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Medical Policies

Print

Policy Number:	X-5025		
Policy Name:	Percutaneous Vertebroplasty and Sacroplasty		
Policy Type:	Medical	**Policy Subtype:**	Radiology
Effective Date:	09-15-2025	**End Date:**	11-02-2025

Description

Treatment of Vertebral Compression Fracture

Chronic symptoms do not tend to respond to the management strategies for acute pain such as bed rest, immobilization or bracing device, and analgesic medication, sometimes including narcotic analgesics. The source of chronic pain after vertebral compression fracture may not be from the vertebra itself but may be predominantly related to strain on muscles and ligaments secondary to kyphosis. This type of pain frequently does not improve with analgesics and may be better addressed through exercise or physical therapy. Improvements in pain and ability to function are the principal outcomes of interest for the treatment of osteoporotic fractures.

Treatment of Sacral Insufficiency Fractures

Similar interventions are used for sacral fractures and include bed rest, bracing, and analgesics. Initial clinical improvements may occur quickly; however, resolution of all symptoms may not occur for nine (9) to 12 months.

Vertebral and Sacral Body Metastasis

Metastatic malignant disease of the spine generally involves the vertebrae/sacrum, with pain being the most frequent complaint.

Treatment of Vertebral and Sacral Body Metastasis

While radiotherapy and chemotherapy are frequently effective in reducing tumor burden and associated symptoms, pain relief may be delayed days to weeks, depending on tumor response. Further, these approaches rely on bone remodeling to regain strength in the vertebrae/sacrum, which may necessitate supportive bracing to minimize the risk of vertebral/sacral collapse during healing. Improvements in pain and function are the primary outcomes of interest for treatment of bone malignancy with percutaneous vertebroplasty or sacroplasty.

Surgical Treatment Options

Percutaneous Vertebroplasty

Vertebroplasty is a surgical procedure that involves the injection of synthetic cement (e.g., polymethylmethacrylate, bis-glycidal dimethacrylate [Cortoss]) into a fractured vertebra. It has been suggested that vertebroplasty may provide an analgesic effect through mechanical stabilization of a fractured or otherwise weakened vertebral body. However, other mechanisms of effect have been postulated, including thermal damage to intraosseous nerve fibers.

Percutaneous Sacroplasty

Sacroplasty evolved from the treatment of insufficiency fractures in the thoracic and lumbar vertebrae with vertebroplasty. The procedure, essentially identical to vertebroplasty, entails guided injection of polymethylmethacrylate through a needle inserted into the fracture zone. Although first described in 2000 as a treatment for symptomatic sacral metastatic lesions, it is most often described as a minimally invasive alternative to conservative management for sacral insufficiency fractures.

Pain and function are subjective outcomes and, thus, may be susceptible to placebo effects. Furthermore, the natural history of pain and disability associated with these conditions may vary. Therefore, controlled comparison studies would be valuable to demonstrate the clinical effectiveness of vertebroplasty and sacroplasty over any associated nonspecific or placebo effects and to demonstrate the effect of treatment compared with alternatives such as continued medical management.

In all clinical situations, adverse events related to complications from vertebroplasty and sacroplasty are the primary harms to be considered. Principal safety concerns relate to the incidence and consequences of leakage of the injected polymethyl methacrylate or another injectate.

Criteria

Coverage is subject to the specific terms of the member's benefit plan.

Percutaneous vertebroplasty may be considered **medically necessary** for the treatment of symptomatic osteoporotic vertebral fractures that have failed to respond to conservative treatment (e.g., analgesics, physical therapy, rest) for at least six (6) weeks

Percutaneous vertebroplasty may be considered **medically necessary** for the treatment of symptomatic osteoporotic vertebral fractures that are less than six (6) weeks in duration that have led to hospitalization or persist at a level that prevents ambulation

Percutaneous vertebroplasty may be considered **medically necessary** for the treatment of severe pain due to osteolytic lesions of the spine related to multiple myeloma or metastatic malignancies

Percutaneous vertebroplasty is considered **investigational** for all other indications, including use in acute vertebral fractures due to osteoporosis or trauma

Percutaneous sacroplasty is considered **investigational** for all indications, including use in sacral insufficiency fractures due to osteoporosis and sacral lesions due to multiple myeloma or metastatic malignancies

