Tackling Laminitis, Sinker Issues With Heart Bars

Teamwork between the farrier, veterinarian and owner helped this horse survive and return to work after a 5-month ordeal

By Courtney S. Diehl, DVM, Cricket McLaren, CF, Wendy Parker

Ghost, a gray Quarter Horse, was born in 1993 on the plains of Wyoming. Purchased by the Parker family in 1998 as a potential barrel horse, he was initially spooky and headstrong.

After a great deal of training, Ghost settled into working in many disciplines and was a popular fixture at 4-H Club horse shows, barrel races, high school rodeos and Little Britches Rodeos, sometimes competing in as many as nine events in a day.

In fact, the horse and his high school rider had a college rodeo scholarship in their sights — until that all changed one day in September of 2012.

The Parkers found the horse standing on three legs. His right hind leg was swollen with a deep laceration along the back of the hock, which had invaded the flexor tendon sheath. There was considerable contamination and Ghost was referred to an equine surgical facility for treatment.

The surgery was successful, but 5 days later, Ghost developed laminitis in all four feet along with severe diarrhea while still at the hospital. His unshod feet were iced and placed in Soft Ride boots. An aggressive fluid therapy and pain management plan was started that included antibiotics and continuous pain medications through an IV drip.

While the initial radiographs did not reveal any pedal bone rotation, “sinking” showed up on the second set of films. There was also a measurable loss in sole thickness between the first and second films along with an increase in the hoof distal phalangeal distance (HDPD). The verdict from the vets was “fatal sinker syndrome,” a feared complication of laminitis with a low survival rate.

Just 10 days after the onset of laminitis, the horse slept during a 2-hour journey to the ranch and looked almost dead when he arrived. Radiographs taken on the ranch showed more sinking of the pedal bone and minimal palmar rotation.

The sole depth on both front feet was 0.2 inches while the normal sole depth should be about 0.4 inches and the extensor process to the coronet measured 0.75 inches. As shown in the X-rays, the beginning of a radiolucent line indicated the laminae had begun to separate, an early indication of how severe this laminitis was going to become.

Ghost was thin and his manure was pudding-like, yet he was interested in hay and grazing the sparse grass still available outside. He was Opel 4/5 grade lame in all four feet.

The horse was taken off all medications, including pain drugs. All four feet were fitted with custom-built heart bar shoes to be reset every 4 weeks. The goal of the farrier, vet and owner team was to manage the laminitis and sinker concerns without encouraging further damage due to the use of drugs.

Ghost had been shod for only 10 days in the shoes he’d been wearing at the time of the injury, so heart bars were built from the Delta wide web keg shoes he had been wearing. A piece of 5/16-by 2-inch flat cut stock was fitted to the frog and MIG welded into place on all four shoes. The frog plate area was built

FARRIER TAKEAWAYS

- Measuring the loss of sole thickness is essential in treating laminitis.
- Radiograph updates are important to see if progress is being made.
- There are ways to deal with laminitis without drugs.
- Extraordinary care by the owner over a lengthy period of time is invaluable.
- As conditions change, new treatment plans have to be considered.
- Each team member must have a mutual respect for the other members’ duties and support them when things become difficult.
up with Equi-Pak to provide constant frog support even when the foot wasn’t loaded.

Even with the farrier working quickly, it was hard for Ghost to stand on three legs, and it took three additional people to help support him as each of the shoes was applied with four slim nails. As each foot was set and lowered to the ground, Ghost would pull it underneath, load it fully and rest the opposite leg while chewing hay.

An obvious convex deformity in all four soles indicated the coffin bone was pressing against the sole. Once the shoes were set, the soles were filled with a thin layer of Equi-Pak to avoid increased sole pressure. The horse walked very gingerly to his outdoor pen, which was bedded heavily with wood shavings. He was hand fed and watered. He ate well and remained standing.

His manure was normal the following day and he finally laid down after 36 hours. By this time, it was assumed that the pain medication had cleared out of his system. He slept most of the time, only waking up to eat and drink.

It was decided to keep him off all medications to avoid having him continue to sink due to the damaged laminae. He only got to his feet to urinate, defecate and to change sides.

