

ATHLETIC PUBALGIA SURGERY

Guideline Number: MMG004.J

Effective Date: June 1, 2019

[Instructions for Use](#) ⓘ

Table of Contents	Page
COVERAGE RATIONALE	1
APPLICABLE CODES	1
DESCRIPTION OF SERVICES	1
CLINICAL EVIDENCE	1
U.S. FOOD AND DRUG ADMINISTRATION	4
REFERENCES	4
GUIDELINE HISTORY/REVISION INFORMATION	5
INSTRUCTIONS FOR USE	5

Related Medical Management Guideline

- [Femoroacetabular Impingement Syndrome](#)

COVERAGE RATIONALE

Surgical repair is unproven and not medically necessary for treating athletic pubalgia due to insufficient evidence of efficacy.

APPLICABLE CODES

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this guideline does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CPT Code	Description
49659	Unlisted laparoscopy procedure, hernioplasty, herniorrhaphy, herniotomy
49999	Unlisted procedure, abdomen, peritoneum and omentum

CPT® is a registered trademark of the American Medical Association

DESCRIPTION OF SERVICES

Athletic groin pain is referred to in the literature by many different terms, including, but not limited to, sportsman's groin, incipient hernia, sports hernia, Gilmore's groin, athletic pubalgia, inguinal disruption, and inguinal-related pain. Athletic pubalgia is a strain or tear of any soft tissue (muscle, tendon, ligament) in the lower abdomen or groin area. It most often occurs during sports that require sudden changes of direction or intense twisting movements. Sports hernias occur mainly in vigorous sports such as ice hockey, soccer, wrestling, and football. Athletic pubalgia diagnosis involves patient history review, physical examination, and imaging studies (ECRI 2017).

Treatment is often targeted to the specific diagnosis. The first line of treatment consists of conservative treatments such as rest, physical therapy and rehabilitation, anti-inflammatory medications, and corticosteroid injections. Persistent symptoms may warrant surgical or laparoscopic intervention. A variety of surgical and laparoscopic techniques have been described in the literature. The aims of these procedures include releasing tension and adding support to weak musculature (Hayes, 2017).

CLINICAL EVIDENCE

An observational, prospective cohort study was conducted by Roos et al. (2018) in 32 athletes with inguinal disruption who underwent subsequent endoscopic totally extraperitoneal (TEP) repair with placement of polypropylene mesh. Patients were assessed preoperatively, 3 months postoperatively and after a median follow-up of 19 months. Follow-up was completed in 30 patients (94%). At long-term follow-up, the median pain score was 0. Three months

postoperatively, improvement was shown on all physical functioning subscales. The authors concluded that athletes with inguinal disruption, selected through a multidisciplinary, systematic work-up, benefit from TEP repair. This is an uncontrolled study with a small sample size.

A retrospective single center study on 27 patients who underwent surgery for athletic pubalgia was conducted by Kajetanek et al. (2018). Athletic pubalgia was diagnosed on physical examination by a sports physician and a surgeon and confirmed by at least one imaging technique showing injury to the abdominal wall attachment site and/or adductors. The criterion for performing surgery was failure of appropriate conservative therapy followed for at least 3 months. Eight patients had abdominal wall involvement only, seven adductor tendon involvement only, and 12 both. The patients were contacted by a physician by telephone or e-mail at least 1 year after surgery. Mean follow-up duration was 33 ± 20 months. Of the 27 patients, 25 (92.6%) returned to play (RTP), after a mean of 112 days (range, 53–223 days) and experienced no recurrence during the follow-up of at least 1 year. The remaining two patients had residual pain precluding the resumption of their sports activities. The RTP time was shorter in patients with injuries confined to the abdominal wall. The authors concluded that the results of the study confirm the high RTP rate after surgery for athletic pubalgia, with a mean RTP time of 111.8 days. The study is limited by its retrospective observations and small sample size.

