Aetna considers surgical treatment (e.g., pelvic floor repair) for athletic pubalgia (also known as core muscle injury or "sports hernia") experimental and investigational because the effectiveness of this approach has not been established.

Aetna considers intra-tissue percutaneous electrolysis for the treatment of chronic groin pain experimental and investigational because the effectiveness of this approach has not been established.

Aetna considers pulse-dose radiofrequency for the treatment of athletic pubalgia experimental and investigational because the effectiveness of this approach has not been established.

See also CPB 0736 - Femoro-Acetabular Surgery for Hip Impingement Syndrome (0736.html).

Background
Athletic pubalgia, also known as groin disruption or sportsman’s or sports hernia (SH), is a condition involving persistent groin pain during exercise when there is no evidence
of a clinically detectable hernia. Athletic pubalgia is not a true hernia, but is considered an overuse injury in which the external oblique muscle and surrounding tendons and/or the transverse abdominis or internal oblique muscles are worn down or partially torn.

Conservative treatment generally consists of rest, medications and physical therapy. If conservative treatment fails, surgical treatment may be suggested as an alternative. The procedure may be performed using a laparoscopic or open anterior approach. Polypropylene or polyester mesh is suggested to correct the identified abnormality. However, there are no data from randomized studies to confirm effectiveness of this surgery.

Athletic pubalgia (AP) has been reported to afflict athletes who participate in sports that entail repetitive twisting and turning while moving (e.g., hurdling, rugby, skiing, soccer, tennis, field hockey and ice hockey). Previously described in high-performance athletes, AP has also been reported to occur in recreational athletes. Athletic pubalgia has been characterized as chronic groin pain in conjunction with a dilated superficial ring of the inguinal canal. However, the term hernia is a misnomer because of the absence of a hernia on physical examination or imaging (e.g., magnetic resonance imaging [MRI]), and a hernia is not revealed during surgery. The following operative findings have been reported to occur commonly in persons with AP (Swan and Wolcott, 2007):

- Abnormal insertion of the rectus abdominis muscle
- Conjoint tendon torn from pubic tubercle
- Deficient posterior wall of the inguinal canal
- Dehiscence between conjoined tendon and inguinal ligament
- Entrapment of the ilio-inguinal nerve or genito-femoral nerve
- Tear in the conjoint tendon
- Tear in the fascia transversalis
- Tear of the abdominal internal oblique muscle from the
According to descriptions of AP, symptoms of this condition include pubic point tenderness accentuated by resisted adduction of the hip as well as pain during sporting activities, especially twisting and turning, and hip extension. It has been reported that patients often present with an insidious onset of activity-related, unilateral, deep groin pain that abates with rest. Furthermore, exertions that increase intra-abdominal pressure (e.g., coughing and sneezing) can result in pain. In the early stages, patients may be able to continue participating in athletic activities, but the problem usually worsens.

Diesen and Pappas (2007) stated that the definition of SH/AP is controversial. Diagnosis of AP is established by medical history and physical findings. Although the physical examination reveals no detectable inguinal hernia, it has been reported that a tender, dilated superficial inguinal ring as well as tenderness of the posterior wall of the inguinal canal are frequently found. The role of imaging studies in this condition is unclear; most imaging studies will be normal (Ahumada et al, 2005; Farber and Wilckens, 2007). Some authorities state that imaging studies (e.g., ultrasonography or MRI) may be helpful in evaluating these patients and ruling out other pathology, although no imaging study can rule out SH.

Conservative treatments of AP consist of rest, application of ice 3 to 4 times daily for about 20 to 30 mins, non-steroidal anti-inflammatory drugs, and physical therapy. Patients who fail conservative treatments may be referred for surgical repair. Surgical procedures for athletic pubalgia can be performed laparoscopically. To reinforce the repair and make it stronger, a synthetic mesh-like material is often used. Ahumada et al (2005) stated that surgical intervention with an internal oblique flap reinforced with mesh alleviates symptoms.

