Anthem

Clinical UM Guideline

Subject: Open Sacroiliac Joint Fusion
Guideline #: CG-SURG-111
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Description

This document addresses proposed indications for *open* sacroiliac joint fusion, a surgical procedure that fuses the iliac bone (pelvis) to the spine (sacrum). It is performed for a variety of orthopedic conditions including trauma (with fracture), infection, cancer, and spinal instability.

Note: This document *does not* address minimally invasive sacroiliac joint fusion procedures.

Clinical Indications

Medically Necessary:

Open sacroiliac joint fusion procedures are considered **medically necessary** for **any** of the following indications:

1. As an adjunct to sacrectomy or partial sacrectomy related to tumors involving the sacrum; **or**
2. As an adjunct to the medical treatment of sacroiliac joint infection/sepsis; **or**
3. Severe traumatic injuries associated with pelvic ring disruption (that is, fracture or dislocation); **or**
4. During multisegment spinal constructs (for example, correction of deformity in scoliosis or kyphosis surgery) extending to the ilium.

Not Medically Necessary:

Open sacroiliac joint fusion procedures for conditions not listed above, including but not limited to, poorly defined low back pain and sacral insufficiency fractures are considered **not medically necessary.**

Coding

The following codes for treatments and procedures applicable to this guideline are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services are Medically Necessary:

CPT	
27280	Arthrodesis, sacroiliac joint, open, includes obtaining bone graft, including instrumentation, when performed

ICD-10 Procedure	
0SG704Z-0SG70KZ	Fusion of right sacroiliac joint, open approach, [by device; includes codes 0SG704Z, 0SG707Z, 0SG70JZ, 0SG70KZ]
0SG804Z-0SG80KZ	Fusion of left sacroiliac joint, open approach, [by device; includes codes 0SG804Z, 0SG807Z, 0SG80JZ, 0SG80KZ]
XNH6058	Insertion of internal fixation device with tulip connector into right pelvic bone, open approach, new technology group 8
XNH7058	Insertion of internal fixation device with tulip connector into left pelvic bone, open approach, new technology group 8
XRGE058	Fusion of right sacroiliac joint using internal fixation device with tulip connector, open approach, new technology group 8
XRGF058	Fusion of left sacroiliac joint using internal fixation device with tulip connector, open approach, new technology group 8

ICD-10 Diagnosis	
C41.4	Malignant neoplasm of pelvic bones, sacrum, and coccyx
C79.51	Secondary malignant neoplasm of bone
D16.8	Benign neoplasm of pelvic bones, sacrum, and coccyx
D48.0	Neoplasm of uncertain behavior of bone and articular cartilage
D49.2	Neoplasm of unspecified behavior of bone, soft tissue, and skin
M46.28	Osteomyelitis of vertebra, sacral and sacrococcygeal region
M46.38	Infection of intervertebral disc (pyogenic), sacral and sacrococcygeal region
S32.810A-S32.811S	Multiple fractures of pelvis with disruption of pelvic ring

When services may be Medically Necessary when criteria are met:
For the procedure code listed above for the following diagnoses

ICD-10-Diagnosis	
M40.00-M40.299	Kyphosis [when treatment involves multisegment instrumentation]
M41.00-M41.9	Scoliosis [when treatment involves multisegment instrumentation]
M89.751-M89.759	Major osseous defect, pelvic region and thigh [when specified as related to neoplasm or sepsis]

When services are Not Medically Necessary:
For the procedure and diagnosis codes listed above when criteria are not met or for all other diagnoses not listed.

Discussion/General Information

The sacroiliac joint is a firm, small joint that lies at the junction of the spine and the pelvis. While most of the bones (vertebrae) of the spine are mobile, the sacrum is made up of five vertebrae that are fused together and do not move. The iliac bones are the two large bones that make up the pelvis. As a result, the sacroiliac joints connect the spine to the pelvis. The sacrum and the iliac bones are held together by a collection of strong ligaments. These joints are important in transferring the load of the upper body to the lower body, supporting the entire weight of the upper body when an individual is erect, which in turn results in stress to this weight-bearing area of the pelvis and spine.

