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Researchers Study SDF Tendonitis in Cutting Horses

Cutting horses require strong, sturdy bodies and limbs to successfully face off with a cow trying to return to her herd. And, like all equine athletes, the demands of a cutting horse's job put him at risk for injury. Recently, a team of veterinarians from Texas took a closer look at an important, but not well-characterized, cause of lameness in these horses: superficial digital flexor (SDF) tendonitis.

Researchers know that forelimb SDF tendonitis is a common injury in sport- and racehorses. For instance, it accounts for 6-13% of racing-related injuries, said Tyler Tipton, DVM, Dipl. ACVS, an associate veterinarian at Equine Sports Medicine and Surgery (ESMS) in Weatherford, Texas. Further, he explained, "tendonitis of the SDF in horses other than cutting horses is commonly considered to have a poor prognosis with a high recurrence rate and is often a career-ending injury."

However, no published reports exist on how these lesions affect cutting horses. So Tipton and colleagues set out to better characterize forelimb SDF tendonitis in these horses and to determine its recurrence rate and prognosis.

In the retrospective study, the team evaluated 19 cutting horses diagnosed at ESMS with SDF tendonitis in the forelimb via ultrasound examinations from Jan. 1, 2007, to Dec. 31, 2011. All of those horses—nine mares, six geldings, and four stallions—were Quarter Horses ranging in age from 3 to 6 years old. The horses presented with mild lameness (an average of 1.26 on a five-point lameness scale) and swelling of the palmar (rear) aspect of the forelimb at the injured area.

"This is characteristic of SDF tendon lesions and known as a bowed tendon," Tipton said.

Seven study horses had SDF lesions in the left forelimb, 11 had lesions in the right SDF, and one horse had lesions in both SDFs. Of those, eight horses' lesions were considered mild, while the remaining 11 horses had moderate lesions. Additionally, the team found that all the study horses' lesions were located in the same part of the leg: the lateral (outside) aspect of the tendon, near the middle of the cannon bone.

"The stress of deep footing coupled with the quick side-to-side and turning-around movements required of cutting horses could possibly produce selective tensional forces on the lateral aspect of the tendon, leading to damage of the tendon fibers," Tipton explained.

Additionally, he said, "fatigue may also have an important role in development of SDF tendonitis in cutting horses. Most horses used for the sport of cutting perform a warm-up or are loped for 1.5 to three hours prior to competition, which consists of a 2.5 minute run. This amount of pre-performance exercise could potentially result in fatigue of many structures," including the SDF tendon.

Affected horses received a variety of treatment methods:

- Five horses received platelet-rich plasma (or PRP, which delivers a high concentration of platelets in the form of blood plasma to a lesion, increasing the amount of growth factors at the site, to help the injury heal);
- Four horses underwent a tendon-splitting procedure;
- Three horses received shock wave therapy;
- One horse was treated with both PRP and the tendon-splitting procedure;
- One horse was treated with PRP, shock wave, and tendon-splitting; and
- Ten horses were treated with rest and rehabilitation alone.

"The rehabilitation program for each horse differed depending on the lesion severity and the clinical judgment of the attending clinician," Tipton explained. The horses' rehabilitation programs included any or all of the following:

- A period of rest prior to rehab;
- Aquatic treadmill exercise;
- Hand walking; and
- Riding under saddle with gradually increasing durations and intensities.

For horses that returned to athletic function, convalescence lasted three to nine months, Tipton said.

Of the 19 horses included in the study, 17 were available for long-term follow up; the other two had been sold, "but they were not lame at the time of sale," Tipton said. Of the 17 horses for which follow-up was available:

- Sixteen (82%) returned to their previous activity level, and one horse had chronic lameness associated with the SDF tendonitis;
- Tendonitis recurred in three horses (18%);
- One horse developed an SDF tendon lesion in the opposite forelimb;
- Two horses that returned to their previous level of work were eventually retired for use as breeding stock; and
- Sixteen owners and trainers were satisfied with the treatment and outcome.

"Although not a common problem in cutting horses, SDF tendonitis is an important cause of lameness and loss of use," Tipton concluded. "On the basis of the results of this retrospective study, the prognosis for cutting horses with SDF tendonitis is much better than that for affected racehorses."

If a cutting horse owner believes his or her mount has suffered such an injury, Tipton recommends he or she seek veterinarian advice as soon as possible.

"The horse should definitely be evaluated by a veterinarian to determine extent of the lesion and possible treatment options," he said. "But until evaluation by a veterinarian, anti-inflammatory medication and bandaging to support the injured limb can be beneficial to the outcome of these injuries."

The study, "Superficial digital flexor tendonitis in cutting horses: 19 cases (2007-2011)," was published in the *Journal of the American Veterinary Medical Association*.