Hip Arthroscopy for Femoroacetabular Impingement Clinical Coverage Criteria

Description

Surgery for femoroacetabular impingement reshapes the misshapen head of the femur and/or the acetabulum as an alternative to total hip replacement or hip resurfacing. It can be done as an open or arthroscopic procedure.

Policy

This Policy applies to the following Fallon Health products:

☒ Medicare Advantage (Fallon Medicare Plus, Fallon Medicare Plus Central)
☒ MassHealth ACO
☒ NaviCare HMO SNP
☒ NaviCare SCO
☒ PACE (Summit Eldercare PACE, Fallon Health Weinberg PACE)
☒ Community Care

Prior authorization is not required hip arthroscopy for femoroacetabular impingement effective for dates of service on or after March 1, 2020.

Medicare Advantage (Fallon Medicare Plus, Fallon Medicare Plus Central)
Fallon Health complies with CMS's national coverage determinations (NCDs), local coverage determinations (LCDs) of Medicare Contractors with jurisdiction for claims in the Plan's service area, and applicable Medicare statutes and regulations when making medical necessity determinations for Medicare Advantage members. When coverage criteria are not fully established in applicable Medicare statutes, regulations, NCDs or LCDs, Fallon Health may create internal coverage criteria under specific circumstances described at § 422.101(b)(6)(i) and (ii).

Medicare statutes and regulations do not have coverage criteria for hip arthroscopy for femoroacetabular impingement. Medicare does not have an NCD for hip arthroscopy for femoroacetabular impingement. National Government Services, Inc., the Part A/B Medicare Administrative Contractor with jurisdiction in the Plan's service area does not have an LCD or LCA for hip arthroscopy for femoroacetabular impingement (Medicare Coverage Database search 04/20/2024).

Coverage criteria for hip arthroscopy for femoroacetabular impingement are not fully established in applicable Medicare statutes, regulations, NCDs or LCDs, therefore, Fallon Health Clinical Coverage Criteria are applicable.

MassHealth ACO
Fallon Health follows Medical Necessity Guidelines published by MassHealth when making medical necessity determinations for MassHealth members. In the absence of Medical Necessity Guidelines published by MassHealth, Fallon Health may create clinical coverage criteria in accordance with the definition of Medical Necessity in 130 CMR 450.204.

MassHealth does not have Medical Necessity Guidelines for hip arthroscopy for femoroacetabular impingement (MassHealth website search 04/20/2024), therefore the Plan's Clinical Coverage Criteria are applicable.

NaviCare HMO SNP, NaviCare SCO
For plan members enrolled in NaviCare, Fallon Health first follow's CMS's national coverage determinations (NCDs), local coverage determinations (LCDs) of Medicare Contractors with jurisdiction for claims in the Plan's service area, and applicable Medicare statutes and regulations when making medical necessity determinations.

When coverage criteria are not fully established in applicable Medicare statutes, regulations, NCDs or LCDs, or if the NaviCare member does not meet coverage criteria in applicable Medicare statutes, regulations, NCDs or LCDs, Fallon Health then follows Medical Necessity Guidelines published by MassHealth when making necessity determinations for NaviCare members.

PACE (Summit Eldercare PACE, Fallon Health Weinberg PACE)
Each PACE plan member is assigned to an Interdisciplinary Team. PACE provides participants with all the care and services covered by Medicare and Medicaid, as authorized by the interdisciplinary team, as well as additional medically necessary care and services not covered by Medicare and Medicaid. With the exception of emergency care and out-of-area urgently needed care, all care and services provided to PACE plan members must be authorized by the interdisciplinary team.

Fallon Health Clinical Coverage Criteria

Effective for dates of service on or after May 1, 2024, Fallon Health will use InterQual® Criteria when making medical necessity determinations for hip arthroscopy for femoroacetabular impingement (FAI). For coverage criteria, refer to the InterQual® Criteria in effect on the date of service.

