



Medical Coverage Policy

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Athletic Pubalgia Surgery

Table of Contents

Overview	1
Coverage Policy.....	2
Health Equity Considerations.....	2
General Background	2
Medicare Coverage Determinations	5
Coding Information.....	5
References	6
Revision Details	7

Related Coverage Resources

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INSTRUCTIONS FOR USE

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Overview

This Coverage Policy addresses athletic pubalgia (sports hernia) surgery.

Coverage Policy

Surgical treatment for athletic pubalgia is considered experimental, investigational or unproven.

Health Equity Considerations

Health equity is the highest level of health for all people; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which people are born, grow, live, work, and age.

Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include safe housing, transportation, and neighborhoods; racism, discrimination and violence; education, job opportunities and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

General Background

Athletic pubalgia (also known as sports hernia, Gilmore groin, sportsman's hernia) represent a complex and often under-recognized cause of chronic groin pain in athletes, which can significantly impair their performance and quality of life. Despite the myriad of terms used to describe this condition, the underlying pathophysiology remains elusive, as no single anatomical structure is consistently implicated in its development. This lack of consensus has led to diagnostic challenges and varying treatment approaches, making the management of athletic pubalgia a topic of ongoing debate among clinicians. Many surgeons continue to refute the diagnosis because there is a lack of consensus and clear comprehension of the basic pathophysiologic features of this groin pain syndrome (Kopscik, et al., 2023; Zuckerbraun, et al., 2020).

According to the American Academy of Orthopaedic Surgeons (AAOS), athletic pubalgia most often occurs during sports that require sudden changes of direction or intense twisting movements. Although athletic pubalgia may lead to a traditional abdominal or inguinal hernia, it is a different injury. The AAOS defines athletic pubalgia as 'a strain or tear of any soft tissue (muscle, tendon, ligament) in the lower abdomen or groin area'. Strosberg et al. (2016) proposes core muscle injury/athletic pubalgia (CMI/AP) or sports hernia is a syndrome of disabling exertional inguinal and adductor pain commonly seen in high-performance athletes, possibly due to a disruption of the musculature of the posterior inguinal wall. Srinivasan et al. (2002) states athletic pubalgia is a term often used to describe the insidious onset of groin pain in professional athletes. This pain may be caused by a range of musculoskeletal conditions. The diagnosis of occult or sports hernia must be considered in athletes who do not respond to conservative treatment modalities directed at these entities. Included in the differential diagnosis for athletic pubalgia are osteitis pubis, distal abdominal rectus strain or avulsion, adductor tenoperiostitis, and rupture of the adductor longus. A simple adductor muscle strain (i.e., groin pull), or a true hernia that was missed initially on physical examination, should also be considered. Garvey et al (2014) states that athletic pubalgia should be considered as a 'groin disruption injury', the result of functional instability of the pelvis.

How athletic pubalgia and sports hernia is defined, diagnosed and treated varies widely in the literature. Imaging (e.g., ultrasound, x-ray) may be used along with physical exam. Rest, and/or anti-inflammatory medications and/or physical therapy may be recommended. Laparoscopic and open surgical procedures have been proposed for treating athletic pubalgia that is unresolved after

failed conservative treatments. Laparoscopic approaches may include totally extraperitoneal (TEP) and transabdominal preperitoneal (TAPP) repair for mesh placement, whereas open surgical techniques include both suture and mesh repair. Procedures may also include muscle or nerve release. There are many concerns when considering surgical treatment for athletic pubalgia: there is no standard definition or terms for the symptom complex in elite athletes; there is no standard defined successful response to conservative treatments and/or surgical exploration and repair; and there is variance in the proposed surgical procedures as well as results in the various surgical approaches.

Literature Review

Laparoscopic and open surgical procedures have been proposed for treating athletic pubalgia that is unresolved after failed conservative treatments. There are many concerns with this proposed treatment: there is no standard definition or terms for the symptom complex in elite athletes; there is no standard defined work-up or defined successful response to conservative treatments and/or surgical exploration and repair; and there is variance in the proposed surgical procedures as well as results in the various surgical approaches. There is a paucity of well-designed evidence evaluating athletic pubalgia surgery compared with conservative treatment as well as studies comparing various proposed surgical techniques. It is difficult to compare one study to another when evaluating the published literature because each study uses different terminology and assigns different definitions to terms such as athletic pubalgia and sports hernia. Serner et al. (2015) reported 33 different terminologies used in 72 studies. Despite the prevalence of the condition, the literature contains contradictory information regarding the etiology, presentation, diagnosis, and management of groin pain in the athletic patient.