The owner fed a beet pulp mash mixed with electrolytes and probiotics, kept water buckets nearby and had fresh hay available. The horse became very good at eating while lying down.

Four days after Ghost first laid down, he was moved into the barn, as the weather turned cold. He was bedded on a thick pad of straw as he had formed several small body sores from resting on the wood shavings. With the straw bedding, the sores began to heal and new ones did not form. Even though his manure remained normal, Ghost continued to lose weight. Alfalfa mash, Tahitian Noni and mineral oil were added to the diet and he started to stand on his own for short periods 3 weeks later.

Teamwork Is Critical

Recognizing that most of George Platt’s laminitis cases made full recoveries, Courtney Diehl and Cricket McLaren worked closely with the Eagle, Colo., equine veterinarian for a number of years. Platt and Texas farrier Burney Chapman, now both deceased, developed very successful methods of treating laminitic horses with custom built, fitted heart bar shoes. Today, Diehl and McLaren use these methods to treat laminitis cases and have worked together since 2007 in treating lameness issues.

This case study demonstrates how teamwork on the part of the farrier, veterinarian and horse owner was critical in not only saving the horse’s life, but played a key role in bringing the horse back to soundness and athletic endeavors.

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outside several times. He did well for 2 weeks, but began to walk more slowly and started lying down more frequently by mid-November.

Since there was a foul smelling discharge from the feet, a full dorsal hoof wall resection was performed on the front feet to clean out the pus-like material and to allow derotation of the coffin bone. This procedure had not been performed earlier due to concerns about the stability of the quarters. Based on the Sept. 23 radiographs, it was suspected that the laminar attachments had failed all the way around the foot.

The laminae were necrotic underneath the dorsal hoof wall up to 1.5 inches below the coronet band. The damage extended medially and laterally into the quarters. Since it was impossible to resect the quarters without collapsing the foot, a window was opened to the first nail hole on each side of the foot. The owner was instructed to soak the feet each day in a Betadine and Epsom salt mixture and to pack the resected areas with sugardine, a mixture of Betadine and table sugar.

At this point, it was not known if the severely weakened feet would survive the resection. Ghost was not cooperative for the soaking and wrapping that followed the resection. The horse jerked the feet away and repeatedly slammed his head into the barn’s rafters. The owner noted: “He must have hit his head six times pulling back. Broke the crossties. Not eating at 10 p.m. Maybe his head hurts.”

Later, the owner noted that the slippers were holding up and the horse continued to slam his head into the beams. Despite his behavior, the feet were soaked, dressed daily and wrapped with duct tape each day. This 1- to 2-hour daily ordeal left both the horse and owner exhausted.

Since the team was unsure if the resected feet would be able to support weight without collapsing, this was a nerve-racking day. The shoes were reset so weight bearing without the support of the shoe could be held to a minimum.

The horse stood on a thick rubber mat with a rubber saddle pad placed under the bare foot. Since the hoof capsule splayed as the foot was loaded, efforts were made to keep his weight on the opposite shod foot until the shoe could be replaced.

As each shoe was pulled and the foot trimmed, it was evident that the soles were sloughing away with more of a pus-like discharge under the hoof capsule. The hoof walls were separated at the white line along the quarters. Almost two-thirds of the sole was sloughing on the front feet, leaving exposed necrotic laminae. The soles were left unfilled to allow the sugardine and soaking to address the infection. Side clips were drawn on the shoes to prevent the resected feet from expanding. The toes of the front shoes were ground back to roughly one-third of the thickness of the web to ease breakover.

New radiographs showed a decrease in the palmar rotation while the tip of the coffin bone looked normal. There was no remodeling or evidence of infection. An excerpt from the owner’s notes
stated: “The heart bars were pulled off and Ghost’s sole came off with it. A lovely sight. All the dead laminae are sloughing off, so he has literally no soles and we get to soak all four feet. The farrier/vet team was very happy with his progress. I was a little in horror but I trust them.”