Procedure Codes

22510	22511	22512	0200T	0201T

Summary of Evidence

For individuals who have symptomatic osteoporotic vertebral fractures between six (6) weeks and one (1) year old who receive vertebroplasty, the evidence includes two (2) randomized sham-controlled trials, nonblinded RCTs comparing vertebroplasty with conservative management, and several meta-analyses. Relevant outcomes are symptoms, functional outcomes, quality of life, hospitalizations, medication use, and treatment-related morbidity. Despite the completion of multiple RCTs, including two (2) with sham controls, the efficacy of vertebroplasty for painful osteoporotic compression fractures remains uncertain. Two meta-analysis studies, which included the two (2) sham-controlled trials, have demonstrated mixed results. The two (2) studies had methodologic issues, including the choice of sham procedure and the potential of the sham procedure to have a therapeutic effect by reducing pain. Questions have also been raised about the low percentage of individuals screened who participated in the trial, the volume of polymethylmethacrylate injected, and the inclusion of individuals with chronic pain. Other meta-analyses had numerous limitations due to the heterogeneity of included studies or not specifying the timeframe for osteoporotic vertebral compression fractures. Overall, conclusions about the effect of vertebroplasty remain unclear. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals with symptomatic osteoporotic vertebral fractures less than six (6) weeks old who receive vertebroplasty, the evidence includes a randomized sham-controlled trial and nonblinded RCTs comparing vertebroplasty with conservative management. Relevant outcomes are symptoms, functional outcomes, quality of life, hospitalizations, medication use, and treatment-related morbidity. For acute fractures, conservative therapy consisting of rest, analgesics, and physical therapy is an option, and symptoms will resolve in a large percentage of individuals with conservative treatment only. However, a sham-controlled randomized trial in individuals who had severe pain of fewer than six (6) weeks in duration found a significant benefit of vertebroplasty for the treatment of osteoporotic vertebral fracture at the thoracolumbar junction. Other RCTs without sham controls have reported that vertebroplasty is associated with significant improvements in pain and reductions in the duration of bed rest. Given the high morbidity associated with extended bed rest in older adults, this procedure is considered to have a significant health benefit. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals with sacral insufficiency fractures who receive sacroplasty, the evidence includes two (2) prospective cohort studies and a case series. Relevant outcomes are symptoms, functional outcomes, quality of life, hospitalizations, medication use, and treatment-related morbidity. No RCTs have been reported. The prospective cohort studies and retrospective series of 243 individuals have reported rapid and sustained decreases in pain following percutaneous sacroplasty. Additional literature has mostly reported immediate improvements following the procedure. However, due to the small size of the evidence base, the harms associated with sacroplasty have not been adequately studied. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Professional Statements and Societal Positions Guidelines

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

American College of Radiology

In 2020 , the American College of Radiology (ACR) revised its Appropriateness Criteria for the use of percutaneous vertebral augmentation in the management of vertebral compression fractures. Table 15 shows the appropriateness categories for each variant.

Table 15. ACR Appropriateness Criteria for the Use of Percutaneous Vertebral Augmentation for the Management of Vertebral Compression Fractures

Variants	Appropriateness Category
"New symptomatic compression fracture identified on radiographs or CT. No known malignancy."	May Be Appropriate
"Osteoporotic compression fracture, with or without edema on MRI and no 'red flags.' With or without spinal deformity, worsening symptoms, or pulmonary dysfunction."	Usually Appropriate
"Asymptomatic pathologic spinal fracture with or without edema on MRI."	May Be Appropriate
"Pathologic spinal fracture with severe and worsening pain."	Usually Appropriate
"Pathologic spinal fracture with spinal deformity or pulmonary dysfunction."	Usually Appropriate

ACR: American College of Radiology; CT: computed tomography; MRI: magnetic resonance imaging.

In 2014, the ACR and seven (7) other medical specialty associations, including the Society for Interventional Radiology, updated a 2012 joint position statement on percutaneous vertebral augmentation. The statement indicated that "percutaneous vertebral augmentation with the use of vertebroplasty or kyphoplasty is a safe, efficacious, and durable procedure in appropriate individuals with symptomatic osteoporotic and neoplastic fractures, when performed in accordance with published standards...only when nonoperative medical therapy has not provided adequate pain relief or pain is significantly altering the individual's quality of life."

Society of Interventional Radiology

In a 2014 quality improvement guideline for percutaneous vertebroplasty from the Society of Interventional Radiology, failure of medical therapy was defined as follows:

1. "For an individual rendered non-ambulatory as a result of pain from a weakened or fractured vertebral body, pain persisting at a level that prevents ambulation despite 24 hours of analgesic therapy;
2. For an individual with sufficient pain from a weakened or fractured vertebral body that physical therapy is intolerable, pain persisting at that level despite 24 hours of analgesic therapy; or
3. For any individual with a weakened or fractured vertebral body, unacceptable side effects such as excessive sedation, confusion, or constipation as a result of the analgesic therapy necessary to reduce pain to a tolerable level."

American Academy of Orthopaedic Surgeons

In 2011, the American Academy of Orthopaedic Surgeons (AAOS) published practice guidelines on the treatment of osteoporotic spinal compression fractures. The AAOS approved "a strong recommendation against the use of vertebroplasty for individuals who present with an acute osteoporotic spinal compression fracture and are neurologically intact."

