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THE USE OF THERAPEUTIC SHOEING TO ENHANCE SOUNDNESS IN A TRIPARTE NAVICULAR HORSE

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An eight year old Quarterhorse gelding was presented with bilateral front limb lameness. The owners reported they had bought the horse as a four year old and was lame at the time of purchase. The horse was rested 6 months and returned to pasture sound. Upon riding after the turnout, the horse again exhibited lameness-depending on the amount of riding, the severity of lameness varied.

The lameness became more severe over the next two years and a veterinarian specializing in podiatry was employed to try therapeutic shoeing. Wedge heel-rolled toe-“navicular” shoes were applied and the condition improved initially, but after a short period of time, the lameness continued to worsen for the next year. The horse was spending 90 percent of the time lying down and exhibited grade 3 to 4 lameness over the next year. Radiographs (see Fig. 1) and a diagnostic lameness examination at a veterinary teaching hospital revealed the triparte navicular condition and a grave prognosis was given. The horse was referred to our clinic to employ the atraumatic wooden rocking horseshoe (Steward Clog) in an attempt to help return the horse to useable soundness.

The gelding was placed in the rocking horseshoe (Steward Clog-(Fig.2) with a 3 degree wedge pad between the shoe and the sole impression material. The breakover was extended behind the apex of the frog on the 1 1/2 inch tall wedged shoe. The 1/2 inch thick, wedged shoe with distally placed breakover and three degree wedge pad were indicated due to the horse’s discomfort he exhibited after the heels were trimmed. The heels were trimmed short to the widest part of the frog to overcome the contraction of the heel region and to allow critical contact and position of the sole impression material to the heel region. The combined 6 degree wedge effect of the shoe and pad reduced the compressive force on the navicular bone by 24% (2). Combined with the palmarly placed breakover and heel height of the shoe and wedge, the static and dynamic compression forces of the deep digital flexor tendon on the triparte navicular bones were significantly reduced.

The horse responded very favorably to the wooden shoes and was “pasture sound” within a week after applying the therapeutic shoes. The owner was able to ride the horse- at a walk- for the first time in over two years after wearing the clogs for 75 days. The horse did have three periods of acute lameness over the next year when shoes were jerked off or when abscesses became evident. The cause of the abscesses were due to “hot nails” when applying the steel shoeing system- after the wooden shoes had improved the lameness. The horse now spends less than 10 percent of the day lying down and is ridden at a walk, trot and lope.

Shoes were changed at 4 week intervals and the wooden shoes were eventually replaced as soundness improved with a similar designed traditional shoeing system (see Fig.3) using a roll-toe, rocker-toe shoe, frog-wedge pad, and impression material (see Fig.4). Radiographs were taken at each shoeing to observe sole growth and the palmar angle of the coffin bone. The comfort of the horse was always taken into consideration when deciding how much wedging was necessary to relieve the painful navicular-heel area. The horse was in the shoeing program for 1 year.

The now bare-footed (unshod) horse continues to be lightly ridden and is enjoying life having been cared for by a devoted, loving owner who unfortunately shares her companion's lack of normal soundness (see Fig.5). The horse can be seen "kicking up his heels" running across his paddock for the first time since arriving over four years ago.

The response to this therapeutic shoeing concept after other attempts at treatment with medications and therapeutic navicular shoeing was remarkable. The long term prognosis of the horse for light riding appears to be good at this time, despite the obvious radiographic abnormalities and past history.

Fig. 1. This radiograph of the navicular region shows the three parts of the navicular bone. Both feet had the abnormal navicular bones and the lameness was obvious in both front feet. The horse has been treated only with oral medications and therapeutic shoeing on his return to soundness.

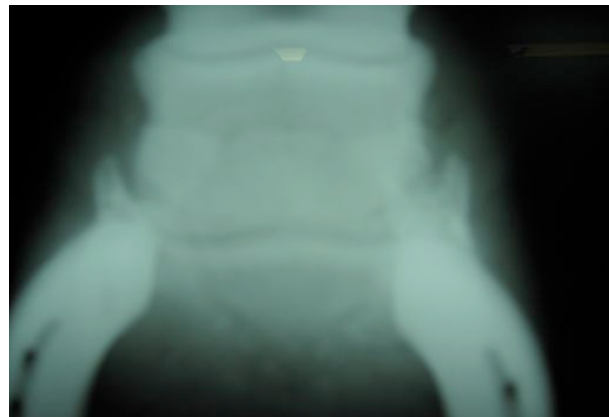


Fig. 2. This lateral radiograph shows the wooden rocking horseshoe applied with screws. Note the abnormally shaped navicular bone on this slightly oblique view. The shoe provided immediate pain relief and improved soundness to the point the horse was able to be ridden.



Fig.3. The use of a square-toe, rolled –toe shoe moves breakover behind the tip of the coffin bone. This shoe along with the use of the wedge pad and sole impression material is designed to relieve the compression of the deep digital flexor tendon as it passes over the abnormal navicular bone. This shoeing system employs the concept of “engaging the frog” to help facilitate the hoof hemodynamic system to aid in concussion dissolution and a probable increase in nutrient blood flow. This hoof has to find and reform a new equilibrium to achieve a relative condition of soundness.



Fig. 4. These pictures show the frog pad and sole impression material which help to reverse the contraction of the heels. This system is trying to duplicate the normal functions of the frog, digital cushion, and sole of the hoof to absorb and recycle the energies of concussion, raise the back of the hoof to facilitate breakover and relieve the compression forces of the deep digital flexor tendon on the navicular, and to extend heel support caudally in allowing heel-first landing.



Fig. 5. This dedicated owner has gone above and beyond the call of duty to see that her beloved horse doesn't have to deal with the pain of walking that she herself encounters. The malformed navicular bones had rendered this horse unsound for years, but with the help of shoeing ideas extrapolated from laminitic therapeutic shoeing-this horse is now being ridden unshod at a walk, trot, and lope.