

SURGICAL MANAGEMENT OF LAMINITIS

Laminitis is characterized by a breakdown of the connective tissue suspensory apparatus of the distal phalanx inside the hoof wall. As a result of lamellar pathology, the distal phalanx is no longer supported by the laminar attachment and starts to displace. As soon as the first signs of displacement are recognized, the disease becomes chronic.

There is a direct relationship between the degree and speed of movement of the distal phalanx away from the hoof capsule and the severity of damage to the laminae at the initial insult. Therefore, the most useful diagnostic and monitoring aids in the course of the disease are high-quality radiographs in both lateromedial and dorsopalmar (horizontal) projections.

Clinical Signs

Clinical signs, severity of damage, and response to therapy vary among individual horses, but it is widely accepted that the single most important factor influencing the final outcome of equine laminitis is the severity and extent of the initial damage to the internal anatomy of the foot.

Diagnosis

Clinical signs are very typical, and the radiographic examination further helps to diagnose this condition.

Treatment

Treatment of laminitis consists of dietary management, medical treatment, soft bedding, and hoof care. In all phases of the hoof care, corrective shoeing and trimming should aim to reduce stress to the damaged lamellae by minimizing the distracting forces affecting the displacement of the distal phalanx (rotation or sinking). DDF tenotomy is a salvage procedure for horses with chronic refractory laminitis accompanied by rotation of the distal phalanx and persistent pain. However, it is reported that even foundered horses with persistent draining tracts caused by osteomyelitis and excessive heel growth respond favorably to the procedure.⁹⁵



Tenotomy of the Deep Digital Flexor Tendon

The rationale for tenotomy of the DDF tendon is based on the biomechanical forces in the foot. The procedure is performed to reduce the palmarly directed pulling forces of the DDF tendon on the distal phalanx and subsequently decrease the shearing stresses on the lamellae of the dorsal aspect of the hoof capsule. It also serves to reduce the

pressure of the apex of the distal phalanx on the corium of the sole. Tenotomy of the DDF tendon permits lowering the heels to allow a more normal alignment (derotation) of the distal phalanx using orthopedic shoeing.⁹⁵

DDF tenotomy can be performed at the midmetacarpal or the pastern area of the limb. Both procedures are equally effective, but tenotomy at the level of the midmetacarpus is preferred for various reasons. It is easier to perform and can be performed in a standing horse, the digital tendon sheath is not invaded, it bears less risk of postsurgical infection, and it leaves some support to the distal interphalangeal joint through fascial attachments. Pastern region DDF tenotomy must be performed under general anesthesia and should be reserved for cases that require a second tenotomy.

Before both surgeries, horses should be shod with a heel extension to stabilize the foot and help prevent post-operative hyperextension or subluxation of the distal interphalangeal joint.