- InterQual® CP:Procedures Arthroscopy, Surgical, Hip, Repair of femoroacetabular impingement (FAI)
- InterQual® CP:Procedures Arthroscopy, Surgical, Hip (Pediatric), Repair of femoroacetabular impingement (FAI)

Fallon Health makes InterQual criteria available to the public through the transparency tool on our website, effective January 1, 2024.

Exclusions

- Hip arthroscopy for femoroacetabular impingement is considered experimental and investigational and therefore not medically necessary when coverage criteria are not met.
- Treatment of asymptomatic patients with incidental findings of FAI.
- Hip arthroscopy for femoroacetabular impingement is considered experimental or investigational and therefore not medically necessary in the presence of advanced osteoarthritis defined as Tönnis grade 2 or 3, or joint space of < 2 mm.

Summary of Evidence

Background

Femoroacetabular impingement (FAI), previously also called acetabular rim syndrome or cervicoacetabular impingement, characterized by an early pathologic contact during hip joint motion between skeletal prominences of the acetabulum and the femur that limits the physiologic hip range of motion, typically flexion and internal rotation. Depending on clinical and radiographic findings, two types of impingement are distinguished: Cam impingement is the femoral cause of femoroacetabular impingement and is due to an aspherical portion of the femoral head–neck junction. Pincer impingement is the acetabular cause of femoroacetabular impingement and is characterized by focal or general overcoverage of the femoral head. Most patients (86%) have a combination of both forms of impingement, called "mixed cam and pincer impingement," with only a minority (14%) having the pure femoroacetabular impingement forms of either cam or pincer impingement. During sports activities and activities of daily living, repetitive microtrauma of these osseous convexities occur. As a consequence of

this recurring irritation, the labrum degenerates and irreversible chondral damage occurs that progresses and results in degenerative disease of the hip joint if the underlying cause of FAI is not addressed. In the initial phase, patients with FAI do not have classic radiographic signs of osteoarthritis such as joint space narrowing, osteophyte formation, subchondral sclerosis, or cyst formation (Tannast et al., 2015).

The long term sequelae of FAI have not been conclusively proven, but a growing body of evidence supports the theory that it may be a cause of premature osteoarthritis of the hip. It has also not been proven that surgery for FAI will prevent osteoarthritis. However, removing the offending bone may help reduce further injury to the joint, while also reducing symptoms. The results of surgery are clearly better when there is no articular cartilage damage, thus, early surgical intervention for symptomatic FAI may be recommended. There is no consensus whether to treat asymptomatic patients based only on imaging exams or those in whom asymptomatic isolated lesions of the labrum were detected (Volpon JB, 2016).

Several risk factors have been identified for FAI, which include activities involving repetitive hip motion, high-level sports, pediatric hip disease (slipped capital femoral epiphysis and Legg-Calvé-Perthes disease), femoral neck fractures, and previous hip surgery. Patients presenting with symptomatic FAI are often physically active adults between the ages of 25 and 50 years. Patients with symptomatic FAI typically have pain that is worse with activities, especially ones involving high flexion angles or sustained flexion loading (e.g., skiing, skating, squatting) or rotation (e.g., tennis, basketball) of the hip joint. Patients might have pain while getting in and out of a car, as the motion involves the hip joint undergoing loaded rotation while in flexion. Weakness and numbness are not commonly associated with FAI, and lumbar spine pathology should be suspected in such patients (Zhang et al., 2015).

The initial treatment for FAI consists of conservative management in the form of physical therapy, activity modification, oral anti-inflammatories and intra-articular injections of corticosteroid or hyaluronic acid. Physical therapy for FAI is focused on improving postural alignment, increasing core strength and endurance, increasing hip muscle strength and motor control and improving lower body flexibility. Patients may also benefit from muscle-strengthening programs as studies have shown that patients with FAI can present with concomitant pelvic muscle weakness. A study of adolescent patients presenting with FAI found that 70% of patients were successfully treated with rest, activity modification and physical therapy while 12% required a steroid injection and 18% ultimately required arthroscopic management at 24 months of follow-up (Pennock et al., 2019). Mallets et al. 2019, systematically reviewed seven studies and found that conservative interventions for short-term periods effectively reduced pain and improved function in the setting of FAI. Physical therapy generated moderate-to-large effect sizes with statistically significant decreases in pain and improvement of hip function scores (Hassan et al., 2022).

