Groin Injuries

by Jane Johnson, as featured in FHT ‘Therapist’ Magazine

Anatomy

The groin is an area comprising the upper part of the inner thigh and lower part of the abdomen, forming an angular crease when the hip is flexed. Sportspeople commonly suffer groin strain, another name for damage to hip adductor muscles. Muscles that adduct the hip are adductor magnus, brevis and longus, as well as pectineus and gracilis. All originate on the pubic bone. Adductors magnus, brevis and longus all insert on the linea aspera on the posterior femur; pectineus inserts on the pectineal line of the femur; gracilis on the proximal medial tibia. Whilst this article focuses on the to damage and treatment of adductor muscles, it should be remembered that many other conditions can give rise to groin pain.

Pathology

Non-muscular groin pain could originate from bone (e.g. avulsion fracture of the pubic bone; hip osteoarthritis), tendon (e.g. tendinitis of iliopsoas or rectus femoris), iliopsoas bursitis, nerve entrapment, hernias, sacroiliac joint dysfunction, urological and gynecological disorders and sexually transmitted diseases. Several pathologies may exist at the same time and there is speculation that certain pathologies may preceed or proceed others. Many of these conditions cannot be assessed nor treated by massage therapists. However, the most common form of groin pain in sportspeople arises from adductor strain and so it is on this which we shall focus.

Strains commonly occur at the musculotendinous juction where sarcomeres seem to display less elasticity than in other parts of the muscle. They result from either sudden excessive overload, overstretching or blunt trauma. Microtearing of the tendon tissue may also arise from overuse. Adductor longus is the most commonly damaged muscle. A grade I strain involves damage to less than 5% of the muscles fibers whereas a grade II strain involves more than 5% of the muscle fibers but is not a complete—or grade III—tear in which part of the muscle is no loner attached to the bone.

Symptoms

Clients know when they have suffered an acute groin strain! There is sudden, sharp pain in the groin which limits active movement, depending on the severity of the tear. Grade I strains make running uncomfortable and grade II strains may even limit walking as adductor strength is decreased. Grade II and III strains may produce severe bruising which tracks distally within 48 hours; stretching of the adductors and palpation of the area are painful. Symptoms of grade I strains tend to resolve within a week, and grade II strains within about three weeks. With grade III strains there may be indentation or the muscle and symptoms may persist for up to 8 weeks or even longer. Again, there will be heat and swelling depending on the severity of the strain. Where a strain has become chronic pain may appear with activity but disappear following warm

up, attachment of the adductor at the pubic bone will be tender, and in severe cases a diffuse dull ache may persist even with rest.

Diagnostic testing
The following points suggest a Grade I and II adductor muscle strain:

• There is a known mechanism of injury
• Sudden sharp pain at the site of injury
• Pain and swelling on palpation of the muscle
• Protective spasming of the muscle is also often detected on palpation
• Pain on resisted active hip adduction (Squeeze Test)
• Pain on passive hip abduction

Clients not improving following treatment, or where another pathology is suspected, should be referred. Tests to the lumbar spine, hip and sacroiliac joints may help with differential diagnosis. CT/MRI may be used to confirm strains whereas ulstrasound may be used to evaluate tendon pathologies. X-rays are also used in cases of suspected avulsion fractures of the pubis, for example.

Etiology
Adductors not only adduct the hip (when they work concentrically), they control abduction (when they work eccentrically) and help stabilize the hip during walking and running. Adductor strains are therefore common in sports involving sudden rotation and acceleration such as football, rugby, martial arts and hockey. However, they have also been reported in tennis and basketball.

It has been postulated that adductors with a higher than normal tone are at increased risk of tearing. One of the reasons muscles may have an increase in tone is due to abnormal afferent input from the nervous system, perhaps due to a co-existing pathology. Strains may therefore be more likely to occur in clients with an existing groin problem.

There is some indication that we are at increased risk from any kind of muscle strain as we age, age due to the decreased elasticity of our connective tissues. Groin strains affect men and women equally.

Treatment
The main aim of treatment is to control pain and muscle spasm. Whilst the massage therapist cannot necessarily contribute to all aspects of groin strain rehabilitation, the good news is that gentle massage can be used from an early stage following injury. Sports massage Therapists can also assist with passive stretches and encourage their client to follow any rehabilitative advice they may have been given from a physiotherapist, osteopath or doctor.

Grade I adductor strain

• PRICE: protection, rest, ice, compression, elevation
• Relative rest: active pain-free Range Of Movement exercises
• Active or passive pain-free adductor stretches
• Maintain active and passive stretches to gluteals, hamstrings, hip flexors (with caution), quadriceps and calf.
• Rehabilitative exercises such as sport-specific drills providing they are pain free
• Gentle massage to the whole of the lower limb

As soon as we stop using our muscles they start to atrophy and the joints they affect may stiffen. The result is decreased strength and decreased joint mobility. As massage therapists we can assist with lymphatic drainage and thus help reduce swelling and increase the likelihood of improved function.

Grade II adductor strain

• PRICE: protection, rest, ice, compression, elevation
• Use of crutches during the first few days post-injury
• Pain-free active Range Of Movement exercises
• Pain-free isometric contraction of adductor muscles in order to maintain strength
• Active or passive pain-free adductor stretches
• Maintain active and passive stretches to gluteals, hamstrings, hip flexors (with caution), quadriceps and calf.
• Sport-specific drills providing they are pain free
• Gentle massage to the whole of the lower limb and to upper limbs to address any muscle tension caused through the use of crutches

Grade III adductor strain

• PRICE: protection, rest, ice, compression, elevation
• Rest for 1-3 days
• Use of crutches during the first few days post-injury for non weight-bearing
• Pain-free active Range Of Movement
• Pain-free active or passive stretching
• in order to maintain strength
• Proprioceptive Neuromuscular Facilitation (PNF) after about 10 days providing it is pain free
• Gentle massage to the whole of the lower limb and to upper limbs to address any muscle tension caused through the use of crutches

Other modalities may be used: The use of ultrasound has also been used to treat adductor strains although the use of steriod injections is controversial for use with this condition.

Chronic adductor injuries are difficult to manage. It is therefore better to avoid them and this is best done by encouraging your client not to return to sport until they are pain free.

Frictioning is sometimes advocated once healing is complete and in order to help address excess scar tissue formation. However, this poses something of a dilemma for the massage therapist as the scar tissue is usually at the musculotendinous junction high up in the groin and as such may be a boundry we ought not to cross. Clients could of course be advized to self treat this area and many sports massage therapists reading this may already have learnt how to treat the adductors in a non-invasive manner whilst maintaining client modesty.

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