Zoland et al. (2018) reviewed a case series of eighteen women with athletic pubalgia by analyzing their presentations, concomitant pathologies, and surgical outcomes. All patients received "pubalgia protocol" magnetic resonance imaging and surgical intervention. Outcomes were assessed with a patient questionnaire >1 year after surgery. Of the 17 women, 9 had rectus aponeurotic plate injury only, or pure athletic pubalgia; the remaining 8 had athletic pubalgia in combination with ≥1 inguinal, obturator, and femoral hernias. Eighty-eight percent reported that the surgery was a success at follow-up. The authors concluded that surgical repair of athletic pubalgia in women is successful in significantly reducing pain levels. They identified several limitations to this study. First, the number of studied patients was small. This was a direct result of the available population and the lower number of female patients who present with this injury. Second, the studied population consisted of mixed diagnoses, with only 9 patients having pure athletic pubalgia. Finally, this study did not evaluate the female patients diagnosed with athletic pubalgia who were not referred for surgery. Further research to include nonsurgically treated patients may be of value.

A 2017 ECRI Health Technology report reviewed 28 publications: abstracts of 2 systematic reviews, 1 RCT, and 7 case series and full-text articles of 3 systematic reviews, 3 nonrandomized comparison studies, and 12 case series published between January 1, 2012 to June 26, 2017. The evidence indicated that a multimodal assessment (physical exam, history, and imaging as needed) to exclude other etiologies is recommended for the diagnosis of athletic pubalgia. Studies report little to modest effectiveness of conservative treatments; limited evidence supports the short- and long-term safety and effectiveness of various open and minimally invasive surgical treatments. Larger controlled studies to assess the clinical validity and utility of individual clinical and imaging tests are warranted. The quality of the evidence assessing surgical treatments is low because no studies compared surgical and conservative treatment in independent groups of patients. Studies comparing surgical procedures were not randomized.

A Hayes Health Technology report found that based on a low- quality body of evidence totally extraperitoneal (TEP) and transabdominal preperitoneal (TAPP) repair for mesh placement as well as open surgical procedures to treat athletic groin pain appear to grant benefits to patients who do not fully recover with the use of conservative treatments alone. There is insufficient evidence to determine whether a particular laparoscopic or open surgical technique is superior to another. More rigorous studies are needed to establish the relative benefits and harms of different laparoscopic and open surgical procedures for this patient population (Hayes, 2017, updated 2018).

A systematic review was conducted by de Sa et al. (2016) to identify the most common causes of groin pain in athletes requiring surgery. A total of 73 articles and 4655 patients were included in the study. The intra-articular and extra-articular causes of groin pain in athletes requiring surgery were equal. The top five causes for pain were: 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 authors concluded that given the complex anatomy, equal intra-articular and extra-articular contribution, and potential for overlap of clinical entities causing groin pain leading to surgery in athletes, further studies are required to determine how to best treat this patient population.

A prospective clinical cohort study was conducted by Pokorny et al. (2017) to evaluate the role of transabdominal preperitoneal (TAPP) mesh repair in athletes with sportsman's groin resistant to conservative therapy. Thirty-nine professional athletes with chronic groin pain were referred to surgery at a single clinic. A full assessment was carried out on each, including medical history, physical examination, dynamic ultrasound, and pelvic magnetic resonance imaging. TAPP repair was performed on 30 athletes. The outcome measures were early postoperative recovery of 6 weeks and full resumption of athletic activities. Conservative treatment had improved symptoms temporarily or to some extent in 7 athletes and 2 ceased competing altogether. Laparoscopy confirmed posterior wall deficiency in 24 and true inguinal hernia in 6 athletes. Twenty-one (70%) returned to sports activities after 6 weeks. Persistent mild

pain was experienced by 5 athletes postoperatively for up to 1 year. Twenty-five participants (85%) reported full satisfaction with the procedure 1 year after treatment; all returned to the same or even higher level of athletic performance. The authors concluded that the study confirmed that the endoscopic placement of retropubic mesh is an efficient, safe, and minimally invasive treatment that enables fast early recovery. This is a small, unblinded, uncontrolled study.

A clinical trial prospective cohort study is underway whose purpose is to describe clinical presentation (physical examination and magnetic resonance imaging findings) for a group of athletes presenting with athletic pubalgia, to describe the different biomechanical diagnoses that exist in patients and to examine the effects of a biomechanics led exercise intervention to rehabilitate chronic groin pain. Three hundred and eighty-two consecutive athletic groin pain patients, all male, are enrolled. All patients underwent MRI and patient-reported outcome (PRO) score to assess recovery. Median time in pain at presentation was (IQR) 36 (16–75) weeks. The most common diagnosis was that of pubic aponeurosis injury. Clinical trial registration number NCT02437942 (Falvey, 2016).

