DEGENERATIVE SUSPENSORY LIGAMENT DESMITIS

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Introduction

Degenerative Suspensory Ligament Desmitis (DSLD) is a syndrome being recognized with greater frequency. The condition has been recognized in the Peruvian Paso, Peruvian Paso crosses, Arabians, American Saddlebreds, American Quarter Horses, Thoroughbreds and some European breeds such as the Irish Thoroughbred and Swedish Warmbloods. Drs. Pryor, Pool and Wheat first described DSLD at the University of California at Davis in 1981 as Passive Suspensory Ligament Failure in an unpublished paper. Recognition of DSLD with its grave prognosis is essential among equine practitioners.

Clinical Presentation

Horses present with a history of an obscure lameness problem that has developed over time. Cases may be mildly affected and have only a painful response to palpation of the suspensory ligaments, especially the suspensory branches. DSLD is unique in its bilateral distribution, which can affect both front legs, both hind legs or all four legs. No other suspensory injury matches this pattern of distribution. As the condition progresses there may be filling in the fetlock joints (windpuffs). An exaggerated dropping of the fetlocks while in motion may be noted. The pasterns eventually become horizontal and secondary degenerative joint disease (ringbone) may occur. There is a gradual straightening of the stifle and hock angle if the hind legs are affected. Some horses become resistant to having their feet picked up and shoeing becomes an ordeal. Some horses will dig holes to rest the affected legs in a position with the toes down and the heel elevated. When standing on a hard surface, the horse may rock back and forth, relieving one leg while loading the other painful leg. Laminitis might also be misdiagnoses. Acute rupture of the suspensory apparatus is possible.

Diagnosis

1. Palpation of the suspensory ligaments will indicate a bilateral distribution of suspensory ligament branches with a pain response, thickening and hardening of the mid-body or suspensory branches.

2. Ultrasound imaging will confirm the diagnosis. There will be a poor fiber pattern noted at the origin of the suspensory or at the bifurcation and branches. The circumference of the medial/lateral suspensory branches will be enlarged (greater than 1.2 cm)

3. Radiographs will reveal a lowering of the sesamoid bones relationship to the fetlock joint with possible mineralization noted in the soft tissue areas of the suspensory branches. Degenerative joint disease may be present in the pastern joint. Subluxation of the pastern joint is obvious as the horse becomes coon footed.
4. Thermography will show significant warming over the areas of the suspensory branches.

5. Nuclear scintigraphy clearly demonstrates a unique distribution in both the soft tissue phase and bone phase. The suspensory branches are quite reactive on soft tissue and the proximal sesamoid bones as well as the pastern joint 'light up' on the bone phase.

Pathology

Gross pathology will reveal the extent of damage that has been sustained by the suspensory ligament. The ligament is enlarged and has a hard fibrous feel. There may be adhesions of the suspensory ligament to the cannon bone, the splint bones and the deep flexor tendon. The bifurcation between the suspensory branches may be totally filled with fibrocartilage. Histopathology on more than 30 cases (Pool 1992) showed a consistent pathological process. Speculation is that, at some point in the life of a predisposed horse, a previously normal suspensory ligament begins to undergo failure when resisting normal forces of tension (strain). With normal tissue, a strain is repaired with fibroblasts (cells that produce type III collagen). Fibroblasts 'bridge' the damage and, in time, repair the damaged tissue. The new collagen fibers then orient themselves in line with the stress on the tissue as the healing progresses. Horses affected with DSLD have an abnormal healing response. Regardless of the causes of the injury or strain, the damaged tissue heals with cartilage instead of collagen. Fibroblasts defect and become chondrocytes and the ligament is unable to restore itself to normal tissue strength. The ligaments continue to 'break down' even with just the strain of normal weight bearing. Some Peruvian Pasos have spontaneously exhibited DSLD as yearlings (1).

Treatment

1. Stall confinement and rest for 9 - 12 months. Slow up-hill walking may help the superficial flexor muscle and tendon unit to handle the increased load due to the lack of suspensory ligament support.

2. Egg bar support with wedging to comfort. Patten shoes can be used behind (4). This gives immediate relief. Horses are gradually lowered as level of comfort improves. Recent research shows that raising the angle loads the dorsal branches of the suspensory ligament itself (5). Clinically the horses show great relief from pain with the angle elevated. Although this shoeing philosophy is controversial, the horse clinically improves in comfort and the ultrasound confirms "healing" of the affected area of the suspensory ligaments, although once again, it heals with cartilage.

3. Analgesics as needed.

4. Supportive leg wraps, similar to Sports Medicine Boots, will improve the level of comfort for the horse, but can be only left on for a maximum of 12 hours a day.

5. MSM does seem to help the horse's level of comfort and some horses can handle light riding and go lame if taken off the MSM.

6. Acupuncture may give some relief.

Prognosis

DSLD has a grave prognosis for the equine athlete. The question of heredity must be answered as there are several sire/son, dam/daughter and full sister combinations of affected individuals. A pasture comfortable animal seems to be the best result at this time. The Peruvian Paso cases tend to continue the 'break down' process despite heroic efforts by the veterinarian, the farrier and the owner. Euthanasia for humane pain relief is, unfortunately, the outcome.
Summary

The DSLD syndrome should be included in the list of differential diagnoses of a horse that presents with symptoms of dropped fetlocks, horizontal pasterns, straight hocks and stifles and bilateral or quadrilateral limb lameness. DSLD should also be considered when the horse exhibits difficulty standing when the opposite leg is held up along with signs of discomfort and when enlargement and/or hardening of bilateral or quadrilateral suspensory ligaments and associated branches is noted on palpation. Accurate and early diagnosis by ultrasound, therapeutic shoeing, stall confinement, analgesics (when indicated for pain) have appeared to aid in the healing of affected horses to the point of pasture soundness. One must remember that when healing, cartilage is substituted for normal collagen tissue; therefore weak non-painful suspensory ligaments are the best to be expected through the healing process. The question of heredity needs to be addressed, as these horses are only returning to breeding soundness rather than to previous athletic ability. Although DSDL is a relatively uncommon disease entity, it unfortunately carries a poor prognosis for the affected equine athlete.

References


