



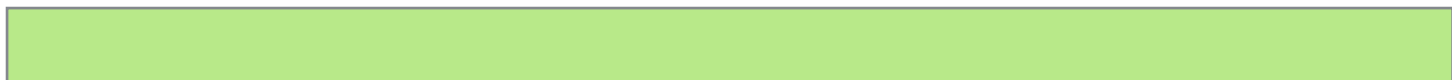
“I learned that often the best diagnostic and treatment tools are my own hands.”
 - A veterinarian’s experience at the Canine Fitness Centre

I recently completed a 40-hour internship in canine rehabilitation and physical therapy at the Canine Fitness Centre. What a fabulous learning experience! I had the opportunity to work with several different therapists who all have extensive training and experience in manual therapy techniques and treat both humans and animals. All were incredibly generous in sharing their knowledge and experience with me as they worked with a wide range of patients. As a veterinarian, I’ve spent a lot of time learning about and utilizing the many diagnostic and treatment tools available – blood work, radiographs, CT scans, MRI, medications, surgeries, etc. At the Canine Fitness Centre, I learned that often the best diagnostic and treatment tools are my own hands. And best of all, I was able to immediately start using all that I learned as soon as I returned to work at my own practice. My only regret is that I didn’t take advantage of my time there to schedule a physical therapy session for myself so I could experience the benefits first hand.

- Nancy K. Tharp, DVM, CVA, CCRT

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Iliopsoas Strains: Don't miss this common canine injury!

The iliopsoas muscle is the most commonly injured muscle in the pelvic limb. Strains or tears are usually caused by excessive force acting on the muscle during eccentric activity. This is usually associated with highly athletic activities and it is a common injury in dogs participating in dog sports, especially participation in sports that require repetitive motion and dogs that do not participate in cross training activities. However, household dogs who race after chuck-it balls, chase wildlife, or slip on floors into the splayed leg position can also strain their iliopsoas muscle.

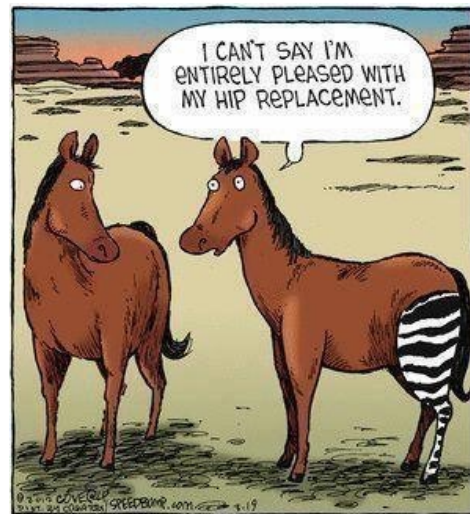
Presentation

Stretch-induced injuries to the iliopsoas can be particularly problematic as their symptoms can begin as subtle changes in performance (such as knocked bars or slower performance speeds), or intermittent hind end lameness. Some owners note reluctance to jump into vehicles or on to furniture, or that the dog may not use that leg on the stairs. To the untrained eye a dog might look fine while running, or be able to "walk it off" after a few obviously lame steps. They can recover briefly with rest, but symptoms recur when the dog attempts a return to full activity.

Iliopsoas strains that present as acute hind end lameness are also often mistaken for cranial cruciate ligament tears. Some dogs have even been referred for knee surgery on what is, in fact, a completely sound knee. Iliopsoas strains can also occur as the result of another injury or weakness. They can occur in conjunction with a cruciate injury or repair and can result from weakness in the hips or hip dysplasia which may cause the dog to overuse the iliopsoas, resulting in stretch-induced injury. Since these more well known and more often diagnosed injuries can be associated with an iliopsoas injury they often mask the presence of the iliopsoas injury itself unless that is what is being looked for specifically, preventing its resolution and recovery and potentially causing a chronic issue.

Diagnoses

Diagnostic imagery is limited in its usefulness and practicality in the diagnosis of iliopsoas strains. Nothing will show on x-ray in the early phases of injury. CT, MRI, and ultrasound are used to diagnose the extent of human muscle injury, however this can be cost prohibitive and is less practical in animal applications. Fortunately, imagery is not necessary to diagnose an iliopsoas strain. Direct palpation and isolated stretching of the suspected muscle group can indicate the strain with relative certainty.



Discerning between acute and chronic strains

Acute injuries are characterized by obvious trauma to the muscle and are followed immediately by symptoms. (i.e. the dog was seen to have slipped and then comes up limping afterward).

Chronic injuries may or may not have begun as acute injuries. These appear as chronic soreness and intermittent lameness.

There will be pain on palpation of the muscle and belly tendon at their insertion points on the lesser trochanter, and muscle spasms may occur. Discomfort or pain will be present when the iliopsoas is stretched in isolation by extending the hip and abducting the limb, or by extending the hip and rotating the limb internally.

Treatments & Prognosis

Treatments vary slightly between acute and chronic iliopsoas strains.

Treatment of acute iliopsoas strains should take into account the natural healing process of soft tissue.

In the first 48 hours following injury rest, but not immobilization, and passive range of motion are appropriate.

During the first week following injury, as pain recedes and the dog appears to return to normal function with the subsiding of obvious physical signs of injury, the handler may, in error, allow the dog to return to full activity, re-initiating and

prolonging the inflammatory phase. Repeating this cycle can result in a chronic iliopsoas injury. This is a difficult stage for pet owners and performance handlers. The dog seems fine some days, and much worse others. It is important not to subject the dog to complete inactivity during this time as progressive protected loading of the affected limb stimulates healing and promotes fibre alignment. Controlled exercise under the guidance of a professional is needed during this phase.