Meyers and colleagues (2000) examined the pathophysiological processes of severe lower abdominal or inguinal pain in
high-performance athletes. These investigators evaluated 276 patients; 175 underwent pelvic floor repairs. Of the 157 athletes who had not undergone previous surgery, 124 (79 %) participated at a professional or other highly competitive level, and 138 patients (88 %) had adductor pain that accompanied the lower abdominal or inguinal pain. More patients underwent related adductor releases during the later operative period in the series. Evaluation revealed 38 other abnormalities, which included severe hip problems as well as malignancies. There were 152 athletes (97 %) who returned to previous levels of performance. The syndrome was uncommon in women and the results were less predictable in non-athletes. A distinct syndrome of lower abdominal/adductor pain in male athletes appears correctable by a procedure designed to strengthen the anterior pelvic floor. The location and pattern of pain and the operative success suggested the cause to be a combination of abdominal hyper-extension and thigh hyper-abduction, with the pivot point being the pubic symphysis. The authors stated that diagnosis of AP and surgery should be limited to a select group of high-performance athletes. The major drawback of this study was that it was an uncontrolled study; a control group is important because many athletes with groin injuries improve without surgical interventions.

Fon and Spence (2000) performed a systematic Medline search and all literature pertaining to chronic groin pain, groin injury, SH and sportsman's groin from 1962 to 1999 was retrieved for analysis. The costs of computed tomography and MRI are such that their routine use for assessment of patients with groin pain can not be justified. They may, however, be employed in difficult cases to help define the anatomical extent of a groin injury. Plain radiography, ultrasonography and scintigraphy should be the usual first-line investigations to supplement clinical assessment. Herniography may help in situations of obscure chronic groin and pelvic pain. There is no consensus view supporting any particular surgical procedure for SH. A number of reports have been published describing different repairs of the posterior inguinal wall deficiency. The authors
said that appropriate repair of the posterior wall may result in therapeutic benefit in selected cases. The authors concluded that the diagnosis of SH is difficult. The condition must be distinguished from the more common osteitis pubis and musculo-tendinous injuries. Early surgical intervention is usually, although not always, successful when conservative management has failed.

On the other hand, Fredberg and Kissmeyer-Nielsen (1996) reported that the final diagnosis (and treatment) of SH often reflects the specialty of the doctor and the present literature does not supply proper evidence to the theory that SH constitutes a credible explanation for chronic groin pain. These investigators reviewed the results of 308 operations for unexplained, chronic groin pain suspected to be caused by SH. No differences in peri-operative findings between cured and non-cured athletes were found. However, there was a remarkable difference between the various peri-operative findings in the studies. It was characteristic that further clinical investigation of the non-cured, operated athletes gave an alternative and treatable diagnosis in more than 80% of cases. Herniography was used consistently in the diagnostic process in all the studies on SH. However, in 49% of cases hernias were also demonstrated on the opposite, asymptomatic groin side.

Kaplan and Arbel (2005) stated that findings from medical imaging were found to be inconclusive regarding SH. These researchers also noted that various types of operations, based on the variable theories regarding the pathophysiological process, have been developed for the treatment of this syndrome. Some surgeons focus on the external elements of the inguinal canal, and repair the external oblique fascia or enforce the groin with the rectus abdominis. Others perform an inguinal hernia repair procedure, either with sutures, synthetic mesh, or laparoscopically. Some researchers believe that the problem is in the lower abdominal muscles, or is caused by nerve entrapment, and treat it accordingly. However, there are no controlled comparative data on the results of the various surgical approaches, and there is no evidence that
surgical treatment is more beneficial than conservative
treatments.

Currently, there are no data from randomized studies to
confirm the effectiveness of surgical exploration and repair for
AP (Brook, 2007). Randomized studies are especially important
for pain interventions because of the susceptibility of this
symptom to placebo effects. There is also a lack of
guidelines/position statements from specialty medical societies
regarding the management of this condition. In particular, the
Society for Surgery of the Alimentary Tract's guideline on
surgical repair of groin hernias (2003) as well as the National
Institute for Clinical Excellence's guideline on laparoscopic
surgery for inguinal hernia repair (2004) did not mention AP as
an indication of hernia repair.

In a systematic review on SH, Caudill and colleagues (2008)
summarized existing knowledge regarding SH pathogenesis,
differential diagnosis, conservative treatment, surgery, and
post-surgical rehabilitation. The likely causative factor for SH is
posterior inguinal wall weakening from excessive or high
repetition shear forces applied through the pelvic attachments
of poorly balanced hip adductor and abdominal muscle
activation. There is currently no consensus as to what
specifically constitutes this diagnosis. Since it can be difficult to
make a definitive diagnosis based on conventional physical
examination, other modalities such as MRI and diagnostic
ultrasound are often employed, primarily to rule out other
conditions. Surgery appears to be more effective than
conservative treatment and laparoscopic techniques generally
enable 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 with more detailed
serial patient outcome measurements in addition to basing
success solely on return to sports activity timing. Only with this
information will investigators be able to better understand
SH pathogenesis, verify superior surgical approaches, develop
evidence-based screening and prevention strategies, and more
effectively direct both conservative and post-surgical rehabilitation.

