BlueCross BlueShield of Alabama

Name of Blue Advantage Policy:

Surgical Treatment of Femoroacetabular Impingement

Policy #: 421
Category: Surgery

Latest Review Date: April 2020
Policy Grade: B

BACKGROUND:

Blue Advantage *medical policy does not conflict with Local Coverage Determinations (LCDs), Local Medical Review Policies (LMRPs) or National Coverage Determinations (NCDs) or with coverage provisions in Medicare manuals, instructions or operational policy letters. In order to be covered by Blue Advantage the service shall be reasonable and necessary under Title XVIII of the Social Security Act, Section 1862(a)(1)(A). The service is considered reasonable and necessary if it is determined that the service is:*

1. *Safe and effective;*
2. *Not experimental or investigational*;*
3. *Appropriate, including duration and frequency that is considered appropriate for the service, in terms of whether it is:*
   - *Furnished in accordance with accepted standards of medical practice for the diagnosis or treatment of the patient's condition or to improve the function of a malformed body member;*
   - *Furnished in a setting appropriate to the patient's medical needs and condition;*
   - *Ordered and furnished by qualified personnel;*
   - *One that meets, but does not exceed, the patient's medical need; and*
   - *At least as beneficial as an existing and available medically appropriate alternative.*

Routine costs of qualifying clinical trial services with dates of service on or after September 19, 2000 which meet the requirements of the Clinical Trials NCD are considered reasonable and necessary by Medicare. Providers should bill* ***Original Medicare* *for covered services that are related to* ***clinical trials*** *that meet Medicare requirements (Refer to Medicare National Coverage Determinations Manual, Chapter 1, Section 310 and Medicare Claims Processing Manual Chapter 32, Sections 69.0-69.11).*

POLICY:

Effective for dates of service on or after August 2, 2010:

Blue Advantage will treat **open or arthroscopic treatment of femoroacetabular impingement** as a covered benefit when **all** of the following conditions have been met:

Age

- Patients should be skeletally mature with documented closure of growth plates (e.g., 15 years of older).

- Symptoms
  - Moderate-to-severe hip pain worsened by flexion activities (e.g., squatting or prolonged sitting) that significantly limits activities; AND
  - Unresponsive to conservative therapy for at least 3 months (including activity modifications, restriction of athletic pursuits and avoidance of symptomatic motion); AND
  - Positive impingement sign on clinical examination (pain elicited with 90 degrees of flexion and internal rotation and adduction of the femur)

Imaging

- Morphology indicative of cam or pincer-type FAI, e.g., pistol-grip deformity, femoral head-neck offset with an alpha angle greater than 50 degrees, a positive wall sign, acetabular retroversion (over-coverage with crossover sign), coxa profunda or protrusion, or damage of the acetabular rim; AND
- High probability of a causal association between the FAI morphology and damage, e.g., a pistol-grip deformity with a tear of the acetabular labrum and articular cartilage damage in the anterosuperior quadrant; AND
- No evidence of advanced osteoarthritis, defined as Tonnis Grade II or III, or joint space of less than 2mm; AND
- No evidence of severe (Outerbridge Grade IV) chondral damage

Blue Advantage will treat **treatment of FAI in all other situations** as a non-covered benefit and as **investigational.**

Blue Advantage does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Advantage administers benefits based on the members' contract and medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.

DESCRIPTION OF PROCEDURE OR SERVICE:

Femoroacetabular impingement (FAI) results from localized compression in the joint due to an anatomical mismatch between the head of the femur and the acetabulum. Symptoms of impingement typically occur in young to middle-aged adults prior to the onset of osteoarthritis, but may be present in younger patients with developmental hip disorders. The objective of surgical treatment of FAI is to improve symptoms and reduce further damage to the joint.

Femoroacetabular Impingement
FAI arises from an anatomical mismatch between the head of the femur and the acetabulum, causing compression of the labrum or articular cartilage during flexion. The mismatch can arise from subtle morphologic alterations in the anatomy or orientation of the ball-and-socket components (for example, a bony prominence at the head-neck junction or acetabular over-coverage) with articular cartilage damage initially occurring from abutment of the femoral neck against the acetabular rim, typically at the anterosuperior aspect of the acetabulum. Although hip joints can possess the morphologic features of FAI without symptoms, FAI may become pathologic with repetitive movement and/or increased force on the hip joint. High-demand activities may also result in pathologic impingement in hips with normal morphology.

