



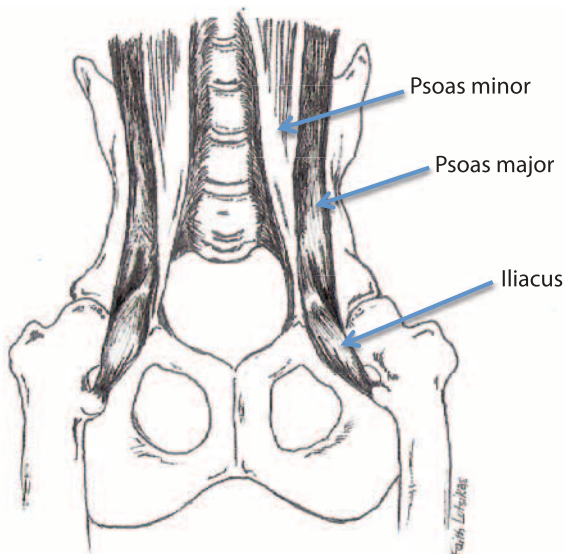
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Iliopsoas Strain Revisited

By Peter J. Lotsikas DVM, Diplomate ACVS and Faith M. Lotsikas DVM, CCRT

Clean Run published one of the first non-peer-reviewed articles on iliopsoas strains in 2007. In that article, my colleague described a case of an agility dog that had been misdiagnosed with a partial cruciate tear, which was actually a groin injury. The patient was spared unnecessary surgery, and was restored to full function after six weeks of rehabilitation therapy at our practice.

Since that article, we have seen an increased awareness of muscle injuries in performance dogs. With two rehabilitation certification programs now available in the U.S., treatment of these conditions has also advanced. However, despite the fact that the conditions are being more commonly diagnosed, a paucity of studies exists in veterinary literature. With the lack of information presented to the general veterinary population, it is probable that many performance dogs are still diagnosed with a more serious orthopedic condition like hip dysplasia or a cruciate tear due to a failure to recognize a muscle injury, which may present in a similar manner. For that reason, the topic of muscle strains, or more specifically hip flexor strains, deserves to be revisited.



How Iliopsoas Strains Occur

Acute, stretch-induced muscle injuries account for a large portion of our sports medicine caseload. In the pelvic limb, the “groin” (or iliopsoas muscle) is the most commonly affected muscle group. The iliopsoas muscle-tendon unit, a fusion of two muscle groups, originates along the lower spine and groin area and connects on the inside portion of the thigh bone. The action of this muscle is to move the hind limb forward by externally rotating and flexing the hip joint.

Iliopsoas strains occur as the result of excessive force. This usually happens in one of three ways:

1. A dog is participating in a highly athletic activity, such as agility or flyball, where the dog is doing repetitive activity without variation (cross training).
2. A dog slips or falls and the muscle is stretched “splayed-leg” rapidly without warm up.
3. An underlying orthopedic or neurological condition causes the dog to “protect” the injury by tightening the groin muscle.

These injuries often occur where the muscle and tendon fuse, which is the weakest part of the muscle-tendon unit.

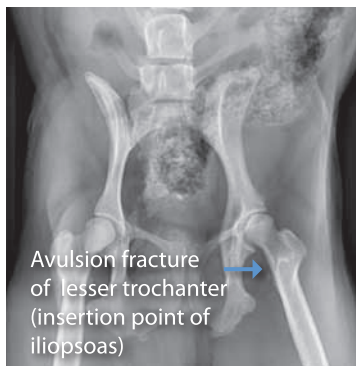
Diagnosis

The diagnosis of a groin strain is typically based on history and clinical signs. Patients with this condition often present with a complaint of decreased performance that manifests as knocking bars, hesitation in weave poles, and slower run times. The condition can affect one or both legs and vary in the degree of lameness. The lameness is

characterized by circumduction/circular outward movement of the limb during the swing phase of the gait. Discomfort can be elicited when the muscle unit is stretched, by either extension of the hips with abduction (moving a limb away from the central axis of the body), or by simultaneous extension of the hip with internal rotation of the hind limb. Pain and spasm is noted upon direct palpation of the muscles and associated tendon.

X-rays are of little value for diagnosing an acute strain, but may reveal an avulsion fracture of the lesser trochanter (the insertion point of the iliopsoas tendon) of the femur in young dogs (see blue arrow in x-ray) or mineralization of the tendon in chronic cases. X-rays serve mainly to identify concurrent orthopedic conditions such as hip dysplasia or a partial cranial cruciate ligament tear. These conditions lead to a “compensation” injury as the dog attempts to “protect” the injured joint by muscle guarding, leading to subsequent muscle strains. The use of advanced imaging modalities (diagnostic ultrasound, MRI) to demonstrate lesions of the affected muscle and/or tendon has become increasingly more common in our practice, particularly for chronic cases or cases resistant to initial treatment.

