



# Percutaneous Vertebral Augmentation vs. Percutaneous Vertebroplasty

A Coding and Billing Reference Guide

The information presented in this guide is specific to the stated procedures, not to a specific product or technology, based on the guidelines and references cited. No correlation to any one specific product should be assumed.

## What is percutaneous vertebroplasty?

In vertebroplasty, the material is placed directly into the fracture site to attempt to stabilize the site. This procedure may involve no manipulation or only external reduction by extension, i.e., physical manipulation of the patient when placing the patient on the operating table before the material is injected into the fracture site.

FDA, CDRH. Guidance for Industry and FDA Staff. Clinical Trial Considerations: Vertebral Augmentation Devices to Treat Spinal Insufficiency Fractures, October 24, 2004.

Percutaneous vertebroplasty describes a procedure in which a sterile biomaterial such as methyl methacrylate is injected from one side or both sides into the damaged vertebral body to act as a bone cement to reinforce the fractured or collapsed vertebra.

CPT Assistant, October 2006, pages 13-14

In a vertebroplasty procedure, a bone biopsy needle is directed into the anterior third of the vertebral body, and cement is injected until the material reaches the posterior fourth of the vertebral body.

RBRVS Data Manager 2009, American Medical Association

## What is percutaneous vertebral augmentation?

Kyphoplasty is so named because it involves the attempt to reduce the kyphosis that results from vertebral body collapse. In kyphoplasty, a surgical instrument is used to reduce the collapsed vertebral body toward its original shape. The material is then placed in the vertebral body and the instrument removed, leaving the material in place to stabilize the reduction.

FDA, CDRH. Guidance for Industry and FDA Staff. Clinical Trial Considerations: Vertebral Augmentation Devices to Treat Spinal Insufficiency Fractures, October 24, 2004.

Vertebral augmentation is the act of cavity creation with fracture reduction along with the attempt to restore vertebral body height and alignment. Balloon catheters called "tamps" are inserted into the vertebra and inflated. The tamp creates a void in the soft trabecular bone and restores vertebral alignment. The balloon is removed, and cement is injected.

Coder's Desk Reference for Procedures, Ingenix, 2007

The procedures described by codes 22523–22525 are performed under either local or general anesthesia and involve percutaneous access into the vertebral body by introduction of a working cannula. This is followed by the insertion of a mechanical device (e.g., expandable jack, curved tamp, expandable balloon) containing radiopaque dye to create a cavity or void, reduce the end plate fractures (i.e., restore the height, elevate the collapsed end plates), and restore overall spinal alignment from within the vertebral body. The final step involves the vertebral body augmentation and internal stabilization by introducing or filling the resultant cavity with bone graft, enhanced bone graft slurries, allograft bone, polymethylmethacrylate, or bone graft substitute at the physician's discretion.

CPT Assistant, October 2006, pages 13-14

This procedure (kyphoplasty) involves placing a narrow tube that creates a path through the back into the fracture area through the pedicle of the involved vertebrae under general anesthesia. A balloon or other device such as a bone tamp is inserted through the cannula and inflated, leaving a cavity into which a cement-like material (polymethylmethacrylate) is introduced. The goal is that by inflating the balloon, the height of the vertebrae will be at least partially reestablished.

AHA Coding Clinic, Fourth Quarter, 2004

## How are vertebroplasty and vertebral augmentation different?

The vertebral augmentation procedure differs from vertebroplasty in that it creates a cavity and it has the added advantage of attempting to restore vertebral body height. In contrast to just using a small bone biopsy needle to inject cement as in vertebroplasty, the following are sequentially placed: a needle, a guidewire, a cannula, and a drill. At this point the mechanical cavity creation device is placed. The mechanical cavity creation fracture reduction device is gradually deployed to create a cavity. This cavity creation device is not the needle, cannula, or drill. When this device is removed, it leaves a well-formed cavity ready to receive injected cement.

