Athletic Pubalgia Surgery

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Related Coverage Resources

eviCore Adult Musculoskeletal Imaging Guideline

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Coverage Policy

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

Overview

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

General Background

Athletic pubalgia is a painful strain or tear of any soft tissue (muscle, tendon, ligament) in the lower abdomen or groin area. Athletic pubalgia is sometimes referred to as a sports hernia; however, this is an inaccurate and misleading term because it is not an actual hernia.

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. 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
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.

Paajanen et al. (2011) conducted a randomized controlled trial on 60 athletes with groin symptoms that had persisted for 3-6 months in order to compare the efficacy of surgery with insertion of polypropylene mesh to non-operative treatment. The diagnosis of groin pain was based on patient history, physical examination, and radiologic imaging studies. Paajanen et al. stated the patients had chronic groin pain and suspected sportsman’s hernia, noting common causes for chronic groin pain include adductor tendinitis and musculus rectus abdominis tendopathy, osteitis pubis, or disruption of the posterior wall of inguinal canal, which are all different forms of athletic pubalgia. Paajanen et al. also stated sportsman’s hernia (also called ‘athletic pubalgia’) is a deficiency of the posterior wall of the inguinal canal, which is often repaired by laparoscopic mesh placement. In this study, no participants were lost during the 12 months of follow-up. The athletes were randomized either to undergo operation or start an active physical therapy for two months. Patients in the latter (non-operative) group were then encouraged to gradually begin their sports activity. If groin symptoms persisted and the patient was motivated to operative treatment, operative therapy was offered after three months of conservative therapy. Operative treatment was performed by endoscopic, total extraperitoneal (TEP) mesh placement behind the pubic bone and/or posterior wall of the inguinal canal. Of the 30 athletes who underwent operation, 27 (90%) returned to sports activities after three months of convalescence compared to 8 (27%) of the 30 athletes in the non-operative group (p< .0001). Of the 30 athletes in the conservatively treated group, seven (23 %) underwent operation later because of persistent groin pain. Although this small trial indicated that the endoscopic placement of retropubic mesh was more efficient than conservative therapy for the treatment of sportsman’s hernia (athletic pubalgia), additional larger, well-designed trials are needed.

In a non-comparison trial, van Veen et al. (2007) prospectively studied 55 athletes with undiagnosed chronic groin pain to report return to sport outcomes after undergoing surgery. van Veen et al. stated Gilmore’s groin, incipient hernia, occult hernia, athletic pubalgia, sports hernia, sportsman’s hernia, groin disruption, and conjoint tendon injury can best be described as incompetent abdominal wall musculature in the absence of a clinically detectable hernia (bulge). van Venn et al. also stated sportman’s hernia is characterized by insidious-onset, gradually worsening, diffuse groin pain. It may radiate along the inguinal ligament, perineum, and rectus
muscles. Radiation of pain across the midline, down the inside of the thigh into the adductor area, and into the scrotum and testicles is present in about 30% of symptomatic patients. In this prospective study, the pain existed for at least three months and did not respond to conservative therapy such as prolonged rest, physiotherapy, and adequate pain medication. All the patients underwent an endoscopic TEP mesh placement. During the procedure, the incipient hernia or sportsman’s hernia was diagnosed 15 times (27%) on the right side, 12 times (22%) on the left side, and nine times (16%) bilaterally. Inguinal hernia was found in 20 patients (36%). Within 6-8 weeks, 48 of the patients (88%) returned to normal sports activities without groin pain. The authors propose that if no clear pathology is identified, reinforcement of the wall using a mesh offers good clinical results for athletes with idiopathic groin pain. This prospective study was not comparative, and reported diagnosing sports hernia during the repair surgery.

Roos et al. (2018) prospectively studied 32 athletes with inguinal disruption and failed conservative treatment who underwent surgery. When inguinal disruption was suspected, patients were referred to the department of surgery where physical examination by an experienced hernia surgeon and additional imaging were performed (ultrasound, X-pelvis/hip, and MRI). All patients underwent endoscopic totally extraperitoneal (TEP) repair with placement of polypropylene mesh. At long-term follow-up, the median pain score was 0 (p < 0.001). At 3 months, 60% of patients were able to complete a full training and match. Three months postoperatively, improvement was shown on all physical functioning subscales.

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.

Santilli et al (2015) retrospectively reported on the outcomes of pain control and return to sports following laprascopic surgery. Of a total of 1450 athletes referred to the sports center, 590 of them were diagnosed through physical examination and ultrasound with sports hernias. The author reported finding 84 sport hernias in 769 patients with previous diagnosis of adductor muscle strain (10.92 %); on the other hand, in 127 (21.52 %) of patients with sport hernias US detected concomitant injuries of the adductor longus tendon, seven of which merited additional surgical maneuvers (partial tenotomy). All had experienced long term chronic pain of the inguino-crural region or pubalgia. Conservative treatments were tried out (in 529 cases physical therapy and in 40 physical therapy plus infiltration with local anesthetics and corticosteroids), without obtaining response or with transient improvement followed by recurrence of pain upon restarting sports activity. Laprascopic transabdominal preperitoneal (TAPP) approach was performed. Postoperative contact (personal and telephone interviews) was maintained up to 36 months in 299 patients (50.67 %). Compared with the findings of laparoscopy, ultrasound had a sensitivity of 95.42 % and a specificity of 100 %; the positive and negative predictive values were 100 and 99.4 % respectively. No postoperative complications were reported. Only seven patients suffered recurrence of pain (successful rate: 98.81 %). A total of 583 patients resumed sport activity within 30 days of the procedure. The authors concluded that a multidisciplinary approach in which patients are initially evaluated by orthopedic surgeons in order to discard the most common causes of ‘pubalgia’ is recommended. They note that sports hernias are often associated with adductor muscle strains and other injuries.

