

# Chronic Groin Pain in Athletes: Sportsman's Hernia with Bilateral Femoral Hernia

Mayank Jain • Om Tantia • Prakash Sasmal •  
Shashi Khanna • Bimalendu Sen

Received: 17 November 2008 / Accepted: 29 November 2008 / Published online: 18 November 2010  
© Association of Surgeons of India 2010

**Abstract** The differential diagnosis of chronic groin pain in athletes is a long list and its evaluation is a challenging task. Sports hernia, one of the common cause of these groin pains, had been managed both with open & endoscopic repairs in the past. We report a case of sports hernia in young footballer who presented with bilateral groin pain for 5 years. Endoscopic hernioplasty was done (by totally extra-peritoneal technique) which identified bilateral occult femoral hernia and were repaired simultaneously. Post op outcome was good with excellent results.

**Keywords** Groin pain • Sportsman's hernia • Femoral hernia

## Introduction

The evolution of chronic groin pain in athletes is a challenging task. The differential diagnosis includes various possibilities like osteitis pubis, stress injury involving the pubic bones, nerve entrapment, origin lesions of adductor muscle and “sports hernia” to name a few. These so called sports hernia are also known by other names like “Gillmore's hernia”, athletic pubalgia, “sportsman's hernia”, athletic hernia and many more and are usually characterized by symptomatic non-palpable hernia amongst athletes with or without a positive cough impulse [1]. These have also been defined as the phenomenon of chronic, activity related groin pain unresponsive to conservative therapy and significantly improved with surgical repair [2]. They have a variable incidence amongst the athletes which ranges from 36%–90%

[3]. We present a case report of a young male athlete (footballer) who had similar complains.

## Case Report

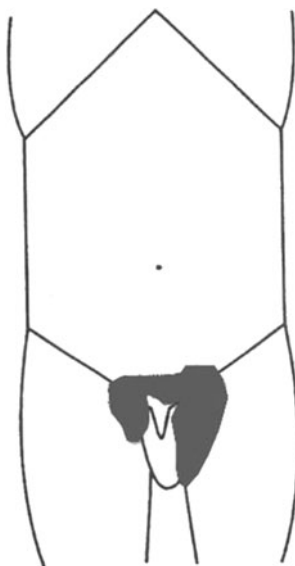
A 26 year old male footballer presented with the complain of bilateral groin pain for last two years. He had been playing club level football for last 5 years and had felt the groin pain two years back. The pain was initially felt on the left side and used to appear after the match during sleep at the same night or on the following day and was deep and dull in nature. The pain used to last for 24–48 hours. Progressively the pain started appearing towards the end of the game and was bilateral. For the last four months the pain was very severe and was felt early on in the first half of the game itself. This resulted in reduced performance and early retirement from most of the matches in these four months. The patient already had treatment in the form of prolonged periods of rest, physiotherapy and NSAIDs which although had some symptomatic improvement but the pain used to recur on repeated training or during the next game.

The insidious onset, gradual worsening and diffuse nature of the groin pain pointed towards a non-traumatic pathology. The patient was asked to identify the areas of pain by shading them on pain diagram as shown in Fig. 1. Typically the pain was worst on the left side but was extending across the midline and was involving the medial side of both thigh into the adductor area and the scrotum.

On clinical examination of both the groins, there was no obvious swelling or injury mark on either side. Scrotum was normal in size and symmetrical. There were no areas of paraesthesia or deep tenderness on either side amongst the

M. Jain (✉) • O. Tantia • P. Sasmal • S. Khanna • B. Sen  
Institution of Laparoscopic Surgery,  
Kolkata, India  
e-mail: mayank\_dr@yahoo.co.in

**Fig. 1** Areas of groin pain as shown by the patient



shaded area. Although no hernia could be identified, cough impulse test was weakly positive on the left side. Adductor stretch test was slightly painful on the left side but there was no tenderness around the belly or the origin of the group. The pubic tubercles were non-tender. Patient underwent radiograph of the pelvis to look for osteitis pubis / stress injury of the pubic bones and was found to be within normal limits. Groin and scrotal ultrasonography (USG) failed to show any evidence of hernia, adductor tendinitis or testicular disease.

