

## **Vertebroplasty**

### **What is vertebroplasty?**

Vertebroplasty is an image-guided, minimally invasive, interventional therapy procedure where methylmethacrylate cement is placed into weakened or fractured bones of the spine (called “vertebra”) to support them. These bones may be weakened by osteoporosis or, less commonly, cancer or benign tumors. The cement is placed in the bone in hopes of eliminating or reducing the pain due to the weakened or broken bone.

Vertebroplasty can increase a patient's functional abilities, allow a return to the previous level of activity, and help prevent further vertebral collapse.

### **Who should undergo vertebroplasty?**

Typically, osteoporotic fractures occur in women older than 55. Men and younger patients with factors predisposing for low bone mineral density with similar fractures and presentation are also candidates for this procedure.

### **When should vertebroplasty be performed?**

Vertebroplasty is usually used to treat vertebral fractures after simpler treatment such as a back brace or pain medication have been ineffective, or once medications begin to cause other problems, such as stomach ulcers or fatigue.

Vertebroplasty can also be performed right away in patients who have severe pain requiring hospitalization or conditions limiting bedrest and pain medications.

### **How should I prepare for the procedure?**

Do not eat for at least six hours before the procedure. If you are diabetic, you should contact your doctor for instructions about regulating your blood sugar and medications. On the day of the procedure, you may take your usual medications (except blood thinners) with a small sip of water.

If you take blood thinning medications (aspirin, Plavix, Lovenox, Coumadin, heparin, and others), talk to the physician who prescribed these medications or let the physician performing the procedure know about these before the procedure. You will likely receive instructions on how to hold these medications.

### **What can I expect during the procedure?**

A nurse trained in conscious sedation will give you intravenous medication to help you stay relaxed, decrease your pain, and make you comfortable. The nurse will monitor your vital signs during the procedure. You will need to remain conscious and answer questions during the procedure for safety purposes.

Intravenous antibiotics may also be administered to help prevent infection.

You will lie on your stomach. The area around the painful part of the back will be cleansed with an antiseptic to decrease the chance of infection. The skin and the bone will be numbed with a local anesthetic.

The doctor then places needles through tiny incisions in the skin and into the vertebral body using fluoroscopy (x-ray) as guidance. Occasionally, computed tomography (CT) may be used to guide the procedure. The cement is then injected as a very thin paste through the needles placed inside the weakened bone. You may feel some pressure or mild discomfort during the injection. Once the cement is inside the bone it hardens after a few minutes.

After the procedure, you will be taken to a recovery area where you will lie on your back for about 1 hour to allow the anesthesia to wear off sufficiently and to let the cement harden before standing. When it is safe to do so, you may leave with someone who can drive you home.

### **How does this procedure help with pain?**

No one knows exactly how vertebroplasty reduces pain, but it likely helps in different ways. The cement supports the bone and prevents fracture pieces from rubbing together. The cement also helps bone not to collapse any further. Finally, during the hardening process, this material gives off heat which may "deaden" some nerve endings which are causing pain.

### **Can I still have this procedure if I have or am having radiation therapy or chemotherapy?**

Yes. In fact, these procedures are sometimes performed as part of a combined therapy for tumors in bone.

### **How long does the procedure take?**

Vertebroplasty usually takes less than two hours and may be longer if more than one fracture is being treated.

### **What are the risks of the procedure?**

Like any invasive procedure, there are complications which may occur infrequently during vertebroplasty:

- The cement is a foreign substance and every effort is made to keep the work environment sterile. An antibiotic may also be used to decrease the risk of infection. Infection remains a rare potential complication, however.

- Because of the close proximity of the vertebrae to the spinal cord, nerve or spinal cord injury is a potential but rare complication.
- Bleeding or injury to an artery or vein is rare, but you should inform your doctor if you are taking blood thinners.
- Temporary lowering of blood pressure may occur and could be a response to the cement chemicals or the sedative medication.
- Floating cement particles (embolization) in the blood stream is a common occurrence with few adverse consequences though rare bad outcomes have been reported in the past.
- For thoracic procedures, puncture of the lining around the lung is rare but possible and will require observation in the department and possible additional procedures.

An extremely rare complication (less than 0.1% of all cases performed) is death, presumably from reaction to the cement or massive embolization of the cement or bone marrow elements.

Infrequently, the procedure paradoxically results in increased bone or back pain. This situation would lead us to look for additional fractures or other causes of back pain. Occasionally, a fracture of the vertebrae adjacent to the treated one may develop which may require further treatment.

Finally, conscious sedation is usually very safe. However, if too much sedating medicine is given, problems with breathing may occur. All steps, including vital sign and oxygenation monitoring, are taken to insure safe sedation, and reversal agents are kept on hand.

Tell your doctor about any allergies you have.

### **Is the bone cement harmful?**

No, the same bone cement has been used in joint replacements of the hip and knee for many years. Sterile barium, an inert substance, is added to the cement so it can be viewed on x-ray.

There are no known long term risks of this cement when placed within a vertebral body. Patients can move normally with cement in the vertebral body and will not have any mobility impairment associated with the cement.

### **What happens after the procedure?**

You will be sent home with a prescription for pain medicine, if needed, and instructions about post procedural care. A nurse will call you in a few days after the procedure to see how you are doing.

You will probably be able to bear weight and will likely have a marked decrease in your pain immediately after the procedure. Conversely, it may take up to 5 days or even longer for the pain to decrease. For two or three days afterward, you may feel a bit sore at the point of the needle insertion. You can use an icepack, over-the-counter analgesics, or prescribed pain medications to relieve any discomfort.

### **What about other medications I am taking?**

You should talk to the doctor who prescribed any blood thinning medication before resuming it.

A steroid is commonly given during the procedure to prevent inflammation. If you are diabetic, increases in your blood glucose may occur for several days and you should monitor this closely. Talk to the doctor who treats your diabetes before changing any of your medications, though.

You may continue taking your other pain medications after the procedure, if necessary.

### **How effective is vertebroplasty?**

On average, 70-90% of patients get pain relief from the procedure.

Approximately two-thirds of patients are able to lower their doses of pain medication significantly.

About 75% of patients regain lost mobility and become more active. This reduces the risk of pneumonia, helps build muscle strength, and can help improve bone mineral density.

### **Does this procedure cure osteoporosis?**

Unfortunately, the procedure does not cure osteoporosis. **It is very important that all patients with osteoporotic compression fractures be evaluated by a physician for bone mineral density and for potential medical therapy to prevent further bone mineral loss and subsequent fractures.**

### **Will my health insurance plan pay for a Vertebroplasty?**

Generally, most insurance policies (including Medicare) will pay for this procedure for persons who are diagnosed with vertebral compression fractures whose pain is refractory to more conservative therapy.

### **Where can I get additional information regarding this procedure?**

Ask your doctor or contact **Orthopedic Imaging Center** at **210-617-9100**.

To schedule, please call our offices: 210-617-9000