In a retrospective review, Zoland et al. (2017) described the experience of a tertiary group of physicians specializing in groin pain and athletic pubalgia. A retrospective search for all MRIs performed on patients referred for an indication of groin pain, sports hernia, or athletic pubalgia revealed 117 patients in the studied time period. Patients (68%) had an MRI finding of athletic pubalgia, 67 (57%) had an acetabular labral tear in one or both hip joints, and 41 (35%) had a true inguinal hernia. Concomitant findings were common: 47 cases of athletic pubalgia and labral tear(s), 28 cases of athletic pubalgia and inguinal hernia, and 15 cases of all three (athletic pubalgia, labral tear, inguinal hernia). On 24 of the 119 MRIs, the Valsalva maneuver either revealed the finding or made it significantly more apparent. Of the 79 patients with MRI-positive athletic pubalgia:
• 39 patients subsequently underwent surgery, and 31 (79%) of these were followed up by telephone. Mean duration of rest after surgery was 6.2 weeks. Twelve patients (39%) had physical therapy after surgery, some as early as four weeks, and some have continued their therapy since surgery. Of the 31 patients who were followed up after surgery, 23 (74%) resumed previous activity levels. Return to previous activity level took these patients a mean of 17.9 weeks. When asked if outcomes satisfied their expectations, 28 patients (90%) said yes, and three said no.

• 40 patients with MRI-positive athletic pubalgia were non-operatively treated, and 28 (70%) of these patients were followed up. In this group, mean duration of rest after surgery was 6.9 weeks. Thirteen patients (46%) participated in physical therapy, for a mean duration of 10.8 weeks. Of the patients followed up, 19 (68%) returned to previous activity level. Twenty-one patients (75%) were satisfied with their outcome.

Rossidis et al. (2015) conducted a retrospective review of a prospective database of 54 athletes with athletic pubalgia to report return to sports outcomes following surgery. A preoperative MRI was performed on 76% of patients; 20 had no findings and only one patient was noted to have an inguinal hernia present on MRI. All patients failed medical therapy with physiotherapy prior to undergoing a laparoscopic totally extraperitoneal (TEP) inguinal hernia repair with synthetic mesh and ipsilateral adductor longus tenotomy. All patients followed a strict rehabilitation regimen, and all patients were able to return to full sports-related activity in 24 days (range 21–28 days). One patient developed subsequent pain 6 months following his initial operation requiring a contralateral adductor longus tenotomy, and one patient sustained an adductor brevis hematoma 3 months after the completion of rehabilitation and surgical intervention.

Kajetanek et al. (2018) retrospectively reported on 27 athletes with athletic pubalgia diagnosed on a 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 imaging studies consisted of an ultrasound scan and either a radiograph or magnetic resonance imaging (MRI) scans of the pelvis. Surgery strategy differed depending on whether the injury involved the lower abdominal wall and/or the adductor tendons. Of the 27 included patients, eight had abdominal wall involvement only, seven adductor tendon involvement only, and 12 both. Overall, 25 (92.6%) patients returned to play (RTP) at their previous level, after a mean of 112 ± 38 days (range, 53–223 days), and experienced no recurrence during the 1-year follow-up. Mean RTP time was significantly shorter in the group with abdominal wall injury only (91.1 ± 21.0 days) compared to the groups with adductor tendon injury only (101.7 ± 42.0 days) or combined injuries (132.5 ± 39.0) (p = 0.02).

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.
Use Outside of the US

British Hernia Society: The British Hernia Society published a position statement in 2014 based on the results of a consensus conference attended by experts in the diagnosis and management of “sportsman’s groin” (Sheen et al., 2014). The group adopted the term inguinal disruption as the preferred nomenclature for the condition. With regard to treatment, the group agreed that a multidisciplinary approach is required. A physiotherapist, orthopedist, and a hernia surgeon are key members of the multidisciplinary team. Essential components of assessment include radiologic imaging to exclude other conditions, and careful examination. Initial treatment should include a full, tailored physiotherapy program before surgery is considered. If conservative treatments fail, surgical and operative interventions should be dependent on the surgeon’s experience, and the aim should be to release abnormal tension in the inguinal canal and support weakness in the posterior wall (Hayes, 2016).

European Association of Endoscopic Surgery (EAES): The EAES Consensus Development Conference (Poelman et al., 2013) concluded that: (1) a multidisciplinary team should be involved in evaluating and diagnosing causes of groin pain; (2) magnetic resonance imaging is the preferred imaging modality; and (3) endoscopic placement of a mesh in the groin is effective in athletes with a sportsman’s hernia (Hayes, 2016).

Coding/Billing Information

Note: 1) This list of codes may not be all-inclusive.
     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:

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<thead>
<tr>
<th>CPT® Codes</th>
<th>Description</th>
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<tbody>
<tr>
<td>49659</td>
<td>Unlisted laparoscopy procedure, hernioplasty, herniorrhaphy, herniotomy</td>
</tr>
<tr>
<td>49999</td>
<td>Unlisted procedure, abdomen, peritoneum, and omentum</td>
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References


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