Two types of impingement, cam and pincer, may occur alone or, more frequently, together. Cam impingement is associated with an asymmetric or nonspherical contour of the head or neck of the femur jamming against the acetabulum, resulting in cartilage damage and delamination (detachment from the subchondral bone). Deformity of the head/neck junction that looks like a pistol grip on radiographs is associated with damage to the anterosuperior area of the acetabulum. Symptomatic cam impingement is found most frequently in young male athletes. Pincer impingement is associated with over coverage of the acetabulum and pinching of the labrum, with pain more typically beginning in women of middle age. In cases of isolated pincer impingement, the damage may be limited to a narrow strip of the acetabular cartilage.

Epidemiologic and radiographic studies have found correlations between hip osteoarthritis (OA) and FAI lesions, supporting the theory that prolonged contact between the anatomically mismatched acetabulum and femur may lead not only to cam and pincer lesions, but eventually to further cartilage damage and subsequent joint deterioration. Surgical treatment of FAI is less effective for pain reduction in patients who have already progressed to late-stage OA. It is believed that osteoplasty of the impinging bone is needed to protect the cartilage from further damage and to preserve the natural joint. Therefore, if FAI morphology is shown to be an etiology of OA, a strategy to reduce the occurrence of idiopathic hip OA could be early recognition and treatment of FAI before cartilage damage and joint deterioration occurs.

An association between FAI and athletic pubalgia, sometimes called sports hernia, has been proposed. Athletic pubalgia is an umbrella term for a large variety of musculoskeletal injuries involving attachments and/or soft tissue support structures of the pubis.

Surgical Techniques for Treating FAI
A technique for hip dislocation with open osteochondroplasty that preserved the femoral blood supply was reported by Ganz et al in 2001. Visualization of the entire joint with this procedure led to the identification and acceptance of FAI as an etiology of cartilage damage and the possibility of correcting the abnormal femoroacetabular morphology. Open osteochondroplasty of bony abnormalities and treatment of the symptomatic cartilage defect is considered the criterion standard for complex bony abnormalities. However, open osteochondroplasty is invasive, requiring transection of the greater trochanter (separation of the femoral head from the femoral shaft) and dislocation of the hip joint to provide full access to the femoral head and acetabulum. In addition to the general adverse effects of open surgical procedures, open

osteochondroplasty with dislocation has been associated with nonunion and neurologic and soft tissue lesions.

Less invasive hip arthroscopy and an arthroscopy-assisted mini-approach were developed by 2004. Arthroscopy requires specially designed instruments and is considered to be more technically difficult due to reduced visibility and limited access to the joint space. Advanced imaging techniques, including computed tomography and fluoroscopy, have been used to improve visualization of the 3-dimensional head/neck morphology during arthroscopy.

FAI can also be a source of hip pain and decreased hip internal rotation in the pediatric population. When nonoperative management of FAI in children and adolescents is ineffective, operative procedures may be indicated. Surgical techniques include arthroscopy, open hip dislocation, limited open with arthroscopy, and osteotomy.

Slipped Capital Femoral Epiphysis
Patients with slipped capital femoral epiphysis (SCFE) have a displaced femoral head in relation to the femoral neck within the confines of the acetabulum, which can result in hip pain, thigh pain, knee pain, and onset of a limp. SCFE occurs most frequently in children between the ages of 10 to 16. In a study of patients reaching skeletal maturity after being diagnosed with SCFE, 32% were found to have clinical signs of impingement. It is not uncommon for patients with SCFE to develop premature OA requiring total hip arthroplasty within 20 years. The standard treatment for SCFE is stabilization across the physis by in situ pinning. Alternative treatments proposed for pediatric patients with SCFE-related FAI include osteoplasty without dislocation, or with the open dislocation technique described by Ganz. The Ganz technique (capital realignment with open dislocation) is technically demanding with a steep learning curve and a high risk of complications, including avascular necrosis. Therefore, early treatment to decrease impingement must be weighed against increased risk of adverse events.

KEY POINTS:
This policy has been updated regularly with searches of the MEDLINE database. The most recent literature update was performed through January 30, 2020.

Summary of Evidence
Femoroacetabular impingement (FAI) results from localized compression in the joint due to an anatomic mismatch between the head of the femur and the acetabulum. Symptoms of impingement typically occur in young to middle-aged adults before the onset of osteoarthritis (OA) but may be present in younger patients with developmental hip disorders. The objective of surgical treatment of FAI is to provide symptom relief and reduce further damage to the joint.

