

Soft Tissue Injuries

Twin Cities Animal Rehabilitation & Sports Medicine Clinic

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Soft tissue injuries generally include muscle, tendon or ligament injuries but can also be sprains of a joint capsule. These tissues can be damaged due to acute trauma or chronic overuse; acute trauma is from a single overload, whereas overuse injuries occur with repetitive use or activity without adequate rest for repair. Many times soft tissue injuries go undiagnosed until they have become a chronic issue, this is because the initial damage is slight and the patient goes on being active while the injury progresses.

Some types of soft tissue injuries include abrasions, contusions, lacerations, sprains and strains. A strain is an injury to a muscle or its fibrous tendon. This is most often the result of excessive stretch, or an inappropriate stretch while the muscle is working to shorten (contracting). A sprain involves stretching or tearing of ligaments or a joint capsule. This can occur by twisting, falling or trauma due to impact, as well as chronic overuse. Even a slight mis-timing of the muscles that control joint motion can predispose to sprains. Overuse injuries result in microdamage and build up of poorly repaired (scar) tissue. When this change occurs in tendons it is called tendinopathy (formerly called tendinitis but we know now that inflammation is usually absent) and in ligaments is called desmopathy.

Clinical signs of acute soft tissue injury include swelling, bruising, and pain in the area affected. Examining the patient on the same day as injury can be challenging (with the exception of major trauma) because there are often multiple areas of discomfort (everything hurts) without a clear picture of the main injury. Advise rest, anti-inflammatories and a repeated evaluation a few days later if you are unable to clearly identify the issue. Bruising is often hard to see in our heavier coated patients, but the swelling is usually easy to feel in superficial structures once inflammation has peaked. Bruises are usually self-limiting, but hematomas can develop and take months to fully resolve, in the meantime they can affect joint and muscle action. Unless bruising is severe, symptomatic treatment is usually sufficient. This includes controlled exercise, cryotherapy (cold therapy) and NSAIDs for two weeks. When handling acute soft tissue injuries, avoid heat over the inflamed area and instead start with ice in the acute phase (first 3 days or longer). The patient should be on restricted activity to allow for proper healing and to avoid stress on the injured area.

Chronic overuse injuries have a variety of symptoms, patients may show obvious lameness on the affected limb, or may have more subtle signs, such as localized sensitivity to palpation, stiffness after rest, reduced muscle size and length (stretch), loss of range of motion in a joint, or avoidance of certain activities, for example jumping in the car. Soft tissue injuries can appear as swelling on radiographs but the change is not specific. In cases that are unresponsive to rest and anti-inflammatories, other diagnostic techniques such as musculoskeletal ultrasound or MRI offer additional information on how to direct therapy. Diagnostic ultrasound is much less costly than MRI, and in human medicine has been shown to have equal accuracy for diagnosis of soft tissue pathology. Many clinicians using ultrasound find it more helpful than MRI, as fine detail such as striations of a muscle, or tendon fiber orientation can be clearly seen.

If the patient has prolonged lameness (more than three weeks) or worsens acutely, then the patient should be examined by a veterinary surgeon or a sports medicine specialist. The specialist may have the training to perform musculoskeletal ultrasound and identify the extent of the injury and the tissues involved or may recommend MRI. Imaging allows a targeted treatment plan based on the findings, as well as the ability to verify healing and evaluate response to therapy.

The patient can only safely return to full activity with a low risk of re-injury if they have completed a progressive exercise plan targeting balance, proprioception, flexibility, and strength. The patient is re-evaluated before being cleared for full activity, whether it is squirrel patrol or flyball.