Serner et al. (2015) performed a systematic review of the literature on the efficacy of conservative and surgical treatment options for groin pain in athletes. Nine medical databases were searched in May 2014. Inclusion criteria were treatment studies in athletes with groin pain; randomized controlled trials (RCTs), controlled clinical trials or case series; outcome measures describing number of recovered athletes, patient satisfaction, pain scores or functional outcome scores. A total of 72 studies were included for quality analysis with a mean follow-up time of 27.7 months. The conservative treatment studies included passive physical therapy modalities and/or exercise therapy, or injection therapy (corticosteroids or dextrose). The surgical studies examined open hernia repair, laparoscopic hernia repair and adductor tenotomy. The control group intervention consisted of passive physical therapy modality or exercise therapy, local corticosteroid injection, and surgical adductor repair. The treatment success was defined in terms of the percentage of recovered athletes, percentage of excellent or good patient satisfaction, improvement in pain scores, improvement in functional outcome scores or percentage of athletes returning to play. A mean of 90.6% of the patients returned to play in the intervention groups and the mean reported time to return to play was 11.3 weeks. The mean treatment success in the control groups was 48.7%. A mean of 45.8% of the patients returned to play and the mean time to return to play was 25.6 weeks. The authors state there is moderate evidence that, for adductor-related groin pain, active exercises compared with passive treatments improve success, multimodal treatment with a manual therapy technique shortens the time to return to sports compared with active exercises and adductor tenotomy improves treatment success over time. There is moderate evidence that for athletes with sportsman's hernia, surgery results in better treatment success than conservative treatment. Only four studies were identified as high quality and there were a high number of disagreements between the authors in the quality assessment.

A systematic review was performed by King et al. (2015) of peer review studies which looked at athletic groin pain (AGP) surgery and rehabilitation and their influence on return to play (RTP) rates and/or return to play times. The purpose of this review was to compare the RTP rates and return to play times between surgical and rehabilitation interventions in the treatment of AGP. There were 3332 patients included in 57 studies. The patients were subdivided into three diagnostic groups; the pubic group with diagnosis and interventions related to the pubic symphysis and adjacent bone, the adductor tendons group, and the abdominal group. Surgery interventions included repair via laparoscopy or open incision, tenotomy of adductor longus, debridement of the pubic symphysis, or arthrodesis. Rehabilitation included massage and mobilization, electrotherapy, flexibility, resistance and strength training. Meta-analysis revealed the pubic surgery group had a RTP rate of 86% and returned to play in 23.1 weeks, abdominal group RTP rate of 96% and returned to play in 7.2 weeks, and the adductor group RTP was 84% and returned to play in 18.3 weeks. The pubic rehabilitation group had a RTP rate of 91% and returned to play in 10.5 weeks, the abdominal group had a RTP rate of 83% and returned to play in 7.9 weeks and the adductor group RTP was 81% and returned to play in 16.9 weeks. The authors concluded that this review challenges the belief that surgery offers a superior RTP rate and time across all categories. The review suggested better outcomes with rehabilitation for pubic-related groin pain with no difference between the adductor and abdominal groups. Overall the quality of the evidence available in the surgical and rehabilitation interventions in AGP is low and subject numbers are small. Appropriately designed randomized controlled trials should be conducted comparing rehabilitation and surgical intervention.

Harr and Brody (2017) reported on a case series of 22 individuals with magnetic-resonance-imaging (MRI) confirmation of athletic pubalgia with rectus and adductor tendonitis, who underwent a suture herniorrhaphy with adductor tenotomy. All 22 patients returned to their respective sports and within 6-8 weeks regained their ability to perform at a high level, including professional status. No further surgery was required. The authors concluded that in athletes with MRI confirmation of rectus and adductor longus injuries, tenotomies along with a herniorrhaphy may improve outcomes. Well designed, comparative studies with larger patient populations are needed to further describe safety and clinical outcomes.

