blood vessel can travel to the lungs and affect breathing or circulation.

Other possible complications include:

People with osteoporosis remain at risk of future fractures whether or not they have kyphoplasty. Research has not fully settled how much the procedure itself affects the chance of a nearby fracture.

- Bleeding or a collection of blood near the treatment area
- Infection of the skin, soft tissue, bone, or blood
- New or worsened numbness, weakness, or nerve pain
- Injury to nearby nerves, blood vessels, or tissues
- Reaction to anaesthesia, medicines, or procedure materials
- Failure to improve pain
- Further collapse or a new fracture in another vertebra

Results and follow up

Before you leave, the team will check your pain, movement, leg strength, and puncture sites. You will receive instructions about dressings, medicines, activity, and follow-up.

Pain relief may be noticeable the same day or develop over several days. Improvements in walking and daily activity may follow as pain decreases. Persistent pain does not always mean the procedure failed; muscles, joints, nerves, or another fracture may also contribute.

Routine follow-up may be arranged within several weeks. Additional imaging is not always needed, but it may be ordered if pain continues or new symptoms develop.

Kyphoplasty stabilises the treated fracture but does not strengthen the rest of your skeleton. Follow-up may therefore include assessment and treatment for osteoporosis, fall prevention, nutrition, and suitable weight-bearing activity.

Alternatives

The main alternative is non-surgical care. This avoids cement and procedure-related risks, but pain may take weeks or months to settle and some vertebral collapse may remain.

Non-surgical options can include:

Vertebroplasty is another image-guided procedure. Cement is injected without first using a balloon. It may stabilise the fracture, but it generally offers less opportunity to restore vertebral height. Evidence about which cement procedure gives better pain relief in a particular person is not conclusive.

Open spinal surgery may be needed when there is major instability, deformity, or pressure on the spinal cord or nerves. It can decompress nerves and provide stronger fixation, but it involves larger incisions and a longer recovery.

- Pain medicine, which may help movement but can cause side effects
- Short-term activity adjustment, followed by gradual safe movement
- A spinal brace, which provides support but may be uncomfortable
- Physical therapy, usually introduced as pain and fracture stability allow
- Osteoporosis treatment, which lowers future fracture risk but does not immediately repair the current collapse

When to call your healthcare team

Contact the treating team promptly for increasing pain that is not controlled by the agreed plan, fever, wound redness, swelling, drainage, or new numbness or weakness.

Seek emergency help for:

Mild puncture-site soreness and bruising can be expected. Questions about dressings, activity, medicine, or slower-than-expected improvement can usually be handled through routine follow-up.

- Sudden difficulty breathing, chest pain, fainting, or coughing blood
- New severe leg weakness or inability to walk
- Loss of bladder or bowel control
- Numbness around the genitals, buttocks, or inner thighs
- Rapidly increasing back swelling or uncontrolled bleeding

Common questions

Will I be asleep?

You may be awake but relaxed under local anaesthetic and sedation, or fully asleep under general anaesthesia. The plan is based on the number of vertebrae, your health, and the facility's approach.

Can I drive home?

No. Arrange for someone to take you home. Do not drive again until the facility's restriction has passed and you can move comfortably without impairing medicines.

How painful is kyphoplasty?

Numbing medicine and sedation or anaesthesia limit pain during the procedure. You may feel pressure. Soreness at the needle sites is common afterward, but severe or worsening pain needs review.

When will I know if it worked?

Some people notice relief within hours. For others, improvement becomes clearer over several days. Your follow-up will assess pain, movement, and daily function.

Will it straighten my spine?

The balloon may restore part of the vertebra's height, especially in a recent fracture. It cannot reliably reverse an established curved posture or return the bone to its original shape.

Can the fracture happen again?

The cement-stabilised area is unlikely to collapse in the same way, but other vertebrae can fracture. Managing osteoporosis and fall risk remains important.

Sources

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