The hind feet were also draining and the existing resection was widened to allow more exposure of the infection. The sole of the right hind foot was in poor condition and also required a resection. The left hind foot’s sole was in fairly good shape, only opening at the toe. Just enough sole was pared from the toe to provide adequate drainage.

Since Ghost’s weight had gradually dropped from 1,100 pounds to 910 pounds during November, Purina’s Equine Senior was added to his daily mash. By early December, he had cautiously begun to move around again, but was reluctant to go outside in the snow. Standing for most of the day, he gained back some weight. Based on the rapid growth of the feet, it was decided to reset him at the 3-week mark rather than waiting the full 4 weeks as had earlier been planned.

By this reset, Ghost was markedly improved, the dorsal hoof resection was dry and drainage from the soles had decreased significantly. His comfort level had improved and the soles of the front feet had granulated. There was approximately a 2-centimeter diameter of sole granulation around the tip of the frog. Once medicated Equi-Pak was added to the soles and the horse loaded the foot, this material migrated under the unattached medial hoof wall and came out on the resected toe. The straw bedding was kept deep, but he only laid on it occasionally.

By the next shoeing, he was gaining weight and his comfort level had improved significantly. The hoof wall growth was dramatic, although there was a small serum pocket remaining in the sole of the right front foot. Otherwise, there was minimal drainage. The hoof resections were dry and hard, and the soles were almost fully granulated except for a remaining separation at the white line.

The shoes were reset and Borium-tipped nails were used to provide traction in the packed snow. After the reset, Ghost was jogged on the driveway with no evidence of lameness.

Ghost was turned out with the other horses and stayed out overnight for the first time. The owner was told to ease him back into very

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light exercise, which was done by taking him along on trail rides (without a rider) and bringing him along with other horses as a visitor at the rodeo grounds.

Ghost was hauled to an indoor arena for his first real ride. He moved out perfectly, smooth and sound as the owner climbed aboard. He walked, trotted and cantered, changed leads and acted like he always had before the September injury. The resected hoof walls had not yet grown all of the way down, but the hoof capsules were hardened and no longer needed dressings or bandages.

The teamwork between Ghost’s owner, the veterinarian and the farrier was vital to this rehabilitation process. Without this group effort, the successful outcome would have been impossible.

Each team member maintained respect for the other’s duties and skills and supported each other when things became difficult. If one team member had failed in their duties, the entire undertaking would have been in vain. We did not know if saving Ghost would be possible, if he did survive the ordeal or if he would be able to return to work.

We all learned and benefitted tremendously from this experience, and seeing Ghost back at work is the ultimate reward.

Wendy Parker summed it up best: “When we brought Ghost home in mid-September and Courtney looked at the X-rays, she said to me, ‘Failure is not an option.’ That day, the team was committed to saving Ghost’s life, and to this day continues to fight for him.”

Using Heart Bars With Laminitis

This reprint of a 1984 research paper presented at the American Association of Equine Practitioners annual meeting is as valid today as it was nearly 30 years ago. The 16-page report covers all aspects of laminitis, including detection, diagnosis, the use of heart bar shoes and treatment as well as answers to the 20 most commonly asked questions concerning laminitis. The $6.95 report is available by going to www.americanfarriers.com/ff/catalog2013 and scrolling down to “Laminitis And Heart Bar Shoes.”

Hold The Bute!

Equine veterinarian George Platt never liked to use bute when treating laminitic horses. Now deceased, the Eagle, Colo., member of the International Equine Veterinarians Hall Of Fame, believed that killing pain with this anti-inflammatory drug could potentially lead to killing the horse.

While bute kills the pain, Platt found it allowed the horse to continue to stand and often led to rotation of P3, which in turn could crush the circumflex artery. That would cut off the blood supply to P3, resulting in the demineralization of the tip of the coffin bone. It could also lead to the formation of a blood clot in the circumflex artery, which might result in the loss of the entire bone.

Platt stopped using bute in 1970 and relied on the precise application of a heart bar shoe to treat laminitis. Platt knew many veterinarians disagreed with him on the use of bute, but his years of experience backed up his view.

In a 2006 American Farriers Journal article, Platt stated: “If I can get to a horse that has laminitis before they get any bute, I know I can fix him.”