For individuals who are asymptomatic adults with FAI who receive FAI surgery, there is no direct evidence that the surgical treatment will prevent the development of OA. Relevant outcomes are symptoms, functional outcomes, health status measures, quality of life, and change in disease status. Indirect evidence consists of observational studies. In retrospective studies of patients with OA, the relevant outcomes were radiographic evidence of hip joint malformations. In prospective studies of patients with FAI, the relevant outcome is progression to OA. Several

large observational studies (>1000 patients) as well as smaller studies have shown radiographic evidence of relationships between abnormal hip morphology and the development of OA. There have been no studies in which FAI surgery was performed on patients with FAI morphology but no symptoms. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who are symptomatic adults with FAI who receive FAI surgery, the evidence includes systematic reviews of large and small observational studies and 1 small RCT. Relevant outcomes are symptoms, functional outcomes, health status measures, quality of life, and change in disease status. Open hip dislocation surgery and arthroscopic surgery are the most common surgical techniques performed on patients with FAI. Systematic reviews have evaluated open hip dislocation surgery and arthroscopic surgery, compared with no comparator, nonsurgical management, and other surgical techniques. Compared with nonsurgical management, all types of surgical techniques have resulted in significant improvements in functional outcomes, pain, and radiographic measurements. The reviews were limited when comparing surgical techniques to each other, because patient characteristics and outcome measurements were heterogeneous among studies. The evidence is sufficient to determine the technology results in a meaningful improvement in the net health outcome.

For individuals who children 15 years of age or younger with symptomatic FAI who receive FAI surgery, the evidence includes systematic reviews of small observational studies. Relevant outcomes are symptoms, functional outcomes, health status measures, quality of life, and change in disease status. While the studies reported improvements in pain and functional outcomes, the sample sizes were relatively small, with an average of 54 patients per study. The evidence is insufficient to determine the effects of the technology on health outcomes.

For patients 15 years of age or younger with slipped capital femoral epiphysis associated FAI who receive surgical treatment, the evidence includes small observational studies (19 to 51 patients). Relevant outcomes include functional outcomes (modified Harris Hip Score, Non-arthritic Hip Score), symptom relief, radiographic measurements (α angle), and need for additional surgery. While most patients experienced symptom relief following FAI surgery, the surgery is invasive and complications such as nonunion were reported. Evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have residual FAI symptoms following a primary surgery who receive revision arthroscopic surgery, the evidence includes systematic reviews of observational studies (>400 patients). Relevant outcomes are symptoms, functional outcomes, health status measures, quality of life, and change in disease status. Though the studies were low quality, consistent improvements in functional outcomes, pain relief, and patient satisfaction were reported. The evidence is sufficient to determine the technology results in a meaningful improvement in the net health outcome.

Practice Guidelines and Position Statements
National Institute for Health and Care Excellence
In 2011, the U.K.'s National Institute for Health and Clinical Excellence (NICE) issued revised guidance on arthroscopic femoroacetabular surgery for hip impingement syndrome. NICE considers current evidence on the efficacy of arthroscopic femoroacetabular surgery for hip impingement syndrome to be adequate in terms of symptom relief in the short and medium term.

NICE's 2011 guidance on open femoroacetabular surgery for hip impingement syndrome indicated that evidence for this procedure was adequate for symptom relief in the short and medium term.46 This guidance replaced IPG203.

U.S. Preventive Services Task Force Recommendations
Not applicable.

KEY WORDS:
Femoroacetabular impingement, FAI, Cam-type impingement, pincer-type impingement, femoral osteoplasty, osteochondral osteoplasty, hip arthroscopy, osteoarthritis

APPROVED BY GOVERNING BODIES:
Surgery for treatment of femoroacetabular impingement is a surgical procedure and as such, is not subject to regulation by the U.S. Food and Drug Administration.

BENEFIT APPLICATION:
Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

CURRENT CODING:
CPT Codes:

29914	Arthroscopy, hip, surgical; with Femoroplasty (i.e., treatment of Cam Lesion)
29915	Arthroscopy, hip, surgical; with acetabuloplasty (i.e., treatment of pincer lesion)
29916	Arthroscopy, hip, surgical; with labral repair

There are no specific CPT codes for the open treatment of FAI. The procedure might be coded using code 27299 (unlisted procedure, pelvis or hip joint).

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POLICY HISTORY:

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Medical Policy Group, December 2010
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