The goal of surgical intervention is to restore normal hip biomechanics and reduce pain by correcting the femoral head–neck relationship relative to the acetabulum. Surgery typically involves a combination of femoral head/neck osteoplasty, repair or reconstruction of the damaged labrum and treatment of concomitant hip pathology.

Uncontrolled Studies

Peters et al., 2006, reported on 29 patients (30 hips) in a prospective study with minimum two- 20 years follow-up. The specific diagnoses were primary FAI in 25 patients (26 hips), Legg-Calve-Perthes disease (n=3) and slipped capital femoral epiphysis (n=1). There were sixteen male patients and thirteen female patients with a mean age of 31 years (range: 16–51 years). Twenty-nine of the 30 hips had either cam-type impingement (n=14), or mixed cam and pincer-type impingement (n=15). Pincer (acetabular based) impingement was found in 1 hip. All patients were followed according to a prospective protocol, with Harris Hip Scores (HHS) and plain radiographs obtained preoperatively and at six months, one year, and annually for a minimum of two years. The HHS improved from 70 at baseline to 87 at an average 32-months' follow-up ($p<0.0001$). In 18 hips, severe damage of the acetabular articular cartilage that had not been appreciated on preoperative plain radiographs or magnetic resonance arthrography was noted on arthrotomy. Eight of these 18 hips subsequently had radiographic evidence of progression of the

osteoarthritis, and 4 of the 8 hips required or were expected to soon require conversion to a total hip arthroplasty to treat progressive pain. Radiographic signs of progression of osteoarthritis and clinical failure requiring conversion to total hip arthroplasty were seen only in patients with severe damage to the acetabular-articular cartilage, a finding that emphasizes the need for better imaging methods to assess the extent of damage to the acetabular articular cartilage in patients with FAI.

Development of osteoarthritis the hip in asymptomatic individuals with FAI was studied by Hartofilakidis et al., 2011, in a retrospective study. The long-term outcomes of 96 asymptomatic patients with radiological evidence of cam (n=17), pincer (n=34), or mixed (n=45) FAI. Over a mean period of 18.5 years (range 10 to 40 years), 79 hips (82%) remained free of osteoarthritis. Seventeen (18%) developed osteoarthritis at a mean of 12 years (range 2 to 28 years). The authors concluded that many hips with FAI may not develop osteoarthritis in the long term and, therefore, prophylactic surgical treatment in asymptomatic patients is not warranted.