In the discussions following a review article by Meyers et al (2008), several concerns were raised regarding their therapeutic approaches for SH: (i) the time to recovery and any adverse outcomes or complications associated with the procedures should be reported, (ii) a lack of comparative data between surgical procedures and non-operative management, and (iii) a number of patients with normal imaging were operated on; how does one determine who is likely to benefit in this group?

Omar et al (2008) noted that many athletes with a diagnosis of SH or AP have a spectrum of related pathological conditions resulting from musculo-tendinous injuries and subsequent instability of the pubic symphysis without any finding of inguinal hernia at physical examination. The actual causal mechanisms of AP are poorly understood, and imaging studies have been deemed inadequate or unhelpful for clarification.

Morales-Conde and colleagues (2010) stated that SH is a controversial cause of chronic groin pain, as it is difficult to be defined. In the majority of athletic maneuvers, a tremendous amount of torque or twisting occurs in the mid-portion of the body as well as the front of the pelvis accounts for the majority of the force. The main muscles inserting at or near the pubis are the rectus abdominis muscle, which combines with the transversus abdominis. Across from these muscles, and directly opposing their forces, is the abductor longus. These opposing forces cause a disruption of the muscle/tendon at their insertion site on the pubis, so the problem could be related to the fact that the forces are excessive and imbalanced, and a weak area at the groin could be increased due to the forces produced by the muscles. The forces produced by these muscles may be imbalanced and could produce a disruption of the muscle/tendon at their insertion site on the pubis or/and a weak area may be increased due to the forces produced by the muscles, and just this last possibility could be defined as
"SH". The authors concluded that this global entity could be considered to be an imbalance of the muscles (abductor and abdominal) at the pubis, that leads to an increase of the weakness of the posterior wall of the groin and produces a tendon enthesitis, once a true origin is not detected, that may lead to a degenerative arthropathy of the pubic symphysis in the advanced stages. Based on this, this entity could be renamed as "syndrome of muscle imbalance of the groin" and SH could be considered as an entity included in this syndrome. It is recommended that a multi-disciplinary approach is given to this entity, since the present literature does not supply the proper diagnostic studies and the correct treatment that should be performed in these patients.

In a cross-sectional study, Silvis et al (2011) examined the prevalence of pelvic and hip MRI findings and association with clinical symptoms in professional and collegiate hockey players. The study included 21 professional and 18 collegiate hockey players. Self-reported symptoms were measured using a modified Oswestry Disability Questionnaire. Participants underwent 3-T MRI evaluation of the pelvis and hips. The MRI scans were interpreted independently by 3 musculo-skeletal radiologists in 2 sessions separated by 3 months using a 5-point Likert scale to assess for features associated with common adductor-abdominal rectus dysfunction and hip pathology. To estimate prevalence, MRI findings rated 4 or higher on 4 of the 6 interpretations were considered positive. A variance component analysis was applied to determine intra-reader and inter-reader reliability and the lower 95 % confidence limits (CLs). No participants reported symptoms related to pelvic or hip disorders. The MRI findings of common adductor-abdominal rectus dysfunction were observed in 14 of 39 participants (36 %) and hip pathologic changes in 25 of 39 (64 %). There was moderate agreement between readings, with intra-reader and inter-reader reliabilities ranging from 0.37 to 1.00. The inter-reader reliability was less for evaluation of hip pathologic abnormalities than for groin pathologic abnormalities, with the lowest reliability observed in reporting of hip osteochondral lesions (0.37 with lower 95 % CL of 0.22)
and fluid in the primary cleft (0.45 with lower 95 % CL of 0.29) and perfect reliability in the absence of effusion and abdominal rectus tendon tears. Overall, 30 of 39 (77 %) asymptomatic hockey players demonstrated MRI findings of hip or groin pathologic abnormalities. The authors concluded that given the high prevalence of MRI findings in asymptomatic hockey players, it is necessary to cautiously interpret the significance of these findings in association with clinical presentation. They noted that future investigations will determine whether these asymptomatic findings predict future disabilities.