On the basis of these findings the patient was diagnosed to be having the weakness of posterior inguinal wall without a clinically apparent hernia as a cause of his groin pain. It was therefore planned to examine both the groins by minimally invasive technique—totally extra-peritoneal repair (TEP) and strengthen the weakness of posterior wall by mesh placement.

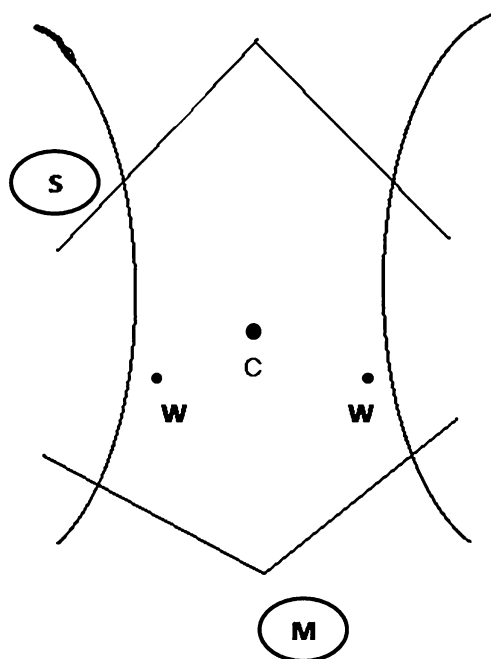
Patient was operated under general anesthesia and standard port placement was done as shown in Fig. 2. The technique of dissection is the same as in TEP repair of groin hernia. Per-operatively both groins showed the presence of femoral hernia, left bigger than the right Fig. 3 and were dissected and reduced Fig. 4. 13×15 cm Prolene mesh (Ethicon, Somerville, New Jersey, USA) was placed on each side after adequate parietalisation of cord structures and fixed with tacks (Protack, Autosuture, Tyco Healthcare, United States Surgical) taking standard precautions. Post operative outcome was uneventful and the patient was discharged the next day. He was advised to withhold training and matches for 4 weeks after which he could gradually start his exercise and training schedule over next 8 weeks. By 12 weeks, he was fit to participate in the match. At a follow up of one year, he is pain free and fully active in his training schedule and sport activity.

## Discussion

Chronic groin pain is not uncommon in athletes and has a long list of differential diagnosis which includes muscle strain, adductor tendonitis, ostitis pubis, bursitis, sportsman's hernia, inguinal/femoral hernia, connective tissue disorder, nerve entrapment, lymphadenopathy, myositis ossificans, prostatitis, epididymitis, hydrocele, varicocele, testicular neoplasm and testicular torsion to name a few [3–5].

