FOX VALLEY EQUINE PRACTICE

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Proximal Suspensory Ligament Desmitis

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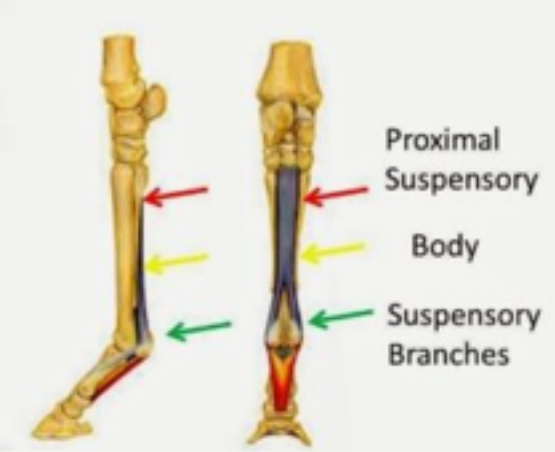
Definition

A ligament is a tough band of fibrous connective tissue that connects bone to bone to provide support and stabilization to the skeleton. The horse has a very important ligament of the distal limb called the suspensory ligament (SL). The SL originates (starts) on the back side of the cannon bone just below the carpus (knee) or tarsus (hock). The SL can be divided into three main regions; the proximal region, the body, and the branches as is illustrated in the below diagram. The main function of the SL is to provide support to, and prevent over-extension of, the fetlock joint. When a ligament becomes injured or inflamed it is termed "desmitis." The horse in yesterday's scenario was diagnosed with proximal suspensory ligament desmitis (PSLD), or inflammation/injury of the SL at its origin near the carpus. This type of injury tends to be more common in Thoroughbred race horses, hunters, jumpers, dressage, and western performance horses.



Pathophysiology

PSLD often occurs due to compensation so it is important to evaluate the entire horse to ensure there are no other issues going on. Foot imbalance or a "back at the knee" conformation can also predispose a horse to PSLD. Furthermore, PSLD can occur acutely from anything causing over-extension of the fetlock such as landing on the limb after jumping a fence.

Clinical Signs

PSLD of the forelimb usually presents as a sudden onset mild to moderate lameness. The lameness may be somewhat obvious if only one limb is affected or more subtle if both forelimbs are affected. For example, a horse with a subtle case of PSLD may have a history of not landing on a particular lead after jumping a fence. This is due to the fact that the leading forelimb experiences more fetlock extension when loaded, resulting in SL stress and potential pain. Clinical signs of acute PSLD often include edema (swelling) at the back of the cannon just below the knee, heat in the area, and pain upon palpation.

Diagnosis

After an initial physical exam, a lameness exam is performed. Lameness in a forelimb due to PSLD is often exacerbated when trotted on soft ground with the affected forelimb on the outside of the circle. Distal limb flexion may exacerbate the lameness as the SL is relaxed during flexion then suddenly stretched when the limb is loaded. Regional nerve blocks or infiltrating the proximal SL using carbocaine can both aid in diagnosis. When the proximal SL is anesthetized, the pain stimulus is no longer felt by the horse and the observable lameness should improve. Ultimately, ultrasound of the region is used to make a definitive diagnosis. Following is a list of typical ultrasonographic findings of PSLD: enlarged cross sectional area of the SL, irregular margins of the SL, reduced echogenicity (increased blackness) of the ligament, irregular fiber pattern, and mineralization of the ligament (chronic cases). In some cases, a lesion may not be initially obvious on ultrasound and a repeat ultrasound is performed 10-14 days later. In some cases, radiographs, MRI, CT, or nuclear scintigraphy are used to aid in diagnosis. Degenerative suspensory ligament disease (DSLD) is a systemic connective tissue disorder and would be diagnosed and managed differently.

Treatment

In acute cases of PSLD, the main goal of therapy is to decrease inflammation. This can be achieved with systemic anti-inflammatories such as banamine, topical anti-inflammatories such as Surpass or DMSO, wrapping, cold hosing, and rest. A rehabilitation protocol must be developed for long term treatment, as ligament injuries typically require 8-9 months to properly heal. A typical protocol includes complete stall rest with a gradual return to exercise. In general, stall rest and hand walking is the mainstay of the first three months of treatment. Turnout in a pasture is not controlled exercise and poses a serious risk of exacerbating the injury. Serial ultrasounds are performed during the rehab process to assess ligament healing. Therapeutic shoeing is performed unique to each individual horses's conformation and injury. Rehabilitation of PSLD of the hindlimb is similar to that of the forelimb, however surgical intervention more often required. Extracorporeal shockwave therapy, mesenchymal stem cells, and platelet rich plasma have been used with success in both cases as adjunctive therapies to aid in the healing process.

Prognosis

Up to 90% of horses diagnosed with forelimb PSLD can return to their previous level of activity with rest and slow rehabilitation. Horses with PSLD of the hindlimb do not respond as well to conservative treatment alone. Some cases require surgical treatment such as fasciotomy (cutting) of the deep plantar metatarsal fascia, to relieve pressure on the proximal suspensory ligament. In one study, 85% of horses with hindlimb PSLD returned to their previous level of activity after fasciotomy. Overall, when a rest and rehabilitation protocol is combined with adjunctive therapies like extracorporeal shockwave or platelet rich plasma, many horses with acute proximal suspensory ligament desmitis are able to return to their previous level of activity.