Kraeutler et al. (2021) conducted a systematic review of reported terminologies, surgical techniques, preoperative diagnostic measures, and geographic differences in the treatment of core muscle injury (CMI)/athletic pubalgia/inguinal disruption. The review included 31 studies and a total of 1,571 patients. The most common terminology used to describe the diagnosis was "athletic pubalgia" followed by "sports hernia". Plain radiographs and magnetic resonance imaging of the pelvis were the most common imaging modalities used in the preoperative evaluation of a core muscle injury (CMI)/athletic pubalgia/inguinal disruption. Tenderness to palpation was the most common technique performed during physical examination, though the specific locations assessed with this technique varied substantially. The most common procedures performed were an open or laparoscopic mesh repair, adductor tenotomy, primary tissue (hernia) repair, and rectus abdominis (RA) repair. The authors stated "it is clearly evident that there is no consistent definition or treatment for the pathologies identified as CMI/athletic pubalgia/sports hernia/inguinal disruption, thereby confirming our hypothesis." As an example, although the term "sports hernia" is considered a misnomer in that this injury typically occurs in the absence of a true hernia, one study identified in this review defined a sports hernia as a true inguinal hernia in an athlete. One of the factors involved in the inconsistent surgical treatment of CMI/athletic pubalgia/sports hernia/inguinal disruption is the participation of surgeons from different subspecialties. The authors identified considerable differences in the specific procedures reported when the involved surgeons were trained in orthopedic versus general surgery. They also identified geographic differences in repair technique, with adductor longus (AL) tenotomy and RA repair performed more commonly in American compared to European studies. The authors noted an evolution over time with regard to surgical technique, with recent studies performing fewer primary tissue repairs and more AL tenotomies and RA repairs.

Serafim et al. (2022) conducted a systematic review to assess the time required to return to sport (RTS) after conservative versus surgical treatment in athletes for pubalgia. Ten studies were included in the analysis. Based on the GRADE assessment, five included analyses were classified as high quality, three were moderate quality, and two studies very low quality. The authors stated the quality of the studies detailing the results of conservative management was higher than

surgical procedures. The authors concluded their review highlights that individuals undergoing surgery for pubalgia may return to sport earlier than those receiving conservative treatment. However, conservative management should be considered before surgical treatment is indicated.

Hatem et al., (2021) conducted a systematic review to investigate the outcomes of surgery for chronic groin pain (CGP) in athletes based on surgical technique and anatomic area addressed. The review included 47 studies published between 1991 and 2020 with level 1 to 4 evidence, mean patient age >15 years, and results presented as return-to-sport, pain, or functional outcomes. Of the 47 studies, 44 were classified as level 4 evidence (Centre for Evidence-Based Medicine Oxford 2009). The reviewing authors determined that return to play at preinjury or higher level is more likely after surgery for inguinal-related CGP (92%) in comparison with surgery for adductor-related CGP (75%). However, the majority of studies on the surgical treatment of CGP in athletes was methodologically of low quality because of the lack of comparison groups.

Kler et al. (2021) conducted a meta-analysis to examine if there was an advantage between totally extra-peritoneal (TEP) and trans-abdominal pre-peritoneal (TAPP) laparoscopic approaches. A total of 26 studies were included, including prospective and retrospective studies. The assessed outcomes included median time to return to sporting activity, complications and the degree of postoperative pain reduction within three months. The authors concluded that their review demonstrated no differences in TEP or TAPP repair with regards to return to sporting activity, pain reduction or complications. The authors noted that limitations in the literature such as significant heterogeneity, substantial methodological and outcome reporting bias as well as a paucity in RCTs limit the authority of this conclusion.

A randomized trial was conducted in four European countries to compare open minimal suture repair (OMR) with totally endoscopic extraperitoneal (TEP) repair (Sheen, et al., 2019). A total of 65 athletes (92 % male) with Sportsman's hernia were enrolled (31 open repair, 34 totally extraperitoneal repair). Sportsman's hernia was defined by a history of chronic dull, diffuse groin pain lasting over six weeks. The pain occurred above the inguinal ligament in the deep inguinal ring, and could radiate to the inner thigh, scrotum or pubic bone. Minor pain was allowed that could radiate to the adductor origin or symphysis pubis on finger palpation or muscle stretching tests. Grade I–II edema at the pubic symphysis shown by MRI as a secondary effect of groin disruption was also acceptable for recruitment. Athletes with either unilateral or bilateral pain were included. Patients were excluded if they had an inguinal or femoral hernia, other treatable pathologies revealed by MRI (such as bursitis, hip injury or stress fracture), isolated adductor tendonitis with groin pain below the inguinal ligament, femoroacetabular impingement, isolated severe osteitis pubis (marked X-ray changes; grade III edema on MRI), previous groin surgery to the actual groin, or allergy to polyester or other contraindications to surgery. Results showed that both procedures improved pain and allowed return to sporting activities. TEP repair had a slight advantage over OMR for the primary outcome, complete relief of pain at 1 month, but there were no differences in secondary outcomes such as analgesic consumption, complications, time to resumption of low-level and full training, and pain up to 1 year.