Randomized Controlled Trials

The use of hip arthroscopy/arthroscopic osteochondroplasty as a treatment for femoroacetabular impingement (FAI) has increased exponentially in recent years without robust evidence or consensus about the patients who benefit from it. It is the focus of a randomized controlled trial (RCT) conducted by the Canadian Orthopaedic Foundation and the American Orthopaedic Society for Sports Medicine. Results of the FIRST trial (Femoroacetabular Impingement RandomiSed Controlled Trial (FIRST); NCT01623843) have been published. Adult men or women ages 18 to 50 were included. Eligible individuals had hip pain for > 6 months with no relief from non-operative interventions (physical therapy, NSAIDs, rest), CAM or Mixed Type FAI diagnosed on x-ray or MRI, and temporary relief from intra-articular injection. Exclusion criteria included but are not limited to evidence of advanced hip dysplasia (angle <20), presence of advanced hip osteoarthritis (Tonnis Grade 2 or 3), and presence of other hip pathology. The primary outcome was patient-reported pain using the 100-point visual analog scale (VAS) at 12 months. Secondary outcomes included hip function using the Hip Outcome Score (HOS) and International Hip Outcome Tool, physical and mental health (12-Item Short Form Health Survey), and health utility (EuroQol-5 Dimensions) at 12 months as well as any reoperations and other hip-related adverse events at 24 months. At 12 months, there was no difference in pain scores (VAS) between the groups (mean difference, 0.11 [95% CI, -7.22 to 7.45]; P = 0.98). Also, 88.3% (189/214) of participants had a labral tear, of which 60.3% were repaired. For the secondary outcomes, there were no significant differences between treatment groups, with the exception of the HOS activities of daily living domain in which lavage showed significant improvement compared with osteochondroplasty (mean difference, -5.03 [95% CI, -10.40 to -0.03]; P = .049). By 24 months, there were significantly fewer reoperations reported in the osteochondroplasty group (8/105) than the lavage group (19/104) (odds ratio, 0.37 [95% CI, 0.15-0.89]; P = .026). The primary reasons for a reoperation included hip pain (15/27; 55.6%) and a reinjury of the labrum (11/27; 40.7%). Both the osteochondroplasty and the lavage groups with or without labral repair for FAI had significantly improved pain or function significantly at 1 year. By 2 years, the reoperation rate was significantly lower in the osteochondroplasty group (FIRST Investigators, 2021).

Treatment of FAI in adults with hip arthroscopy has shown good mid- to long-term results and the use in pediatric FAI is increasing. Physical therapy continues to be first-line treatment, with those failing non-operative management being considered for hip arthroscopy. Surgical management is based on individual pathology with femoroplasty for cam morphology, acetabuloplasty for pincer morphology, and repair or debridement of labral tears. Timing of surgery is controversial, although is usually delayed until closure of the proximal femoral physis to avoid damaging the growth plate. In pediatric patients with open physes undergoing hip arthroscopy for FAI, there is a theoretical risk of recurrence and growth restriction (Crofts et al., 2023).

In 2018, Griffin and colleagues published results of a RCT conducted at 23 National Health Service Hospitals in the United Kingdom. This trial (UK FASHIoN Study) is registered as an International Standard Randomised Controlled Trial, number ISRCTN64081839A. Eligible patients were at least 16 years old,

had hip pain with radiographic features of cam or pincer morphology but no osteoarthritis, and were believed to be likely to benefit from hip arthroscopy. Patients were excluded if they had hip osteoarthritis (Tonnis grade >1 or less than 2 mm of superior joint space on an antero-posterior radiograph); a history of hip pathology such as Perthes' disease, slipped upper femoral epiphysis, or avascular necrosis, or previous hip injury such as acetabular fracture, hip dislocation, or femoral neck fracture; or if they had already had shape-changing surgery (open or arthroscopic) of the hip. The primary outcome was hip-related quality of life, as measured by the patient-reported International Hip Outcome Tool (iHOT-33) 12 months after randomization and analyzed in all eligible participants who were allocated to treatment (the intention-to-treat population). Between July 2012 and July 2016, 348 patients were randomized 1:1 to receive hip arthroscopy (n=171) or conservative treatment (n=177). Follow-up at the primary outcome assessment included 319 patients (92%) at 12 months after randomization. Mean iHOT-33 scores improved in the intervention group from 39.2 to 58.8 and scores in the conservative treatment group improved from 35.6 to 49.7 in the personalized hip therapy group. In the primary intention-to-treat analysis at 12 months, the adjusted estimate of treatment effect measured with iHOT-33 was 6.8 (95% CI 1·7 to 12·0, p=0·0093) in favor of hip arthroscopy, compared with conservative treatment. This estimate of treatment effect exceeded the minimum clinically important difference (6.1 points). In terms of adverse events, seven serious adverse events were reported and six of these were in the intervention group. One participant in the conservative treatment group developed biliary sepsis unrelated to treatment.