Surgical management of primary sacral tumors is challenging because of their size and location. Reconstruction is often required in individuals who require a radical resection with total sacrectomy for tumors such as chordoma, chondrosarcoma, Ewing sarcoma, and giant cell tumor of the sacrum. Sacroiliac joint fusion has been performed as an adjunct to en bloc sacrectomy or partial sacrectomy in the setting of sacral tumors. The evidence in the peer-reviewed literature to support the use of lumbar pedicle screws in combination with other surgical techniques involving the ilia in spinal pelvic reconstruction surgery (for example, Galveston rods, transiliac bar placement) consists of articles that review surgical techniques (Zhang, 2003) and small case series (Gallia, 2005; Newman, 2009; Salehi, 2002).

Sacroiliac joint infection (such as, osteomyelitis, pyogenic sacroiliitis, sepsis) is an uncommon condition that generally responds to long-term antibiotics and occasionally requires drainage for abscess. Additional surgical treatment may involve debridement, decompression, and internal screw fixation when symptoms do not resolve with initial intravenous antibiotic therapy. The evidence in the peer-reviewed literature to support the use of sacroiliac joint fusion as an adjunct to the medical treatment of sacroiliac joint infection consists of single and small case series (Davidson, 2003; Giannoudis, 2007; Sar, 2003).

Pelvic ring disruption with sacral fracture is typically a result of a high-energy injury associated with vascular injuries, mechanical instability, neurological impairment and increased morbidity. Unstable pelvic ring fractures can be treated by a variety of methods including early operative stabilization with internal iliosacral screw fixation. In vertically unstable injuries, sacroiliac screws may be augmented by anterior fixation (Griffin, 2006). Low rates of infection, wound healing problems and minimal blood loss are advantages of this method.

The evidence in the peer-reviewed literature to support the use of sacroiliac joint fusion procedures for pelvic ring fracture associated with traumatic injury consists of retrospective case series that address advantages and complications of specific surgical approaches (Hsu, 2010; Rysavy, 2010; Schweitzer, 2008).

The European guidelines for the diagnosis and treatment of pelvic girdle pain (Vleeming, 2008), which generally arises in relation to pregnancy, trauma, arthritis and osteoarthritis. “Pelvic girdle pain (PGP) is defined by pain experienced by the posterior iliac crest and the gluteal fold, particularly in the vincinity of the sacroiliac joints (SIJ). The pain may radiate in the posterior thigh and can also occur in conjuction with/or separately in the symphysis.” The endurance capacity for standing, walking, and sitting is diminished. The diagnosis of PGP can be reached after exclusion of lumbar causes. The PGP or functional disturbances in relation to PGP must be reproducible by specific clinical tests. Sacroiliac (SI) joint fusion procedure may be indicated for stabilization of a traumatic severe disruption of the pelvic ring.

Spinal deformity surgery involving long fusions of the spine in adults with spinal diseases such as degenerative scoliosis and spondylolysis may result in a debilitating complication of failure of the lumbosacral (spinal-pelvic) junction resulting from nonunion, implant failure, or sacral fracture. As a result, individuals who experience continued pain, continued curve progression and deformity, and progressive sagittal imbalance, may require reoperation. The addition of spinopelvic fixation at the caudal end of long segment fusions (constructs) has improved sacral fusion rates. Iliac wing screws have been successfully used in nonambulatory individuals for the treatment of neuromuscular scoliosis, but concerns exist over use in ambulatory individuals. Sacroiliac joint fusion has been performed in the setting of long segment fusions of the spine that end at the first sacral vertebra (S1) in adults with spinal deformity and persistent sacroiliac joint-related pain. The evidence in the peer-reviewed literature consists of retrospective case series (Tumialan, 2008; n=20), the largest series involving 78 ambulatory adults with degenerative scoliosis and spondylolysis who underwent bilateral iliac wing fixation in long fusions to the pelvis (Kasten, 2010). The operative indications for posterior spinal fusion in this case series were fixed sagittal imbalance spondylolysis (n=23), idiopathic scoliosis (n=22), degenerative scoliosis (n=15), pseudarthrosis below long fusions (n=13), and traumatic kyphosis (n=5). Postoperatively, 12 of 78 individuals (15.3%) developed pseudarthrosis with broken implants; however, only 5 of 78 (6.4%) nonunions occurred at the lumbosacral junction. Six of 78 individuals (7.7%) required removal of the iliac screws for pain or painful prominence. A total of 42 individuals had one or more complications with an overall complication rate of 54%. Based on responses to a satisfaction questionnaire, 78% of individuals reported good or excellent results with the procedure. A significant improvement was achieved in correction of sagittal balance and coronal deformity. On follow-up radiographs, there were no sacral fractures, sacral screw failures, or significant sacroiliac joint degeneration. Nonunions continued to be a problem, with a rate of 15.3%, however only 6.4% of nonunions were at the lumbosacral junction. Complications specific to iliac screw placement were reported as minimal. Despite the complication rates (similar to those reported in other articles) and the known problems that exist with the complexity of long segment spinal fusions, the use of iliac wing fixation appears to improve lumbosacral fusion rates by adding structural support to S1 screws in long-segment spinal fusions.

