

# Osteitis Pubis

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The task of diagnosing and managing groin pain in the athlete represents a formidable challenge for sports medicine experts. Osteitis pubis should be considered in all athletes with groin pain, especially those athletes who participate in forceful kicking or running sports. Athletic osteitis pubis is believed to be caused by microtrauma and/or instability of the pubic symphysis, in contrast to obstetrical and urologic osteitis pubis, which are not associated with sporting activity. Osteitis pubis has been identified in a variety of sports including fencing, ice hockey, wrestling, Olympic walking, rugby, tennis, running, football, diving, and basketball. In athletes, osteitis pubis may evolve into a chronic, painful, disabling condition causing significant amounts of lost playing and practice time. Nonoperative treatment is successful in the majority of cases; however, complete recovery may take months. For cases that are recalcitrant to conservative treatment, surgical procedures addressing the abnormal pubic symphysis inflammation and instability have been described. Before surgery, it is critical that the clinician is certain of the diagnosis and that other disorders causing groin pain are ruled out. This article will take a detailed look at osteitis pubis and the procedures designed to treat this disorder when nonoperative measures fail.

Oper Tech Sports Med 13:62-67 © 2005 Elsevier Inc. All rights reserved.

**KEYWORDS** pubalgia, groin strain, adductor strain, gracilis syndrome, osteitis pubis, sports hernia, sportsman hernia, hockey groin syndrome

Osteitis pubis in the athlete is a painful, inflammatory, noninfectious, condition of the pubic symphysis and surrounding structures.<sup>1-5</sup> Most of the early literature on this subject emerged from the field of urology and was associated with complications such as infections and surgical trauma.<sup>1,2,3,5</sup>

There are 4 primary clinical types: (1) noninfections osteitis pubis associated with urologic procedures, gynecologic procedures, and pregnancy; (2) infectious osteitis pubis associated with local or distant infection loci; (3) sports-related or athletic osteitis pubis; and (4) degenerative/rheumatologic osteitis pubis. It is imperative that all factors, such as infections, urologic, gynecologic, and rheumatologic issues, are taken into consideration when osteitis pubis is being worked up and managed.

The pathogenesis of this disorder remains obscure. Among athletes, the etiology is considered to be associated with muscle imbalance, pelvis instability,<sup>4,6</sup> and chronic overuse injury to the bone and joint.<sup>4,5,7-10</sup> Muscle imbalance between the abdominal wall musculature and hip

adductor muscles has been suggested as a major etiologic factor.<sup>9,10</sup> The muscles implicated include the rectus abdominus, gracilis, and adductors longus.<sup>5,8</sup> The abdominal and adductor muscles have a central point attachment on the symphysis pubis but act antagonistically to each other, predisposing the pubic symphysis to harmful forces and microtrauma. These antagonistic forces are most prevalent in kicking sports, such as soccer or football (Fig. 1). Abnormal vertical motion of the pubic symphysis, greater than 2 mm, is considered a contributing factor.<sup>11</sup> It is unclear if the inflammation process of osteitis pubis causes the increased vertical motion or if osteitis pubis is antecedent to the increased vertical motion. An evaluation of pubic symphysis vertical motion with single-leg standing plain radiographs (flamingo views) is therefore an important aspect of the groin pain workup. Chronic stress injury to the pubic bone<sup>8,12</sup> caused by repetitive kicking such as seen in soccer, hockey, and Australian rules football may be another etiologic factor in athletes. The increased magnetic resonance imaging (MRI) signal intensity of the pubic symphysis in symptomatic Australian rule football players has been seen.<sup>12</sup> Abnormal signal intensity on MRI because of bone marrow edema, similar to the MRI findings seen in true stress fractures, is the characteristic finding.

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