Litwin and colleagues (2011) stated that AP or SH is a syndrome of chronic lower abdomen and groin pain that may occur in athletes and non-athletes. Because the differential diagnosis of chronic lower abdomen and groin pain is so broad, only a small number of patients with chronic lower abdomen and groin pain fulfill the diagnostic criteria of AP (SH). The authors noted that the literature published to date regarding the cause, pathogenesis, diagnosis, and treatment of SH is confusing.

In a case-series study, Larson and colleagues (2011) evaluated the results of surgical treatment in athletes with associated intra-articular hip pathology and extra-articular sports pubalgia. Between December 2003 and September 2009, a total of 37 hips (mean patient age of 25 years) were diagnosed with both symptomatic AP and symptomatic intra-articular hip joint pathology. There were 8 professional athletes, 15 collegiate athletes, 5 elite high school athletes, and 9 competitive club athletes. Outcomes included an evaluation regarding return to sports and modified Harris Hip Score, Short-Form 12 score, and visual analog scale score. These investigators evaluated 37 hips at a mean of 29 months (range of 12 to 78 months) after the index surgery. Thirty-one hips underwent 35 AP surgeries. Hip arthroscopy was performed in 32 hips (30 cases of femoro-acetabular impingement [FAI] treatment, 1 traumatic labral tear, and 1 borderline dysplasia). Of 16 hips that had AP surgery as the index procedure, 4 (25 %) returned to sports without limitations, and 11 (69 %) subsequently had hip arthroscopy at a mean of 20 months.
after AP surgery. Of 8 hips managed initially with hip
arthroscopy alone, 4 (50 %) returned to sports without
limitations, and 3 (43 %) had subsequent pubalgia surgery at a
mean of 6 months after hip arthroscopy. Thirteen hips had AP
surgery and hip arthroscopy at one setting. Concurrent or
eventual surgical treatment of both disorders led to improved
post-operative outcomes scores (p < 0.05) and an unrestricted
return to sporting activity in 89 % of hips (24 of 27). The
authors concluded that when surgery only addressed either the
AP or intra-articular hip pathology in this patient population,
outcomes were suboptimal. Surgical management of both
disorders concurrently or in a staged manner led to improved
post-operative outcomes scoring and an unrestricted return to
sporting activity in 89 % of hips.

Hammond et al (2012) identified the incidence of symptoms
consistent with AP in athletes requiring surgical treatment for
FAI and the frequency of surgical treatment of both AP and FAI
in this group of patients. A total of 38 consecutive professional
athletes, with a mean age of 31 years, underwent arthroscopic
surgery for symptomatic FAI that limited their ability to play
competitively. In all cases a cam and/or focal rim osteoplasty
with labral refixation or debridement was performed. In 1 case
concomitant intra-muscular lengthening of the psoas was
performed. Retrospective data regarding prior AP surgery and
return to play were collected. Thirty-two percent of patients
had previously undergone AP surgery, and 1 patient underwent
AP surgery concomitantly with surgical treatment of FAI. No
patient returned to his previous level of competition after
isolated AP surgery. Thirty-nine percent had AP symptoms that
resolved with FAI surgery alone. Of the 38 patients, 36
returned to their previous level of play; all 12 patients with
combined AP and FAI surgery returned to professional
competition. The mean duration before return to play was 5.9
months (range of 3 to 9 months) after arthroscopic
surgery. The authors concluded that there is a high incidence of
symptoms of AP in professional athletes with FAI of the hip.
This study drew attention to the overlap of these 2 diagnoses
and high-lighted the importance of exercising caution in
There is limited evidence that compare the effectiveness of surgical intervention to conservative management of AP. While some studies found that open or laparoscopic surgery may provide successful outcomes in treating this condition, these studies were usually of low quality and did not appropriately compare the effectiveness of AP surgery to conservative management. Furthermore, there is a lack of consensus regarding the etiology, diagnosis, and treatment of AP; more research is needed to ascertain the clinical value of surgical treatment for AP.