Consensus-Based Guideline

The 2016 Warwick Agreement on FAI syndrome was convened to build an international, multidisciplinary consensus on the diagnosis and management of patients with FAI syndrome. Prior to the meeting, 6 questions were agreed on, and recent relevant systematic reviews and seminal literature were circulated. At the one-day consensus meeting, the 22 panel members developed statements in response to each question through open discussion; members then scored their level of agreement with each response on a scale of 0–10. Substantial agreement (range 9.5–10) was reached for each of the 6 consensus questions, and the associated terminology was agreed on.

What is FAI syndrome?
FAI syndrome is a motion-related clinical disorder of the hip with a triad of symptoms, clinical signs and imaging findings. It represents symptomatic premature contact between the proximal femur and the acetabulum (Level of agreement: mean score 9.8, 95% CI 9.6 to 10).

How should FAI syndrome be diagnosed?
Symptoms, clinical signs and imaging findings must be present to diagnose FAI syndrome (Level of agreement: mean score 9.8, 95% CI 9.6 to 10).

- The primary symptom of FAI syndrome is motion-related or position-related pain in the hip or groin. Pain may also be felt in the back, buttock or thigh. In addition to pain, patients may also describe clicking, catching, locking, stiffness, restricted range of motion or giving way (Level of Agreement: mean score 9.8, 95% CI 9.6-10).
- Diagnosis of FAI syndrome does not depend on a single clinical sign; many have been described and are used in clinical practice. Hip impingement tests usually reproduce the patient’s typical pain; the most commonly used test, flexion adduction internal rotation (FADIR), is sensitive but not specific. There is often a limited range of hip motion, typically restricted internal rotation in flexion (Level of agreement: mean score 9.9, 95% CI 9.7 to 10).
- An anteroposterior radiograph of the pelvis and a lateral femoral neck view of the symptomatic hip should initially be performed to obtain an overview of the hips, identify cam or pincer morphologies, and identify other causes of hip pain. Where further assessment of hip morphology and associated cartilage and labral lesions is desired, cross-sectional imaging is appropriate. (Level of agreement: mean score 9.5. 95% CI 9.1 to 9.8).

What is the appropriate treatment of FAI syndrome?
FAI syndrome can be treated by conservative care, rehabilitation or surgery. Conservative care may involve education, watchful waiting, lifestyle and activity modification. Physiotherapy-led rehabilitation aims to improve hip stability, neuromuscular control, strength, range of motion and movement patterns. Surgery, either open or arthroscopic, aims to improve the hip morphology and repair damaged tissue. The good management of the variety of patients with FAI syndrome requires the availability of all of these approaches (Level of agreement: mean score 9.5, 95% CI 9.0 to 10).

What is the prognosis of FAI syndrome?
In patients who are treated for FAI syndrome, symptoms frequently improve, and they return to full activity, including sports. Without treatment, symptoms of FAI syndrome will probably worsen over time. The long-term outlook for patients with FAI syndrome is unknown. However, it is likely that cam morphology is associated with hip osteoarthritis. It is currently unknown whether treatment for FAI syndrome prevents hip osteoarthritis (Level of agreement: mean score 9.6, 95% CI 9.3 to 9.8).

How should someone with an asymptomatic hip with cam or pincer morphology be managed?
It is not known which individuals with cam or pincer morphologies will develop symptoms and, therefore, FAI syndrome. Preventive measures may have a role in higher risk populations, but it is rarely indicated to offer surgery to these individuals (Level of agreement: mean score 9.6, 95% CI 9.4 to 9.8).

Which outcome measures should be used to assess treatment for FAI syndrome?
Specifically designed and well-validated patient-reported outcome measures should be used to assess treatment for FAI syndrome. The international Hip Outcome Tool (iHOT), Hip and Groin Outcome Score (HAGOS) and Hip Outcome Score (HOS) are recommended (Level of agreement: mean score 9.7, 95% CI 9.4 to 9.9).