Ultrasonography is a noninvasive imaging modality for evaluating soft-tissue structures of the musculoskeletal system with the additional advantage that general anesthesia is not required. It is helpful for acute cases, where a tendon “core lesion” may be identified and monitored for adequate healing. MRI (magnetic



Avulsion fracture of lesser trochanter (insertion point of iliopsoas)

resonance imaging) is considered to be the gold standard for evaluating soft tissue (muscle, tendon, ligament) in both human and veterinary patients. While it is widely available in most parts of the country for veterinary medicine, it is typically reserved for confirming chronic, non-responsive cases due to its cost.

Treatment

Acute iliopsoas strains are often amenable to a combination of rest, specific therapeutic exercises, cryotherapy, muscle relaxants, and anti-inflammatory medication. At minimum, a 4-6 week time frame should be expected for recovery, and return to full activity level must be gradual. Seeking veterinary rehabilitation can further assist recovery via a tailored treatment plan and use of modalities such as laser, ultrasound, acupuncture, and/or chiropractic adjustments. Laser therapy is often a mainstay for acute injuries because it provides fast pain relief, as well as stimulating healing at the cellular level. Bearing in mind the function of the iliopsoas group, a hip flexor, another vital part of healing is owner compliance. This means not allowing the dog to jump onto the sofa, slip on flooring, or be off leash at all during the recovery phase. Making adjustments to lifestyle and activity level must be embraced as part of therapy.

Unfortunately, even when instructions are followed to the letter, we still find a group of dogs that seem to have chronic iliopsoas pain to varying degrees. When this becomes apparent, re-evaluation of therapy is necessary. Phonophoresis, the use of



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ultrasound in conjunction with a specific gel medium containing medications such as a steroid and lidocaine combination, can be helpful in getting more stubborn groin injuries to heal. Ultrasound has the ability to decrease pain, allow therapeutic stretching, and promote proper organized healing. In addition to prolonged therapies being required with chronic iliopsoas strains, it is also necessary to look for other underlying orthopedic conditions that may be exacerbating the condition.

Surgical treatment is warranted for dogs that do not respond to conservative medical management and rehabilitation therapy. In cases where there is irreversible change to the tendon, such as fibrosis (excess connective tissue) where the muscle and tendon meet, surgically releasing (cutting the tendon from the bone) may be needed. Technically, dogs do not need this muscle group to flex the hip and can function normally when it is not intact. We recommend that the condition be confirmed with an MRI before moving forward with surgery.

Avoiding Injury

As with so many of the conditions our canine athletes face, prevention of injury is priceless. The risk of re-injuring a strained muscle is more likely when a strain injury has not adequately

healed before returning to full activity. There are several precautions performance dog owners can take to help prevent iliopsoas injuries. First and foremost, your dog should be warmed up before training or competing. This can be in the form of jogging, trotting over cavaletti poles, alternating tight circles and figure eights, and jumping over low obstacles. Avoid manual stretching before exercise, but it is appropriate following training and performance. Iliopsoas stretching techniques (hip extension with abduction) and using an appropriate cool down with ice is generally recommended.

When possible, avoid running your dog across slick surfaces (not only while running agility, but also at home on hardwood floors or in mud in the backyard). Keep a towel or an area rug near the entrance to dry your dog's paws when he comes in from outside. Wet feet are extremely prone to slipping on hardwood or tile floors and when the dog is jumping into or out of the vehicle while ice or snow is on the ground.

If your canine partner is developing recurring muscle injuries, having his performance style evaluated may have merit in the prevention of injury. 🐾

Dr. Peter Lotsikas is a Diplomate of the American College of Veterinary Surgeons. He holds a DVM degree from the Virginia-Maryland Regional College of Veterinary Medicine. He also completed a general small animal internship at Kansas State University, followed by a surgical internship at Dallas Veterinary Surgical Center. Dr. Lotsikas received his formal surgical residency training at Iowa State University. He now practices at the Veterinary Orthopedic & Sports Medicine Group (VOSM) in Annapolis Junction, Maryland (www.VOSM.com).

Dr. Faith Lotsikas earned her veterinary degree from the Virginia-Maryland Regional College of Veterinary Medicine. She has always had a strong interest in whole pet wellness. For that reason, she also became a certified canine rehabilitation therapist. Dr. Faith now offers rehabilitation services as a mobile veterinarian in the Washington D.C. area, and at Gunny's Rainbow in Bethesda. She also enjoys being an amateur veterinary medical illustrator.



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