National Institute for Health and Care Excellence

In 2003, NICE concluded in its guidance on percutaneous vertebroplasty that the current evidence on the safety and efficacy of vertebroplasty for vertebral compression fractures appeared "adequate to support the use of this procedure" to "provide pain relief for people with severe painful osteoporosis with loss of height and/or compression fractures of the vertebral body...." The guidance also recommended that the procedure be limited to individuals whose pain is refractory to more conservative treatment. A 2013 NICE guidance indicated that percutaneous vertebroplasty and percutaneous balloon kyphoplasty "are recommended as options for treating osteoporotic vertebral compression fractures" in persons having "severe, ongoing pain after a recent, unhealed vertebral fracture despite optimal pain management" and whose "pain has been confirmed to be at the level of the fracture by physical examination and imaging."

In 2008, NICE issued guidance on the diagnosis and management of adults with metastatic spinal cord compression. This guidance indicated that vertebroplasty or kyphoplasty should be considered for "individuals who have vertebral metastases and no evidence of metastatic spinal cord compression or spinal instability if they have: mechanical pain resistant to conventional pain management, or vertebral body collapse."

American Society of Pain and Neuroscience

In 2021, the American Society of Pain and Neuroscience (ASPN) published practice guidelines for the interventional management of cancer-associated pain. The guideline included a best practice statement that stated "vertebral augmentation should be strongly considered for individuals with symptomatic vertebral compression fractures from spinal metastases (evidence level 1-A)." However, ASPN noted that there is little data to suggest the superiority of either vertebroplasty or kyphoplasty when treating malignant vertebral compression fractures.

Diagnosis Codes

C41.2	C79.51	C79.52	C90.00	C90.01	C90.02	D18.09
D47.Z9	M48.50XA	M48.50XD	M48.50XG	M48.50XS	M48.51	M48.51XA
M48.51XD	M48.51XG	M48.51XS	M48.52	M48.52XA	M48.52XD	M48.52XG
M48.52XS	M48.53	M48.53XA	M48.53XD	M48.53XG	M48.53XS	M48.54
M48.54XA	M48.54XD	M48.54XG	M48.54XS	M48.55	M48.55XA	M48.55XD
M48.55XG	M48.55XS	M48.56	M48.56XA	M48.56XD	M48.56XG	M48.56XS

M48.57	M48.57XA	M48.57XD	M48.57XG	M48.57XS	M48.58	M48.58XA
M48.58XD	M48.58XG	M48.58XS	M80.08XA	M80.08XD	M80.08XG	M80.08XK
M80.08XP	M80.08XS	M84.48XA	M84.48XD	M84.48XG	M84.48XK	M84.48XP
M84.48XS	M84.58XA	M84.58XD	M84.58XG	M84.58XK	M84.58XP	M84.58XS
M84.68XA	M84.68XD	M84.68XG	M84.68XK	M84.68XP	M84.68XS	

CURRENT CODING

CPT:

0200T	PERQ SAC AGMNTJ UNI W/WO BALO/MCHNL DEV 1/> NDL	Commercial
0201T	PERQ SAC AGMNTJ BI W/WO BALO/MCHNL DEV 2/> NDLS	Commercial
22510	PERQ VERTEBROPLASTY UNI/BI INJX CERVICOTHORACIC	Commercial
22511	PERQ VERTEBROPLASTY UNI/BI INJECTION LUMBOSACRAL	Commercial
22512	VERTEBROPLASTY EACH ADDL CERVICOTHOR/LUMBOSACRAL	Commercial
0200T	PERQ SAC AGMNTJ UNI W/WO BALO/MCHNL DEV 1/> NDL	Medicaid Expansion
0201T	PERQ SAC AGMNTJ BI W/WO BALO/MCHNL DEV 2/> NDLS	Medicaid Expansion
22510	PERQ VERTEBROPLASTY UNI/BI INJX CERVICOTHORACIC	Medicaid Expansion
22511	PERQ VERTEBROPLASTY UNI/BI INJECTION LUMBOSACRAL	Medicaid Expansion
22512	VERTEBROPLASTY EACH ADDL CERVICOTHOR/LUMBOSACRAL	Medicaid Expansion

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ND Committee Review

Internal Medical Policy Committee 9-26-2019 New Policy

Internal Medical Policy Committee 9-21-2020 Annual Review - No changes

Internal Medical Policy Committee 9-21-2021 Annual Review-no changes in criteria

Internal Medical Policy Committee 9-21-2022 Revision- *Effective November 07, 2022*

- Updated language throughout policy
- *Added* Diagnosis codes: M48.51; M48.52; M48.53; M48.54; M48.55; M48.56; M48.57 and M48.58
- *Added* Summary of Evidence

Internal Medical Policy Committee 9-12-2023 Annual Review - no changes in criteria

Disclaimer

Current medical policy is to be used in determining a Member's contract benefits on the date that services are rendered. Contract language, including definitions and specific inclusions/exclusions, as well as state and federal law, must be considered in determining eligibility for coverage. Members must consult their applicable benefit plans or contact a Member Services representative for specific coverage information. Likewise, medical policy, which addresses the issue(s) in any specific case, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving and the Company reserves the right to review and update medical policy periodically.