A European guideline by Vleeming and colleagues (2008) suggests that surgery may be indicated for severe traumatic cases of pelvic girdle pain, but only when other non-operative treatment modalities have failed. The guideline recommends a preoperative assessment and trial with an external fixator for 3 weeks to evaluate longer lasting effects of fixation.

Kibsgard and colleagues (2014) evaluated physical function and pain after open-accessed unilateral anterior sacroiliac joint fusion and fusion of the pubic symphysis in a single-subject research design study of 9 individuals with severe pelvic girdle pain. Repeated outcome measures of Oswestry Disability Index (ODI), visual analogue scale (VAS), and Short Form-36 (SF-36) were assessed preoperatively and at 3, 6, and 12 months postoperatively. A total of 8 participants were evaluable and included in the 1-year analysis of outcomes. Significant reductions were reported in ODI (54 to 37) and VAS (82 to 57) scores after 1 year ($p<0.001$). At baseline, 7 out of 8 participants had bilateral SI joint symptoms. At the 1-year follow-up, only 2 participants experienced pain in the fused joint; however, 6 of the 7 participants reported discomfort in the contralateral side. A total of 7 participants had pain in the pubic symphysis before surgery, and 5 participants had persistent pain in this area at the 1-year follow-up. One year after surgery, there was a 20-point improvement in physical function and bodily pain ($p<0.001$), a 15-point improvement in social functioning ($p=0.008$) and a 6-point improvement in general health ($p=0.009$). There were 3 major complications reported: 1 infection, 1 complex regional pain syndrome with drop-foot, and 1 participant with loss of bladder sensation; in addition, 3 participants experienced transient sensitivity loss to the lateral femoral cutaneous nerve area. All participants reported high levels of postoperative pain and required epidural treatment for 5-7 days, were hospitalized for 7-10 days, and were discharged on opioids. Limitations of this small study include the short-term measurement of outcomes and the high incidence of adverse events and complications with the procedure. Additional studies are needed of larger populations measuring long-term outcomes to evaluate the clinical efficacy and safety of sacroiliac fusion of the pelvic joints for individuals with severe pelvic girdle pain.

In 2021, the International Society of Advancement of Spine Surgery (ISASS) policy updated the minimally invasive surgical sacroiliac joint fusion (for chronic sacroiliac joint pain): coverage indications, limitations, and medical necessity. (Lorio, 2021) The authors suggest use of *open SIJF* "in certain cases, such as acute trauma, tumor, infection, or for SIJF in conjunction with pelvic fixation in spinal deformity surgery."

Evidence is poor for sacroiliac joint fusion for addition indications, sacroiliac joint problems are referred to by varying terms, including sacroiliac joint dysfunction, sacroiliac joint inflammation, sacroiliac joint strain, and sacroiliac joint syndrome. Each of these terms refers to a condition that causes pain in the sacroiliac joint area from a variety of causes. Individuals often experience pain in the lower back and hips, but pain may also be present in the groin and thighs; this pain is often aggravated by any form of movement including sitting, lifting, running or walking. The etiology of sacroiliac joint inflammation and pain can be difficult to diagnose since the sacroiliac joint is not easily palpated or manipulated, radiographs or other imaging studies are often normal, and other conditions (for example, degenerative arthritis, lower back pain, sciatica) can cause similar symptoms.