Jørgensen et al. (2019) conducted a systematic review of adults diagnosed with longstanding groin pain with no hernia. Treatment included inguinal hernia repair, tenotomy, and nonsurgical management. Outcomes included return to habitual activity, pain, patient satisfaction, re-operations for the operated patients, and shift to surgery for the non-operated patients. A total of 72 studies with 3629 patients were included; however, only five studies used a comparison group. Overall for these studies, both different treatments were used and with separate outcomes for each treatment. This included four cohort studies and one RCT (Paajanen, et al., 2011). The authors concluded that surgery seems to be more efficient in return the patients to habitual activity, reduce their pain, and satisfy them than conservative treatment. Long term health outcomes were not reported.

Matikainen et al. (2017) prospectively evaluated 15 female nonprofessional athletes with obscure groin pain (athletic pubalgia) lasting over 6 months. Participants had failed conservative treatment and were treated surgically via placement of total extraperitoneal endoscopic polypropylene mesh behind the injured groin area. Prior to treatment, gynecologist and a general surgeon evaluation were conducted including ultrasound imaging and endoscopic studies (usually sigmoidoscopy) were performed if necessary. Pelvic radiographs and MRI were obtained in all patients to rule out musculoskeletal abnormalities. The presence of preoperative bone marrow edema (BME) at the pubic symphysis seen on MRI was graded from 0 to 3 and correlated with pain scores after surgery. After 1 year, surgical outcomes were excellent or good in 47% of women.

In a systematic review, de Sa et al. (2016) identified 73 articles, with data from 4655 patients with athletic groin pain. Over 80% (3895/4656) of the causes of groin pain requiring surgery in athletes was attributed to one of five gross etiologies: femoroacetabular impingement (FAI) (32%), athletic pubalgia (24%), adductor related pathology (12%), inguinal pathology (10%) and labral pathology (5%), with 35% of this labral pathology specifically attributed to FAI. The two most common imaging modalities used to diagnose groin pain in the athlete were: (1) MRI at 40% (1870/4655), with 8% (145/1870) specifically using an arthrogram; and (2) plain radiograph at 33% (1545/4655), with 51% (795/1545) of studies not reporting the specific views used. Intra-articular causes (ie, FAI and labral) were almost exclusively treated with arthroscopic procedures, whereas extra-articular causes (ie, athletic pubalgia and adductor-related) were almost exclusively treated with open or miniopen/percutaneous surgical procedures. Athletic pubalgia was treated with open surgical procedures 70% of the time (786/1122), with 61% (482/786) of those procedures using mesh reinforcement.

Limitations within the review and literature included incomplete and/or inadequate reporting across the individual studies included, and a lack of consistency in the included literature on nomenclature (often resulting in nonspecific and broad terminology) and diagnostic criteria for such pathology. The authors noted an additional limitation of this review stems from the inclusion of mostly case series, which precludes drawing inferences to the larger population of athletes with groin pain requiring surgery. Return to sport rates as an outcome was not reported, as there were too many potential biases in the reporting of these that would not accurately reflect true return to play seen in practice.

Professional Societies/Organizations

The American Academy of Orthopaedic Surgeons has no published guidelines or position statements that address surgical treatment for athletic pubalgia.

Medicare Coverage Determinations

	Contractor	Determination Name/Number	Revision Effective Date
NCD		No Determination found	
LCD		No Determination found	

Note: Please review the current Medicare Policy for the most up-to-date information.
(NCD = National Coverage Determination; LCD = Local Coverage Determination)

Coding Information

Notes:

1. This list of codes may not be all-inclusive since the American Medical Association (AMA) and Centers for Medicare & Medicaid Services (CMS) code updates may occur more frequently than policy updates.
2. Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

Considered Experimental/Investigational/Unproven when used to report athletic pubalgia (sports hernia) surgery:

CPT®* Codes	Description
27299	Unlisted procedure, pelvis or hip joint
49659	Unlisted laparoscopy procedure, hernioplasty, herniorrhaphy, herniotomy
49999	Unlisted procedure, abdomen, peritoneum and omentum

***Current Procedural Terminology (CPT®) ©2023 American Medical Association: Chicago, IL.**

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Revision Details

Type of Revision	Summary of Changes	Date
Annual Review	No clinical policy statement changes.	7/15/2024

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