Rossidis et al. conducted a retrospective review of competitive athlete patients with athletic pubalgia from 2007 to 2013. Athletic pubalgia is a syndrome of chronic lower abdomen and groin pain that occurs in athletes. It is the direct result of stress and microtears of the rectus abdominis inserting on the pubis from the antagonizing adductor longus

muscles, and weakness of the posterior transversalis fascia and bulging of the inguinal floor. A cohort of 54 patients was examined. Mean age was 22.4 years. Most patients were football players (n = 23), triathlon (n = 11), track and field (n = 6), soccer players (n = 5), baseball players (n = 4), swimmers (n = 3), golfer (n = 1), and tennis player (n = 1). Fifty one were males and three were females. All patients failed medical therapy with physiotherapy prior to surgery. 76 % of patients had an MRI performed with 26 % having a right rectus abdominis stripping injury with concomitant strain at the adductor longus musculotendinous junction. 7 % of patients had mild nonspecific edema in the distal bilateral rectus abdominis muscles without evidence of a tear. Twenty patients had no findings on their preoperative MRI, and only one patient was noted to have an inguinal hernia on MRI. All patients underwent laparoscopic totally extraperitoneal inguinal hernia repair with synthetic mesh and ipsilateral adductor longus tenotomy. All patients were able to return to full sports-related activity in 24 days (range 21-28 days). One patient experienced urinary retention and another sustained an adductor brevis hematoma 3 months after completion of rehabilitation and surgical intervention. The author concluded that athletic pubalgia is a disease with a multifactorial etiology that can be treated surgically by a laparoscopic totally extraperitoneal hernia repair with synthetic mesh accompanied with an ipsilateral adductor longus tenotomy allowing patients to return to sports-related activity early with minimal complications. The significance of this study is limited by small sample size and short follow-up period.

Caudill et al. (2008) found that surgery seemed to be more effective than conservative treatment, and laparoscopic techniques generally enabled a quicker recovery time than open repair. However, in addition to better descriptions of surgical anatomy and procedures and conservative and post-surgical rehabilitation, well-designed research studies are needed, which include more detailed serial patient outcome measurements in addition to basing success solely on return to sports activity timing. This information is necessary to better understand sports hernia pathogenesis, verify superior surgical approaches, develop evidence-based screening and prevention strategies, and more effectively direct both conservative and post-surgical rehabilitation.

Swan et al. (2007) performed an overview of the anatomy and pathoanatomy and a systematic review of the literature to gain insight into the disease and its treatment. Most studies are Level IV. The anatomy involved, diagnostic criteria, and treatment modalities are inconsistently described in the medical, surgical and orthopaedic literature. There is no evidence-based consensus available to guide decision-making. Open and laparoscopic repairs produce excellent results, but the latter allows earlier return to play.

The aim of laparoscopic and open surgical procedures for treatment of athletic groin pain is to release tension or provide support to the musculature. Laparoscopic approaches include totally extraperitoneal (TEP) and transabdominal preperitoneal (TAPP) repair for mesh placement, whereas open surgical techniques include both suture and mesh repair. A 2016 Hayes Technology Report found that based on a low-quality body of evidence; there is insufficient evidence to determine whether a particular laparoscopic or open surgical technique is superior to another. More rigorous studies are needed to establish the relative benefits and harms of different laparoscopic and open surgical procedures for this patient population (Hayes, 2016).

Professional Societies

American College of Radiology (ACR)

ACR recommends MRI or ultrasound imaging for assessing patients with chronic hip pain, no relevant radiographic findings, and suspected athletic pubalgia (Mintz, 2016).

U.S. FOOD AND DRUG ADMINISTRATION (FDA)

Laparoscopic surgery is a procedure and therefore not subject to FDA regulation. There are a number of surgical meshes approved for use in pelvic surgery, although none used in the reviewed studies were approved specifically for athletic pubalgia. See the following website for additional information (use product code FTM). Available at: <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pmnmn.cfm> (Accessed February 8, 2019)

REFERENCES

Caudill P, Nyland J, Smith C, et al; Sports hernias: a systematic literature review; Br J Sports Med; 2008 Dec; 42 (12): 954-64.

de Sa D, Hölmich P, Phillips M, et al. Athletic groin pain: a systematic review of surgical diagnoses, investigations and treatment. Br J Sports Med. 2016 Oct;50(19):1181-6.

