

## HOOF ABSCESSSES

by Rick Wolfe DVM

The most common cause of lameness in all groups of horses is foot or feet problems. If we compare the surface area of the bottom of a human foot with the surface area of the bottom of a horse's foot, it is quite obvious that the horse's foot has to support a lot of weight per square inch. As a horse runs or even gallops, this concussion increases dramatically as a result of the weight coming down and the strength of the horse pulling with the front limbs and pushing with the rear limbs. I attended a seminar some years ago where a research paper was presented indicating that a thoroughbred race horse would put about 6,500 pounds of pressure on EACH front limb during an average race. This may be an extreme example but the point is this: That relatively small hoof has to support a lot of weight.

For this writing I will simplify the anatomy of the hoof: The bone inside the hoof is called the coffin bone or the 3<sup>rd</sup> phalanx. Immediately behind this bone is a small "boat shaped" bone nestled between the 2<sup>nd</sup> and 3<sup>rd</sup> phalanx called the navicular bone. The bones are attached to the rest of the skeleton of the horse by ligaments and tendons. The hoof wall, sole, frog, and the remaining soft tissue is attached to the coffin bone or 3<sup>rd</sup> phalanx. Important to this discussion is the fact that the wall and sole must be attached to the bone inside the foot whereby the hoof can continue to grow and at the same time absorb all the concussion without coming off. This is accomplished by a network of lamina which interconnect the hoof wall and sole to the coffin bone. This works and even looks somewhat like "velcro" with one major exception which is this: Once these two connecting lamina are pulled apart, they DO NOT go back together, they have to grow back which is another subject. Also, the navicular bone is another subject and will not be discussed here. Before we leave anatomy it is important to remember that the hoof wall and sole grow continually from the coronary band (the hair line).

So what about abscesses? A hoof abscess is a small pocket of infection within the hoof. They can be very small, even smaller than a small marble and cause tremendous pain and lameness. An abscess can also cause very mild lameness, and can be that way for a long time. A very common call for all equine veterinarians goes something like this: "Doc, my horse must have broke something, he is dead lame, was fine this morning when I fed, and I can't find anything in his foot." Again, I am going to be very simple in describing the cause of these abscesses. Generally, in order for an abscess to form in the hoof there has to be BLOOD for the bacteria or fungi to grow in. Therefore, anything that could cause the least bit of hemorrhage inside the hoof COULD cause an abscess. This would include sole bruises, wall cracks, stepping on nails or other similar objects, horseshoe nails driven too "close" or horseshoe nails binding on the foot because the shoe became warped (sprung) or merely being on too long between changing shoes. THRUSH in the bottom of the foot can certainly cause an abscess. It is important to note that any or all of these conditions can exist and not form an abscess, as the horse does have a immune system which fights off these infections most but not all the of time.

The diagnosis of a hoof abscess is made using several criteria. The history alone is a big one, having a sound horse one day and a lame one the next, especially with no history of exercise or performance. Hoof testers (those big pliers that farriers and veterinarians pinch the sole with) in my experience are frequently "liars." I have seen literally

thousands of horses' hooves that had one or even more abscesses that didn't flinch when I applied pressure on the hoof. However, if we get lucky, hoof testers may indicate the exact spot of an abscess. Sometimes a veterinarian may "block out" a foot whereby the horse has no feeling in the hoof for an hour or so. If the horse goes sound during this time, this would help firm up the diagnosis. My most trusted way of diagnosing this condition is simply finding the inflammation. God made inflammation, and it doesn't lie. An experienced veterinarian can do this quite easily.

In discussing treatment, I would first like to say a word about farriers, or horseshoers, or blacksmiths as I normally call them. These people have a very hard job and I truly respect them. I have dealt with hundreds of blacksmiths over the years and without exception all of them really tried to do a good job. Putting shoes on a horse in a back breaking position getting the size, angle, nail placement, and everything else right in all kinds of weather frequently with a semi cooperative horse is downright difficult. I can truly say that I have learned more from blacksmiths than they have learned from me.

Without exception, ALL hoof abscesses migrate up toward the hairline. If left untreated many of these abscesses will move up the inside of the hoof wall, drain from the hairline and the horse will become normal and sound. IF the abscess can be found somewhere on the sole, the veterinarian or blacksmith can cut away a small portion of the sole and drain it. However, this is many times not possible, and even if it is drained from the bottom it still migrates to the hair line over a period of time. In my experience, these horses are not truly 100% until this happens; they may be 98%, but not quite 100%. This is more obvious in performance or race horses. Abscesses do not appear on radiographs and therefore will not identify the location. Many veterinarians including myself have tried to locate and drain these things through the wall with a dremel tool or drill with very little success. To locate and drain many of these abscesses through the sole would require very intensive cutting and digging. The treatment in these cases may take longer to heal than the initial problem and quite frankly can turn out to be a big mess. Another PROBLEM to consider is when an abscess is migrating toward the hairline but right in the middle of the foot toward the coffin bone. This can cause severe infection of the bone and the result can be disastrous. These cases may require radical surgery with a very guarded prognosis. I am frequently asked about antibiotic therapy to "kill" the infection. This sounds like a great idea but clinically doesn't work most of the time.

The time tested treatment is soaking. Unfortunately this is the currently best treatment even though it is hundreds of years old. In our practice we advise clients to stand the horse's foot in a safe rubber bucket and add warm water to a level of about 3 inches above the hairline, then add plenty of Epsom salt until it will not dissolve any longer. Soak for about 1 hour at least once a day, the more soaking, the quicker it comes out. Most of the time it takes four or five days of this treatment but it can take much longer in refractory cases. NOTE: When the abscess reaches the hairline it doesn't just pour out and drain, it seeps. There is a foul odor at the site and the horse is now sound. We normally recommend soaking for an extra day or two to be sure it is totally resolved. Other veterinarians or blacksmiths may have other variations of this treatment or other completely different approaches, which proves one thing, that occasionally these abscesses can be very difficult.

The majority of these cases are resolved in a few days and the horse returns to normal activity. This condition is very common and does not normally affect future soundness.