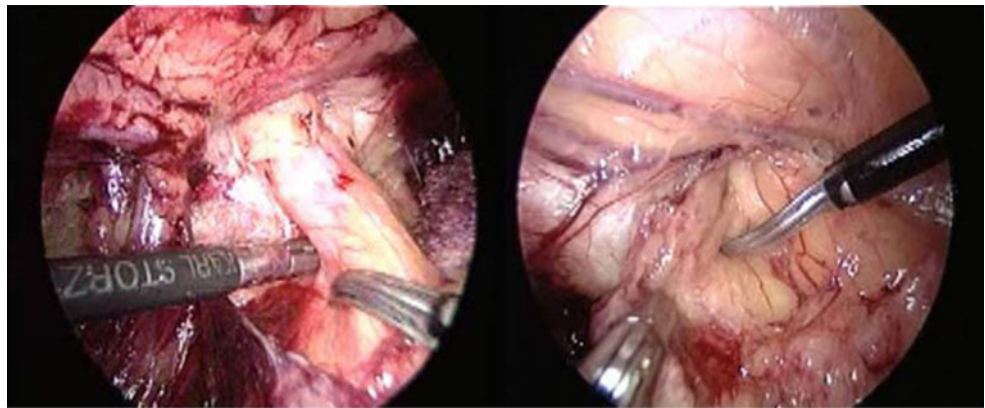
These patients therefore need special attention in terms of elaborate history taking and clinical examination. Exact location and nature of pain (superficial or deep) should be identified with special stress on areas of tenderness if any. Adductor tendonitis and ostitis pubis is a common finding and should be looked for clinically by pubic bone or pubic tubercle tenderness adductor stretch test which will be painful and cause tenderness around the belly and origin of the muscle group. Radiographs of the pelvis should be done in all cases and bone scans may be initiated if there is a strong suspicion of ostitis pubis. USG of the inguino-scrotal region with color doppler may help in identifying groin hernias, adductor muscle tendinitis and various scrotal pathologies including hydrocele/ varicocele, torsion, tumour, epididymitis etc.

The syndrome of weakness of posterior inguinal wall without a clinically recognizable hernia (sportsman's hernia) causing chronic groin pain is not widely appreciated. They may develop due to the mismatch between adductor and lower abdominal muscle strength. Shearing forces across the hemi-pelvis created by the strong pull of adductor muscles



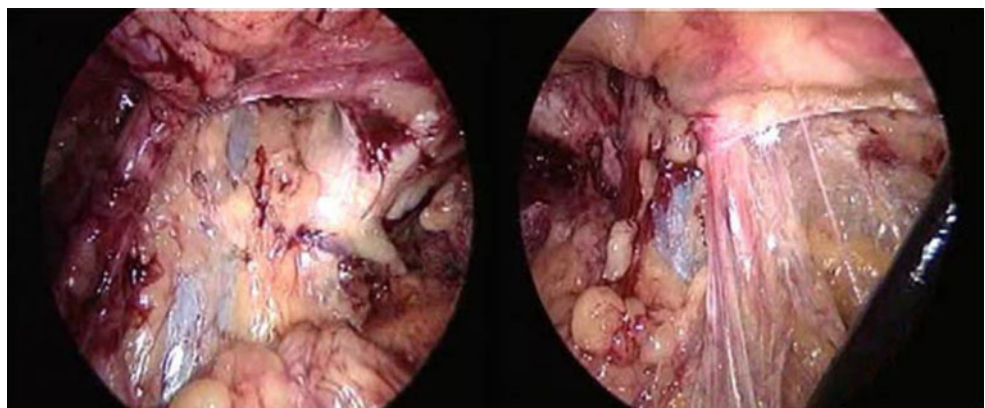
**Fig. 2** Port positions for endoscopic repair of groin hernia. C-Camera Port, W-Working ports, S-Surgeon, M-Monitor

**Fig. 3** Endoscopic view of left and right groin. Femoral hernia is seen on both sides



against the relatively unconditioned abdominal muscles may create attenuation or frank tearing of the transversalis fascia and overlying musculature. The theory of posterior wall weakness as the prime cause of groin pain in athletes is supported by the fact that placement of mesh resolves the problem of posterior weakness in inguinal wall. [5, 6]. However, to find bilateral femoral hernia (both occult) in such a patient with posterior wall weakness and chronic groin pain is rare but can be an independent or add on cause of this pain and can be managed endoscopically with excellent results. Surgical intervention in such cases is considered following a trial of conservative treatment which includes application of heat or ice, stretching and strengthening exercises and other physical therapy interventions. Although these hernias can be treated in the similar manner (conventional open technique) as clinical groin hernias in general population [1] the choice of endoscopic repair may help in identifying and managing small hernias of myo-pectineal orifice together with simultaneous strengthening of the posterior inguinal wall and ability to repair bilateral defects with excellent results [7]. Endoscopic repair may also help in resuming the training early on. In one study it was found that 13 of the 14 athletes that had endoscopic repair were able to resume training with in four weeks while only 9 of the 14 that had conventional repair were able to do so[4].