An UpToDate review on “Sports-related groin pain or 'sports hernia'” (Brooks, 2014) states that “Surgical exploration and repair is the mainstay of treatment for sports hernia, although few randomized trials have been performed to confirm the effectiveness of this approach .... When symptoms do not resolve with rest and appropriate conservative therapy, we suggest surgical repair (Grade 2C”). (A Grade 2 recommendation is a weak recommendation; and Grade C means low-quality evidence: Evidence from observational studies, unsystematic clinical observations, or from randomized trials with serious flaws).

In a multi-center, retrospective, case-series study, Matsuda and colleagues (2015) examined the outcomes of athletic patients treated with concurrent FAI and osteitis pubis (OP) surgery including endoscopic pubic symphysectomy. A total of 7 consecutive adult patients (4 men) with a mean age of 33 years with symptomatic FAI and OP who underwent arthroscopic surgery for the former and endoscopic pubic symphysectomy for the latter with a mean follow-up period of 2.9 years (range of 2.0 to 5.0 years) were included in the study. The visual analog scale (VAS) score, the Non-Arthritic Hip Score (NAHS), and patient satisfaction were measured. Complications and revision surgical procedures were reported, and pre-operative and post-operative radiographs were assessed. The mean pre-operative VAS score of 6.7 (range of 4 to 8) improved to a
mean post-operative VAS score of 1.5 (range of 0 to 7) (p = 0.03). The mean pre-operative NAHS of 50.2 points (range of 21 to 78 points) improved to a mean post-operative NAHS of 84.7 points (range of 41 to 99 points) (p = 0.03). The mean patient satisfaction rating was 8.3 (range of 3 to 10). Two male patients had post-operative scrotal swelling that resolved spontaneously. There were no other complications.

Pre-operative and post-operative radiographs showed no anterior or posterior pelvic ring instability. One patient underwent pubic symphyseal arthrodesis because of continued pain. The authors concluded that endoscopic pubic symphysectomy is a minimally invasive treatment for athletic OP with encouraging early outcomes that may be performed concurrently with surgery for FAI in co-afflicted patients.

Serner et al (2015) stated that groin pain in athletes is frequent and many different treatment options have been proposed. The current level of evidence for the effectiveness of these treatments is unknown. These investigators systematically reviewed the literature on the effectiveness of treatments for groin pain in athletes; 9 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; n greater than 10; outcome measures describing number of recovered athletes, patient satisfaction, pain scores or functional outcome scores. One author screened search results, and 2 authors independently assessed study quality. A best evidence synthesis was performed. Relationships between quality score and outcomes were evaluated. A total of 72 studies were included for quality analysis; 4 studies were high quality. There is moderate evidence that, for adductor-related groin pain, active exercises compared with passive treatments improve success, multi-modal 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. There was a moderate and
inverse correlation between study quality and treatment success ($p < 0.001, r = -0.41$), but not between study quality and publication year ($p = 0.09, r = 0.20$). The authors concluded that only 6% of publications were high quality. Low-quality studies showed significantly higher treatment success and study quality has not improved since 1985. They stated that there is moderate evidence for the effectiveness of conservative treatment (active exercises and multi-modal treatments) and for surgery in patients with adductor-related groin pain. There is moderate evidence for effectiveness of surgical treatment in sportsman's hernia.

In summary, there is a lack of evidence-based consensus/data regarding the surgical treatment of athletic pubalgia.

**Core Muscle Injury:**

Ross and associates (2015) stated that core muscle injury/AP/SH is an increasingly recognized source of pain, disability, and time lost from athletics. Groin pain among athletes, however, may be secondary to various etiologies. A thorough history and comprehensive physical examination, coupled with appropriate diagnostic imaging, may improve the diagnostic accuracy for patients who present with core muscular injuries. Outcomes of non-operative management have not been well-delineated, and multiple operative procedures have been discussed with varying return-to-athletic activity rates.

de Sa and colleagues (2016) noted that athletic groin pain requiring surgery remains a diagnostic and therapeutic challenge. In a systematic review, these researchers identified the most common causes of groin pain in athletes requiring surgery. They also characterized susceptible athlete profiles, common physical examination and imaging techniques, and surgical procedures performed. The electronic databases Medline, PubMed and Embase were searched from database inception to August 13, 2014 for studies in English that addressed athletic groin pain necessitating surgery. The search was updated on August 4, 2015 to find any articles published
after the original search. The studies were systematically screened and data were abstracted in duplicate, with descriptive data presented. A total of 73 articles were included within this review, with data from 4,655 patients abstracted. Overall, intra-articular and extra-articular causes of groin pain in athletes requiring surgery were equal. The top 5 causes for pain were: (i) FAI (32 %), (ii) AP (24 %), (iii) adductor-related pathology (12 %), (iv) inguinal pathology (10 %), and (v) 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 needed to ascertain the finer details regarding specific examination maneuvers, imaging views and surgical outcomes to best treat this patient population.