RBRVS Data Manager 2009, American Medical Association  
CPT Assistant, October 2006, pages 13-14

A cavity or void must be created prior to the injection of cement to report vertebral augmentation.

AHA Coding Clinic Second Quarter, 2008

### Key Requirements to Code for Vertebral Augmentation

1. Use of a mechanical device to create a cavity or void (the cavity creation device is not the needle, cannula, or drill) prior to the injection of cement, bone graft, or bone graft substitute; and
2. An attempt to restore vertebral body height (i.e., reducing the end plate fractures, elevating the collapsed end plates) and overall spinal alignment from within the vertebral body.

### 2010 Medicare Rates for Percutaneous Vertebral Augmentation vs. Percutaneous Vertebroplasty

#### Physician Coding and Payment

CPT	Description	Total RVUs	Payment*
<b>Percutaneous vertebroplasty, one vertebral body, unilateral or bilateral injection</b>			
22520	Thoracic	14.37	\$519
22521	Lumbar	13.57	\$490
22522	Each additional thoracic or lumbar vertebral body	6.35	\$229
72291-26	Radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under fluoroscopic guidance	1.96	\$71
72292-26	Radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under CT guidance	2.06	\$74
<b>Percutaneous vertebral augmentation, including cavity creation (fracture reduction and bone biopsy included when performed) using mechanical device, one vertebral body, unilateral or bilateral cannulation (e.g., kyphoplasty)</b>			
22523	Thoracic	15.76	\$569
22524	Lumbar	15.15	\$547
22525	Each additional thoracic or lumbar vertebral body	7.11	\$257
72291-26	Radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under fluoroscopic guidance	1.96	\$71
72292-26	Radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under CT guidance	2.06	\$74

\*Source: CY2010 Medicare Physician Fee Schedule. Federal Register, November 25, 2009. No geographic adjustment. Payment determined using the conversion factor cited in the Department of Defense Appropriations Act of 2010.

### Inpatient Facility Coding and Payment

ICD-9-CM Procedure Codes:

- 81.65 Percutaneous vertebroplasty
- 81.66 Percutaneous vertebral augmentation

### Medicare Severity-Diagnosis-Related Groups (MS-DRGs):

MS-DRG	Description	Relative Weight*	Payment*
477	Biopsies of musculoskeletal and connective tissue w/MCC	3.1343	\$17,716
478	Biopsies of musculoskeletal and connective tissue w/CC	2.1321	\$12,051
479	Biopsies of musculoskeletal and connective tissue w/o CC/MCC	1.5121	\$8,547
515	Other musculoskeletal system and connective tissue O.R. procedure w/MCC	3.0414	\$17,191
516	Other musculoskeletal system and connective tissue O.R. procedure w/CC	1.8355	\$10,375
517	Other musculoskeletal system and connective tissue O.R. procedure w/o CC/MCC	1.3640	\$7,710

\*Source: FY2010 Medicare Hospital Inpatient Prospective Payment System, Final Rule. Federal Register, August 27, 2009 and October 5, 2009. Assumes payment for a hospital with a wage index and geographic adjustment factor of 1.000. CC-Complications and/or comorbidities, MCC-Major complications and/or comorbidities.

Under the MS-DRG system, both percutaneous vertebral augmentation and percutaneous vertebroplasty group to the same DRG if all other factors remain the same (e.g., diagnosis codes). Cases may be assigned to a number of MS-DRGs other than those listed above, based on a particular patient's condition.

Note: In the hospital inpatient setting, vertebral biopsy is not an inherent part of the vertebroplasty or vertebral augmentation procedure and should be coded separately if performed. Assign ICD-9-CM code 77.49, biopsy of bone, other, along with the procedure codes listed above.