**Fig. 4** Endoscopic view of both groin after dissection. Both femoral hernias had been dissected reduced



The most commonly cited operative finding is a posterior wall weakness (transversalis defect) [1, 8, 9]. Other operative findings include previously undiagnosed hernias [3, 7, 8, 10], defects of external oblique aponeurosis or conjoint tendon abnormalities [8, 11, 12], ilio-inguinal nerve entrapment [11] or lipoma or lymph nodes near inguinal canal [7]. It must be noted that operative finding will be somewhat dependant on whether an open or laparoscopic approach is taken. Most open approaches evaluate the insertion of rectus, external oblique aponeurosis and conjoint tendon for abnormalities while laparoscopic repair assumes that the cause of pain is from an incipient hernia or subtle posterior wall deficiency.

According to some studies, laparoscopic repair may not address the pathology if the defect occurred on the external oblique aponeurosis, the conjoint tendon or insertion of rectus [1, 8, 9, 12]. Meyers claims that he has performed successful open procedure in 200 athletes who had previous laparoscopic or “incorrect” open procedure [12]. However the results reported in literature for laparoscopic repair are uniformly good with a combined success rate of 95% [3, 7, 10]. This has been attributed to general fibrosis occurring after any surgery that acts to stabilize the anterior pelvis [12].

During the recovery phase, rehabilitation should avoid sudden, sharp movements and emphasis should be given on isometric adductor and abdominal exercises.

To conclude endoscopic repair of sports hernia is safe and effective and has an added advantage of bilateral groin dissection and identification of occult hernias.

## References

1. Hackney R (1993) The sports hernia: a cause of chronic groin pain. *Br J Sports Med* 27:58–62
2. Harmon KG (2007) Evaluation of groin pain in athletes. *Curr Sports Med Rep* 6:354–361
3. Kluin J, den Hoed PT, van Linschoten R, IJzerman JC, van Steensel CJ (2004) Endoscopic evaluation and treatment of groin pain in athlete. *Am J Sports Med* 32:944–949
4. Ingoldby CJ (1997) Laparoscopic and conventional repair of groin disruption in sportsmen. *Br J Surg* 84:213–215
5. Malycha P, Lovell G (1992) Inguinal surgery in athletes with chronic groin pain: the “sportsman’s” hernia. *Aust NZ J Surg* 62:123–125
6. Akita K, Niga S, Yamato Y, Muneta T, Sato T (1999) Anatomic basis of chronic groin pain with special reference to sports hernia. *Surg Radiol Anat* 21:1–5
7. Van Veen RN, de Baat P, Heijboer MP, Kazemier G, Punt BJ, Dwarkasing RS, Bonjer HJ, van Eijck CHJ (2007) Successful endoscopic treatment of chronic groin pain in athletes. *Surg Endosc* 21:189–193
8. Polglase AL, Frydman G, Farmer K (1991) inguinal surgery for debilitating chronic groin pain in athletes. *Med J Aust* 155:674–677
9. Kumar A, Doran J, Batt ME et al (2002) Results of inguinal canal repair in athletes with sports hernia. *J R Coll Surg Edinb* 47:561–565
10. Genistaris M, Goumaris I, Sikas N (2004) Laparoscopic repair of groin pain in athletes. *Am J Sports Med* 32:1238–1242
11. Irshad K, Feldman LS, Lavoie C et al (2001) Operative management of “hockey groin syndrome”: 12 years of experience in National Hockey League players. *Surgery* 130:759–766
12. Meyers WC, Lanfranco A, Castellanos A (2002) Surgical management of chronic lower abdominal and groin pain in high-performance athletes. *Curr Sports Med Rep* 1:301–305

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.