**Intra-Tissue Percutaneous Electrolysis:**

Moreno et al (2016) stated that rectus abdominis-related groin pain (RAGP) is one of the possible clinical patterns that determine pubalgia. It is one of the typical clinical patterns in footballers and is due to the degeneration/tendinopathy of the distal tendon at the level of the 2 pubic tubercles. Intra-tissue percutaneous electrolysis (EPI) is a recent technique used in the treatment of tendinopathies. In a consecutive case-series, pilot study, these researchers examined the therapeutic benefits of EPI by contrasting the 2 basic components that characterize RAGP: (i) painful symptoms and (ii) resultant functional deficits. A total of 8 professional footballers were enrolled in this study. The footballers underwent ultrasound-guided EPI treatment. No other type of treatment was combined with EPI. Pain was monitored with the Verbal Rating Scale, while functional deficit was monitored using the Patient Specific Functional Scale. The scales implementation took place before treatment, then 24 hours, 1 week, 1 month and 6 months after the end of treatment. Treatment with EPI produced a complete reduction of pain symptoms in 1 month and enabled excellent functional recovery for walking and jogging in 1 week; getting out of bed,
running, jumping and kicking within 1 month from the end of the treatment. The authors concluded that treatment with ultrasound-guided EPI has shown encouraging clinical results for RAGP. They stated that data are preliminary considering the limitations of this study; and more complex study designs are needed to determine the effectiveness of the technique.

**Pulse-Dose Radiofrequency:**

In a prospective non-randomized, single-group, study, Masala and colleagues (2015) examined the role of pulse-dose radiofrequency (PDR) in athletes with chronic pubalgia. Pulse-dose radiofrequency was carried out in 32 patients with a chronic pain refractory to conservative therapies during the last 3 months. The genital branches of the genitor-femoral, ilio-inguinal and ilio-hypogastric nerves and the obturator nerve were the targets of treatment. A 10-cm, 20-gauge cannula was inserted with a percutaneous access on the upper and lower edge of the ilio-pubic branch. After the spindle was removed, a radiofrequency needle with a 10-mm "active tip" was inserted. The radiofrequency technique was performed with 1,200 pulses at 45 V and 20 milliseconds duration, followed by a 480 milliseconds silent phase. The follow-up with a clinical examination was performed at 1, 3, 6 and 9 months after the procedure. During the follow-up visits, the patients were asked to rate their pain on a 0 to 10 VAS Scale. All of the enrolled patients completed the study. Mean VAS score before the treatment was 8.4 ± 0.6; 24 patients reported a reduction of pain VAS scores of more than 50 % during all follow-up visits and started trainings and physiotherapy the following days after the radiofrequency procedure; 6 patients, who were treated 2 times, reported a reduction more than 50 % of VAS scores and were able to start trainings and physiotherapy, only after the 2d procedure. A patient had no pain relief with 2 treatments. Pain intensity decreased up to 9 months in 31 patients (means VAS scores of 3.4 ± 0.5 at 6 months and 3.8 ± 0.9 at 9 months). No complications were observed. The authors concluded that PDR is a safe and effective technique in management of chronic pubalgia in athletes. These preliminary findings need to be
validated by well-designed studies.

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<th>CPT Codes / HCPCS Codes / ICD-10 Codes</th>
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Information in the [brackets] below has been added for clarification purposes. Codes requiring a 7th character are represented by "+":

ICD-10 codes will become effective as of October 1, 2015:

There is no specific code for athletic pubalgia surgery:

The above policy is based on the following references:

2008;42(12):954-964.
21. Brooks DC. Sports-related groin pain or 'sports hernia'.
   UpToDate [serial online]. Waltham, MA: UpToDate; reviewed July 2014.
22. Matsuda DK, Ribas M, Matsuda NA, Domb BG.
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Amendment to
Aetna Clinical Policy Bulletin Number: 0750
Athletic Pubalgia Surgery

There are no amendments for Medicaid.