Research into sacroiliac joint pain has been affected by lack of standard criteria to measure its prevalence and against which various clinical examinations can be validated. Sacroiliac joint pain is typically without any consistent, demonstrable radiographic or laboratory features and most commonly exists in the setting of morphologically normal joints. Diagnostic anesthetic injections, movement tests, palpation to detect tenderness, and pain descriptions are clinical tests for evaluating individuals with complaints of sacroiliac joint pain. Study of the sacroiliac joint is further confounded by multiple structures, such as lumbar discs and posterior facet joints, that may refer pain to the area surrounding the sacroiliac joint. Sacroiliac joint fusion, performed as an open surgical procedure, with or without bone grafts and other metal implant devices, has been investigated as a treatment for individuals who are unresponsive to or cannot tolerate other therapy for chronic low back pain presumed to be primarily of sacroiliac joint origin and other pain-related sacroiliac conditions.

Sacral insufficiency fractures occur when the quality of the sacral bone has become inadequate to handle the stress of weight bearing. The bone has lost some of its supporting structure and becomes weak and fragile. Sacral insufficiency fractures are usually located parallel to the spine, most often in the ala or "wings" of the sacrum, just beside the sacroiliac joint. A transverse fracture may also be present that connects an insufficiency fracture when it occurs on both sides of the sacrum. Sacral insufficiency fractures are known to develop in older persons, particularly in women, due to the presence of osteoporosis (that is, a decrease in bone tissue and minerals such as calcium) without definite trauma history. Other risk factors that can weaken the bone include radiation to the pelvis (for example, oncologic conditions), steroid use, rheumatoid arthritis, hyperparathyroidism, anorexia nervosa, liver transplantation, osteopenia, Paget's disease, hip joint replacement, and prior lumbosacral fusion. Sacral insufficiency fractures can also occur in pregnant or breastfeeding women due to temporary osteoporosis. The exact prevalence of sacral insufficiency fractures is unknown and is often difficult to diagnose at an early stage because the condition presents with signs and symptoms similar to, and is often accompanied by, concurrent lower lumbar degenerative disease.

Definitions

Anterior: The front surface of the body.

Arthrodesis: The surgical fixation of a joint to promote bone fusion; also called artificial ankylosis or syndesis.

Axial skeleton: In the human body, the bones of the body axis, including the skull, vertebral column, ribs, and sternum.

Posterior: The back or dorsal surface of the body.

Provocative tests: Physical examination maneuvers that definitively confirms the sacroiliac joint as primary source of pain. Five different positions include: thigh thrust test, compression test, Gaenslen's test, distraction test, Patrick's sign. (NASS, 2015)

Sacroiliac joint: The joint formed by the sacrum and ilium where they meet on either side of the lower back.

Spinal fusion: The surgical immobilization of two or more adjacent bones of the spinal column (vertebra). Multiple bones are fused or made to grow together to become one solid bone; also called spondylosyndesis.

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Websites for Additional Information

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History

Status	Date	Action
Reviewed	05/11/2023	Medical Policy & Technology Assessment (MPTAC) review. Updated References and Websites for Additional Information sections.
	12/28/2022	Updated Coding section with 01/1/2023 CPT changes; revised descriptor for 27280.
	09/28/2022	Updated Coding section with 10/01/2022 ICD-10-PCS changes; added codes XNH6058, XNH7058, XRGE058, XRGF058.
Reviewed	05/12/2022	MPTAC review. Updated References and Websites sections.
New	05/13/2021	MPTAC review. Initial document development. Moved open sacroiliac joint fusion content from SURG.00127 to new clinical utilization management guideline CG-SURG-111 with new title "*Open Sacroiliac Joint Fusion*".

guideline for provider education and/or to review the medical necessity of services for any provider who has been notified that his/her/its claims will be reviewed for medical necessity due to billing practices or claims that are not consistent with other providers, in terms of frequency or in some other manner.