

NON-OPERATIVE TREATMENT OPTIONS FOR RECALCITRANT GROIN INJURIES IN FOOTBALLERS

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Groin pain occurs in 0.5-10% of all athletes and is particularly common amongst sports that demand kicking, rotational and twisting movements (McCroly & Bell, *Sports Med* 1999; 27: 261-74). Inguinodynia (chronic groin pain) is a significant impairment that may significantly impair quality of life and can be concomitant with neuropathic injury. Correctly identifying the etiology of pain is challenging and a thorough and comprehensive history and clinical orthopaedic exam. Recent literature has demonstrated that groin pain is the fourth most common injury in football (soccer) and is responsible for 5-16% of injury (Renström & Peterson, *Läkartidningen* 1980; 77: 3621-3630; Ekstrand & Gillquist, *Med Sci Sports Exerc* 1983; 15: 267-270; Waldén et al, *Knee Surg Sports Traumatol Arthrosc* 2007; 15: 1155-1562) and for significant time loss from playing (Engström et al, *Am J Sports Med* 1990; 18: 101-105). Groin pain also afflicts Australian rules football, American football, ice hockey, tennis, basketball and rugby athletes (Orchard & Seward, *Br J Sports Med* 2002; 36: 39-44; Emery et al, *Clin J Sport Med* 1999; 9: 151-156; Brooks et al, *Br J Sports Med* 2005; 39: 767-775). Female footballers' are also not immune to groin related injury. Engström et al reported a 12% incidence of groin injury in Swedish female football players.

Groin pain is a nebulous term that encompasses a variety of specific diagnoses (Falvey et al, *Br J Sports Med* 2009; 43: 213-220). It often alludes the medical community secondary to the complex and multiple structures associated with the injury and that the differential diagnoses are associated with multiple systems which confounds the consensus of reaching a precise etiology. Renström & Peterson (*Br J Sports Med* 1980; 14: 30-36) reported that groin pain in athletes (N=55), when stratified differentially, was present in the adductor longus accounting for 62% of groin pain, 22% in the rectus abdominis, and 16% in the rectus femoris, iliopsoas, inguinal (hernia) and trochanteric bursitis, collectively. Neuropathic (ilioinguinal, iliohypogastric, genital branch of the genito-femoral nerve, and lateral femoral cutaneous nerve) and non-neuropathic (fibrosis) are associated with groin related pain and must be ruled out when determining the pathokinematic source of pain (Hakeem & Shanmugam, *World J Gastroint Surg* 2011; 3: 73-81).

Risk factors for hip and groin injuries in sport include muscle imbalance; including greater abductor to adductor strength, core/trunk muscle weakness, and delayed activation of the transversus abdominis. Iliacus and psoas weakness has been associated with posterior wall inguinal insufficiency (Holmich, *Br J Sports Med* 2007; 41: 247-252; Maffey & Emery, *Sports Med* 2007; 37: 881-894). Additional factors associated with hip and groin injuries in sport include previous injury, sport specific training (both pre-season and during season), incomplete rehabilitation, pathokinematic movement patterns, change in playing surface or footwear (cleats) and increased mileage (Niemuth et al, *Clin J Sports Med* 2005; 15: 14-21). Loss of hip abduction and internal rotation, adductor strength and length, age and sports experience may play a confounding role in the injury (Cibulka et al. *J Orthop Sports Phys Ther* 2009; 39: A1-A25). Proper identification and early detection of athletes that may be susceptible to groin and hip injury are paramount. We, as a medical community, need to hone our clinical examination skills and knowledge of the anatomy, in concert with radiographic and ultrasound imaging, to properly diagnosis individuals with chronic groin pain in order to elucidate the etiology and construct a plan of care that will fully address the imbalances and pathokinematic movement patterns present.