Analysis of Evidence (Rationale for Determination)

FAI is a well-defined clinical entity in which there are morphological alterations, whether constitutional or acquired, associated with repetitive movements of the hip; these can lead to injury of the labrum and acetabular cartilage with subsequent arthrosis. The symptoms manifest as pain and movement limitation, which progressively worsen. However, more studies are needed to better understand the natural evolution of the condition, especially in the asymptomatic individuals, of those who should be treated, and what is the best approach in terms of treatment.

There is no evidence that surgical intervention for FAI reduced risk for long-term osteoarthritis of the hip.

There is no consensus whether to treat asymptomatic patients based only on imaging exams or those in whom asymptomatic isolated lesions of the labrum were detected.

Surgical treatment of FAI is most effective in younger patients without osteoarthritis (Tonnis grade 0 or I) or severe cartilage damage. Although osteoarthritis can be identified with plain film radiographs, articular damage is not always identified with current imaging techniques. There is a high probability that symptoms in patients with osteoarthritis (Tonnis grade II or III, or joint space of less than two mm) or severe cartilage damage (Outerbridge grade IV) will not improve following arthroscopy. These patients may require total hip arthroplasty for progressing pain.

For individuals who are adults with symptomatic FAI who receive hip arthroscopy for FAI surgery, the evidence includes uncontrolled studies and RCTs. There is enough research to show that surgical treatment of FAI can improve pain and function in some patients. Often, these procedures can be done by either arthroscopic or open surgery. An arthroscopic approach may be preferable in many patients to allow rapid recovery, but some of these procedures will require an open approach. Postoperative physiotherapy protocols have been described but their value is uncertain.

Therefore, hip arthroscopy for FAI may be considered medically necessary for members who meet the policy criteria. For members who do not meet the policy criteria, hip arthroscopy for FAI is considered not medically necessary because the procedure is not considered clinically effective or appropriate for these individuals.

Coding

The following codes are included below for informational purposes only; inclusion of a code does not constitute or imply coverage.

Do not report CPT 29914, 29915 in conjunction with 29862, 29863.
Do not report CPT 29916 in conjunction with 29915, 29862, 29863.

National Correct Coding Initiative (NCCI) Procedure-to-Procedure (PTP) edits prevent inappropriate payment of services that should not be reported together. Each edit has a Column One and Column Two HCPCS/CPT code. If a provider reports the two codes of an edit pair for the same member on the same date of service, the Column One code is eligible for payment, but the Column Two code is denied unless a clinically appropriate NCCI PTP-associated modifier is also reported.

There is no specific CPT code for open femoroacetabular impingement (FAI) surgery; the appropriate code for reporting this procedure is 27299.

Code	Description
29914	Arthroscopy, hip, surgical; with femoroplasty (ie, treatment of cam lesion)
29915	Arthroscopy, hip, surgical; with acetabuloplasty (ie, treatment of pincer lesion)
29916	Arthroscopy, hip, surgical; with labral repair

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Policy history

Origination date:	11/01/2016
Review/Approval(s):	Technology Assessment Committee: 06/22/2016 (adopted Interqual Criteria), 01/25/2017 (annual review), 01/24/2018 (annual review), 01/23/2019 (annual review); 05/27/2020 (adopted Fallon Health criteria), 06/25/2021 (added clarifying language in Policy section related to Medicare Advantage, MassHealth ACO, NaviCare and PACE), 04/23/2024 (annual review; adopted InterQual Criteria;

added Summary of Evidence and Analysis of Evidence (Rationale for Determination); updated references).

Not all services mentioned in this policy are covered for all products or employer groups. Coverage is based upon the terms of a member's particular benefit plan which may contain its own specific provisions for coverage and exclusions regardless of medical necessity. Please consult the product's Evidence of Coverage for exclusions or other benefit limitations applicable to this service or supply. If there is any discrepancy between this policy and a member's benefit plan, the provisions of the benefit plan will govern. However, applicable state mandates take precedence with respect to fully-insured plans and self-funded non-ERISA (e.g., government, school boards, church) plans. Unless otherwise specifically excluded, federal mandates will apply to all plans.