

Severe Laminitis in Horses: Modified Surgical Treatment

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February 02 2010 Article # 15753

When a horse has a severe case of laminitis with marked instability of the coffin bone, cutting the deep digital flexor tendon (DDFT) is a treatment that veterinarians often recommend. This surgical procedure is commonly done halfway down the back of the cannon with the horse standing and sedated, but researchers recently described a modified technique that is performed behind the pastern.

R. Wayne Waguespack, DVM, MS, Dipl. ACVS, assistant professor of clinical sciences at Auburn University, discussed the modified deep digital flexor tenotomy technique at the 2009 American Association of Equine Practitioners convention, held Dec. 5-9 in Las Vegas, Nev.

"Regardless of the site, the purpose of the tenotomy procedure is to remove the force that is primarily responsible for rotation of the distal phalanx (coffin bone) and pain associated with the laminar separation," he explained. The laminae attach the hoof wall to the coffin bone.

It's not uncommon for chronic laminitis cases to require another tenotomy, and having an alternate location free of scar tissue for the second procedure would be beneficial.

"The midpastern approach was first described in the literature in 1986, and (it was) done under general anesthesia through a 3-cm incision," he said. "The advantages of that technique are that you get good visualization of the tendon and about 10 cm of tendon release, but the disadvantages are general anesthesia and the size of the incision leads to concerns about sepsis (blood infection). The midcannon technique can be done with the horse standing and also has good visualization of the tendon, but the incision is small and there is a concern of damaging nearby structures."

Waguespack and colleagues modified the midpastern technique on cadaver limbs by using an incision just 1 cm above the collateral cartilage (which attach to the sides of the coffin bone and act as flexible extensions of it, projecting upward and rearward). The next step was performing the technique on six adult horses.

"The procedure was fairly easy to do either with the limb held up by a helper or the surgeon's other hand," he reported. "It took about 13 minutes, and all tendons were successfully cut and healed normally with no postoperative infection."

He noted that they achieved 10 cm of tendon release with no damage to surrounding structures detected via ultrasound, but four of the six horses experienced subluxation (partial dislocation) of the coffin, or distal interphalangeal, joint by Day 30. "An elevated shoe or wedge would probably work better against this than the extended heel shoe we used," he commented.

"The midcannon approach is the first choice for deep digital flexor tenotomy, but this modified technique is an alternative," Waguespack concluded. "An alternative approach is needed when multiple procedures have been performed in this region or if significant fibrosis in the area makes this approach difficult."