Chronic Groin Pain in a Collegiate Football Running Back

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Athletic pubalgia is a poorly understood and commonly misdiagnosed injury that damages the connective tissue of the abdominal and groin muscle attachments to the pelvis.1 Numerous diagnoses are considered synonymous with “athletic pubalgia,” such as sports hernia, sportsman’s hernia, or Gilmore groin. Some authors describe the condition as a prehernia complex injury, conjoint tendon tear, external oblique tear, or inguinal wall deficiency, which complicates the accuracy of injury identification.2-4 Restrictions in lumbopelvic-hip complex mobility, combined with muscular imbalances, can lead to altered biomechanics and gait abnormalities, which may predispose athletes to groin pain and recurrent injury.1 If unilateral malalignment exists between the innominate bones of the pelvis and sacrum, increased tension from the pelvic floor muscles acting on the pubic symphysis may increase the risk of injury.1,5 Common complaints associated with athletic pubalgia include (a) insidious onset groin pain, which encompasses the abdomen and intensifies during motion and (b) groin discomfort when coughing or sneezing.1 Determination of the etiology of the groin pain associated with athletic pubalgia may be difficult, because there is limited agreement concerning proper diagnostic procedures. Clinicians need to be familiar with anatomy and pathomechanics to formulate an appropriate diagnosis.6 Clinical presentation of athletic pubalgia is more frequent among males, particularly among those who perform sport skills requiring frequent changes in direction. Inconsistencies in the reported location or severity of groin or abdominal pain make diagnosis difficult. The existence of an adductor strain concurrent with athletic pubalgia may complicate the process of establishing an accurate diagnosis. Strength deficits or imbalances to muscles crossing the hip and pelvis may perpetuate abnormal mechanics of the lumbopelvic-hip complex.7 We present a case of athletic pubalgia in a dual-sport collegiate athlete, challenges presented to the process of establishing his clinical diagnosis, and the innovative open surgical procedure used to manage the case.

Case History

Physical Examination and Initial Intervention

A 20 year-old dual-sport athlete (track and football) complained of left groin and hip...
flexor pain. The patient reported no previous injury to the lumbopelvic-hip complex but stated that the pain had started approximately six weeks earlier. On the date of initial assessment, the pain had increased after performance of a cutting maneuver (i.e., planting his left leg and lunging toward the right leg) during a practice session. The clinical examination suggested the existence of a left hip flexor strain. Manually resisted hip flexion, abduction, and adduction for assessment of strength was graded as 4/5 for each direction of movement, and the FABER test (flexion – abduction – external rotation) result was interpreted as positive. Trunk flexion and extension range of motion (ROM) were within normal limits, as well as active and passive hip ROM and stability. No deformity, ecchymosis, or signs of labral pathology were evident. The clinical presentation led to a diagnosis of left hip flexor strain. Initial treatment was focused on pain management (i.e., interferential stimulation with cryotherapy), maintenance of hip ROM (i.e., stretching and soft tissue massage), and performance of strengthening exercises for enhanced core stability (i.e., posterior pelvic tilts, bridges, clam shells). After one week of restriction from sport participation and two weeks of limited participation, the athlete returned to full participation without complaint.

Secondary Physical Examination and Subsequent Intervention

One month after the athlete’s return to football participation, he experienced a recurrence of left groin pain during coughing and exertion and was referred to the team physician. Pain was elicited by palpation of the left adductor tendon during an active sit-up movement and with resisted hip adduction. Resisted hip flexion elicited pain, and palpation suggested involvement of the rectus femoris muscle. The team physician noted a slight bulge on the right side of the abdomen, but he did not suspect an inguinal hernia. The athlete denied pain at the pubic symphysis and was treated for a left hip adductor and rectus femoris strain. Medication was prescribed for relief of pain and inflammation, and a rehabilitation program was initiated. After two weeks of therapy (i.e., core stability exercises, cryotherapy, and electrostatic manual therapy [HIVAMAT®]), abdominal pain during coughing and sneezing intensified, and antalgic gait was observed. This presentation of new symptoms suggested the possible existence of athletic pubalgia. Core strengthening was continued, and he was referred for plain radiographs and magnetic resonance imaging (MRI) of the pelvis (approximately 11 weeks after the initial evaluation). Imaging suggested (a) minimal widening of the pubic symphysis, (b) bilateral bone marrow edema, (c) grade I left adductor longus strain, and (d) normal appearance of the rectus abdominis muscle at its insertion. The appearance of fluid and slight cystic changes at the pubic symphysis suggested osteitis pubis. Core strengthening exercises were continued for the next three weeks, and participation in football activities was continued as tolerated for the remainder of the season.

Surgical Management and Postsurgical Rehabilitation

Because symptoms had not resolved after four months of therapy, surgical options were considered. A second MRI that was obtained at approximately 4 months after the initial evaluation demonstrated a slight decrease in fluid accumulation around the left adductor longus and left rectus abdominis attachments, which suggested healing (Figure 1). However, the hypertrophic osseous changes of the pubic symphysis had increased (Figure 2a and 2b). The second MRI supported the complex diagnosis of a grade I left hip adductor strain, a left rectus abdominis aponeurosis tear, and osteitis pubis (left side). Based on the physician’s recommendation,