

## Department of Medicine

# Vertebroplasty and balloon kyphoplasty

### What are these procedures?

Vertebroplasty is a medical procedure in which a fractured (broken) vertebra (back bone) is stabilised by injection of bone cement. Balloon kyphoplasty is similar except a balloon is used to try and restore the original shape of the fractured vertebra before the vertebroplasty procedure.

### Background

The bones in your spine are called vertebrae and the front part is called the vertebral body. A vertebral compression fracture (VCF) occurs when the vertebral body fractures and collapses. Vertebral fractures may occur due to a condition called osteoporosis.

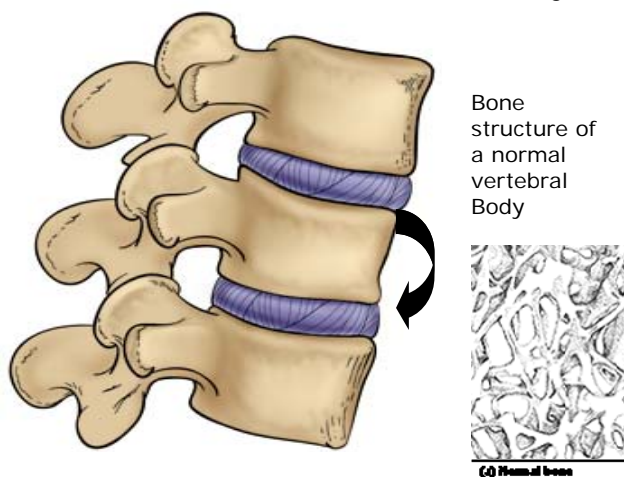


Figure 1 Normal vertebrae

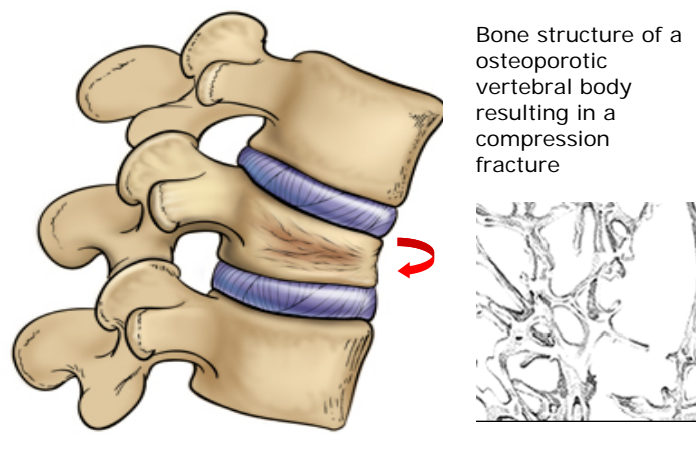


Figure 2 Compression fracture due to osteoporosis

Osteoporosis means "porous bones" and is a condition that affects the bones, causing them to become thin and weak making them more likely to fracture.

Osteoporotic fractures are common in the elderly and particularly in postmenopausal women, but can also be associated with other factors such as long-term treatment with steroids. Other causes of vertebral compression fracture include tumours affecting the spine.

## Reasons for having these procedures:



Vertebral compression fractures cause pain. They may also cause deformity, with increased spinal curvature leading to a hunched over appearance. This deformity itself can make further vertebral fracture more likely.

Figure 3: Curvature of the spine due to vertebral compression fractures

The aim of vertebroplasty is to reduce pain from vertebral fractures. Kyphoplasty may also reduce deformity and protect against new fractures.

## What will happen before your treatment?

- We will ask you for details of your medical history and carry out necessary clinical examinations, diagnostic imaging and investigations (blood tests) to make sure you are a suitable candidate for the procedure and to decide which vertebra should be treated.
- Please inform the Admissions Office (Tel No: 01223 217100) in advance if you are taking blood thinning agents (such as warfarin or heparin).

## Outline of the procedure

The procedure is usually performed under general anaesthesia. You will be positioned lying on your stomach on the x-ray table. A small nick is made in the skin on your back and a hollow needle is passed into the fractured vertebra. The cement is injected into the vertebral body under x-ray control. The needle is then removed and the small puncture wound covered with a plaster. The whole vertebroplasty procedure usually takes about one to two hours depending on the number of vertebrae being treated.

**Balloon kyphoplasty** is similar, except that a balloon is first inserted to expand the fractured vertebra and make space for the cement.

## Balloon kyphoplasty

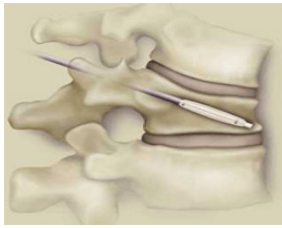


Figure 4 Small balloon inserted into the collapsed vertebral body

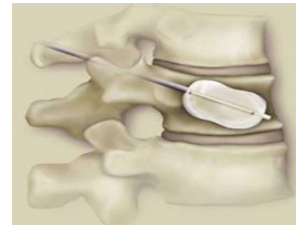


Figure 5 Balloon is carefully inflated to expand the fractured vertebral body

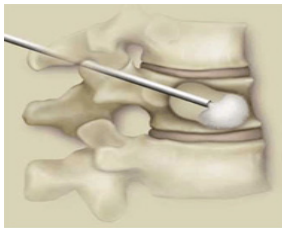


Figure 6 The cavity is then filled with bone cement

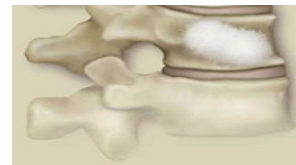


Figure 7 Cement in place to stabilise fractured vertebra

## After the procedure

You will usually be able to stand and walk after one hour and in most cases normal activities can be resumed within 24-48 hours.

- You may feel sore in your back where the needle was inserted for two to three days.
- Resume your regular medication but you may be able to reduce your painkillers
- Do not drive for 24 hours. You can go home with an adult, if the distance is short. Otherwise an overnight stay is advised.

## Risks

This procedure is generally well tolerated and safe, but complications may occur in a small proportion of patients.

- 1 in 10 patients may develop a cement leak.
- New fractures may occur in one in six patients.
- There is a small risk of infection in the vertebral body.
- Rarely, there may be damage to nervous structures in or around the spinal cord, which can cause pain for up to a few weeks.
- Very rarely, there may be lasting damage to the spinal cord which could cause paralysis.

## Who should I contact if I need advice after the procedure?

For further information please contact:

1) Dr Nick Higgins Consultant Radiologist  
Dept of Radiology, Box 219 Level 4, Cambridge University Hospitals NHS  
Foundation Trust, Addenbrooke's Hospital, Hills Road, Cambridge CB2 0QQ  
Tel: 01223 245151 Ext 2518/2778

or

2) Professor Juliet Compston  
Dept of Medicine, Box157 Level 5 Cambridge University Hospitals NHS Foundation  
Trust, Addenbrooke's Hospital, Hills Road, Cambridge CB2 0QQ  
Tel: 01223 336867

## Other contacts

Dr Adrian Crisp Secretary Tel: 01223 216254

Helpline for Osteoporosis 01223 217398



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For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169



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## Document history

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