(cont. p. 3)

During the second and third week following the initial injury the iliopsoas must be put under gradually progressing normal stress. Hydrotherapy in the form of the underwater treadmill can be very helpful here as it allows natural range of motion at controlled speeds, and allows the dog to practice weight bearing gradually while providing moderate resistance training for strengthening of the limb.

Active stretching, manual therapy, and by week four or five, more activity specific exercises should be started with a focus on proprioception exercises. For example an agility dog could start with low jumps and wide sweeping turns as they build their way back to peak performance.

Modalities such as laser therapy and shockwave therapy continue to be beneficial, especially when paired with neuromuscular exercises, and underwater treadmill.

The dog may return to full activity when they are pain free, have regained full range of motion, and have 90% symmetry in muscles of the hind limbs. Ideally the dog will be recovered in as little as 6-8 weeks on such a progressive program.

Canapp, S.O.; Non-responsive Hind-Limb Lameness in Agility Dogs: Iliopsoas Strains. Clean Run Magazine. 13:3:66-70. (2007).

Edge-Hughes, L.; Hip and Sacroiliac Disease: Selected Disorders and their Management with Physical Therapy. Clinical Techniques in Small Animal Practice. 22:183-194 (2007).

Edge-Hughes, L.; Musculoskeletal Welfare Aspects of Sporting Dog Activities. (2010).

Lotsikas, P.J.; Iliopsoas Strain Revisited. Clean Run Magazine. 17:7:27-29 (2011).

Phases of Soft Tissue Healing

Phase 1: The Inflammatory Phase

This generally occurs over the first 48 hours following an acute soft tissue injury. At this time management of pain and protection of the injured tissue with rest, but not immobilization, is best. Following the initial inflammation passive range of motion and joint mobilization should be started. Stretching during this phase can be detrimental to healing due to the risk of micro-tears.

Phase 2: The Repair Phase

At this stage the rehabilitation program must be dynamic and match the progress of the individual. Gradual increases in exercise can start. Gentle stretching and active range of motion exercises can start.

Phase 3: The Maturation & Remodelling Phase

This stage occurs usually during week three and beyond following an acute injury and refers to the maturation and remodelling of the new tissue that grows during the repair phase. In order for this to occur correctly it is vital to start stressing the affected tissue as it would be stressed under the circumstances of natural correct use. Manual therapy and proprioceptive training are a key component to this phase of rehabilitation.

It is estimated that acute stretch-induced injury of muscles makes up over 30% of injuries seen in human sports medicine. The same type of injury likely occurs at the same rate in dogs. However, these injuries are rarely reported in small animal medicine, more likely due to under diagnosis rather than reduced occurrence.

Home Exercises: Iliopsoas Injury



Case Study: Recovery from an Iliopsoas Strain

Bruno, a large breed senior, was originally referred to the Canine Fitness Centre with a suspected fully torn CCL. He was not considered a candidate for surgery due to age. However, when Bruno came into the clinic he was found to have not a CCL injury, but an iliopsoas strain.

The injury was first noticed during an on leash walk on a dry sidewalk. He was reported to have yelped and come suddenly lame on the left hind. He recovered with rest, but became lame again after play with another dog. The second event resulted in immediate toe touching lameness for a short period after the incident, and then a continued moderate limp.

Initial Care:

Immediately following both incidents Bruno was rested at home. When the limp from the second incident persisted beyond a day, Bruno was seen by his regular veterinarian, who referred him to the CFC

Diagnostics:

Due to Bruno's size and age the owner elected to undergo only minimal veterinary diagnostics prior to his referral to the CFC. At the CFC he underwent a full hands on examination without sedation. The CCL was found to be intact, with a negative meniscus test, full range of motion, and minimal laxity. However, palpation of the iliopsoas tendons caused a strong pain response and the problem was determined to be an iliopsoas strain, rather than a CCL tear.

Mode of Injury:

Based on the owner's observations and the dog's pre-existing medical conditions (bilateral arthritis of the elbows), it is possible that the iliopsoas was tight due to overuse in order to compensate for weakness in the other limbs. When Bruno engaged in play, had a slip, or did an explosive movement it may have caused an acute strain of the iliopsoas.

Treatments:

Manual therapy included stretches for the iliopsoas and mobilizations of the spine. Hip extensions, joint compressions, and tail traction were done. Acupuncture, laser therapy, and shockwave therapy were also used. A home program was assigned between visits.

Initially Bruno was seen weekly for three weeks, then at two to three week intervals following that. Overall, six visits were made to the clinic to treat the iliopsoas injury.

Owner Education and Home Program:

Bruno's owner was advised to control activity by taking several short on leash walks per day and preventing rough housing with other dogs. They were given a home exercise program and a joint supplement was recommended. Bruno was to continue with the pain medication provided by his veterinarian.

Outcome:

Bruno's iliopsoas made a full recovery. By week five he was sound, and he did not have a recurrence of lameness between then and his eight week checkup. Bruno was cleared to gradually return to normal activity and continues to attend therapy at 6-8 week intervals to manage age related arthritis in other joints. The iliopsoas has not flared up in the past year.

" I made him an appointment with a specialist. It took her about two seconds to diagnose him with an iliopsoas muscle strain. I had never heard of this! My regular vet had never heard of this either. But there was no question at all for someone who was familiar with the injury and looking for it." Katie

Iliopsoas strain: The hind limb lameness you may not know about. Team Unruly: Our Dogs Do Everything. <http://teamunruly.com/?p=459>