AHA Coding Clinic Third Quarter, 2006

### Outpatient Facility Coding and Payment

CPT	Description	APC	Hospital Outpatient Payment*	ASC Payment*
<b>Percutaneous vertebroplasty, one vertebral body, unilateral or bilateral injection</b>				
22520	Thoracic	0050	\$2,142	\$1,275
22521	Lumbar	0050	\$2,142	\$1,275
22522	Each additional thoracic or lumbar vertebral body	0050	\$1,071	\$638
72291	Radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under fluoroscopic guidance	NA	Packaged	Packaged
72292	Radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under CT guidance	NA	Packaged	Packaged
<b>Percutaneous vertebral augmentation, including cavity creation (fracture reduction and bone biopsy included when performed) using mechanical device, one vertebral body, unilateral or bilateral cannulation (e.g., kyphoplasty)</b>				
22523	Thoracic	0052	\$5,976	\$3,551
22524	Lumbar	0052	\$5,976	\$3,551
22525	Each additional thoracic or lumbar vertebral body	0052	\$2,988	\$1,776
72291	Radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under fluoroscopic guidance	NA	Packaged	Packaged
72292	Radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under CT guidance	NA	Packaged	Packaged

\*Source: CY 2010 Medicare Outpatient Prospective Payment System, Final Rule. Federal Register, November 20, 2009.

## About the balloon kyphoplasty procedure

Balloon kyphoplasty is a minimally invasive procedure that follows the orthopaedic principles of fracture management by attempting to restore the height of the collapsed vertebra, correct angular deformity, and stabilize the fracture. The procedure is performed through two 1-cm incisions. Working cannulas are inserted bilaterally into the fractured vertebral body. Two inflatable bone tamps (IBTs) are inserted through the cannulas. The IBTs, or balloons, are inflated, attempting to elevate the endplates and correct vertebral deformity and sagittal alignment. Once the vertebra is in the correct position, the balloons are deflated and removed, leaving cavities within the vertebral body. The cavities are filled with KYPHON® Bone Cement using a controlled technique.

Reference: K041585

Device Name: KyphX® HV-R™ Bone Cement

Indications for Use:

KyphX® HV-R™ Bone Cement is indicated for the treatment of pathological fractures of the vertebral body due to osteoporosis, cancer, or benign lesions using a balloon kyphoplasty procedure. Cancer includes multiple myeloma and metastatic lesions, including those arising from breast or lung cancer, or lymphoma. Benign lesions include hemangioma and giant cell tumor.

Reference: K041454

Device Name: KyphX® Inflatable Bone Tamps

Indications for Use:

KyphX® Inflatable Bone Tamps are intended to be used as conventional bone tamps for the reduction of fractures and/or creation of a void in cancellous bone in the spine (including use during balloon kyphoplasty with KyphX® HV-R™ Bone Cement), hand, tibia, radius, and calcaneus.

[www.medtronic.com](http://www.medtronic.com)

### Medtronic

Spinal and Biologics Business  
Worldwide Headquarters

2600 Sofamor Danek Drive  
Memphis, TN 38132

1800 Pyramid Place  
Memphis, TN 38132

(901) 396-3133  
(800) 876-3133  
Customer Service: (800) 933-2635

For more information visit  
[www.myspinetools.com](http://www.myspinetools.com)

For additional coding information  
contact the SpineLine® Coding  
Support Line at (877) 690-5353.

Disclaimer: The materials and information cited here are for informational purposes only and are provided to assist in obtaining coverage and reimbursement for health care services. However, there can be no guarantee or assurances that it will not become outdated, without the notice of Medtronic, Inc., or that government or other payers may not differ with the guidance contained herein. The responsibility for coding correctly lies with the health care provider ultimately, and we urge you to consult with your coding advisors and payers to resolve any billing questions that you may have. All products should be used according to their labeling.

CPT ©2009 American Medical Association. All Rights Reserved. CPT is a registered trademark of the American Medical Association. Applicable FARS/DFARS Restrictions Apply to Government Use. Fee schedules, relative value units, conversion factors, and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.