Diehl L. American Orthopaedic Society for Sports Medicine. Sports Medicine. Athletic pubalgia: Groin pain in athletes. Fall 2016.

ECRI Institute; Hotline Service; Techniques for diagnosing and treating pubalgia (sports hernia).). ECRI Institute; July 30, 2009. Updated July 14, 2017.

Falvey E, King E, Kinsella S, et al. Athletic groin pain (part 1): a prospective anatomical diagnosis of 382 patients— clinical findings, MRI findings and patient-reported outcome measures at baseline. Br J Sports Med 2016;50:423-430.

Harr, JN, Brody, F. Sports hernia repair with adductor tenotomy. *Hernia*. 2017;21(1):139-147.

Hayes, Inc. Hayes Medical Technology Directory Report. Laparoscopic and open surgical repairs for treatment of athletic groin pain. Lansdale, PA: Hayes, Inc.; April, 2016. Updated April 4, 2018.

Kajetanek C, Benoît O, Granger B, et al. Athletic pubalgia: Return to play after targeted surgery. *Orthop Traumatol Surg Res*. 2018 Mar 13. pii: S1877-0568(18)30069-0.

King, E, Ward J, Small, L et al. Athletic groin pain: A Systematic Review and Meta-analysis of Surgical Versus Physical Therapy Rehabilitation Outcomes. *Br J Sports Med*. 2015;49(22):1447-1451.

Mintz DN, Roberts CC, Bencardino JT, et al. Expert panel on musculoskeletal imaging. American College of Radiology Appropriateness Criteria chronic hip pain. 2016.

Pokorny H, Resinger C, Fischer I, et al. Fast early recovery after transabdominal preperitoneal repair in athletes with sportsman's groin: A prospective clinical cohort study. *J Laparoendosc Adv Surg Tech A*. 2017;27(3):272-276.

Roos MM, Bakker WJ, Goedhart EA, et al. Athletes with inguinal disruption benefit from endoscopic totally extraperitoneal (TEP) repair. *Hernia*. 2018 Jun;22(3):517-524.

Rossidis G, Perry A, Abbas H; Laparoscopic hernia repair with adductor tenotomy for athletic pubalgia: an established procedure for an obscure entity; *Surg Endosc*; 2015 Feb; 29 (2): 381-6.

Serner, Andreas, van Eijck, Casper, Beumer, Berend, et al. Study quality on groin injury management remains low: a systematic review on treatment of groin pain in athletes. *Br J Sports Med*. 2015 Jun;49(12):813.

Swan KG Jr, Wolcott M; The athletic hernia: a systematic review; *Clin Orthop Relat Res*; 2007 Feb; 455: 78-87.

Zoland M, Iraci J, Bharam S, et al. Sports hernia/athletic pubalgia among women. *Orthop J Sports Med*. 2018 Sep 14;6(9):2325967118796494.

GUIDELINE HISTORY/REVISION INFORMATION

Date	Action/Description
06/01/2019	Supporting Information <ul style="list-style-type: none"> Updated <i>Clinical Evidence</i> and <i>References</i> sections to reflect the most current information; no change to coverage rationale or list of applicable codes Archived previous policy version MMG004.I

INSTRUCTIONS FOR USE

This Medical Management Guideline provides assistance in interpreting UnitedHealthcare standard benefit plans. When deciding coverage, the member specific benefit plan document must be referenced as the terms of the member specific benefit plan may differ from the standard benefit plan. In the event of a conflict, the member specific benefit plan document governs. Before using this guideline, please check the member specific benefit plan document and any applicable federal or state mandates. UnitedHealthcare reserves the right to modify its Policies and Guidelines as necessary. This Medical Management Guideline is provided for informational purposes. It does not constitute medical advice.

UnitedHealthcare may also use tools developed by third parties, such as the MCG™ Care Guidelines, to assist us in administering health benefits. UnitedHealthcare West Medical Management Guidelines are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.

Member benefit coverage and limitations may vary based on the member's benefit plan Health Plan coverage provided by or through UnitedHealthcare of California, UnitedHealthcare Benefits Plan of California, UnitedHealthcare of Oklahoma, Inc., UnitedHealthcare of Oregon, Inc., UnitedHealthcare Benefits of Texas, Inc., or UnitedHealthcare of Washington, Inc.