



Equine Soundness

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Inside this issue:

Why a Ground Parallel Coffin Bone? 1

Hoof Cracks 2

All About Pus and Abscesses 3

Terminology 4

Why a Ground Parallel Coffin Bone?

The argument about the ground parallel coffin bone is endless. Some say it needs to be 3-5° elevated in the back, others do not pay attention to the issue at all. For our school it is the backbone of our hoof care efforts.

At Equine Soundness we teach the necessity of the ground parallel coffinbone.

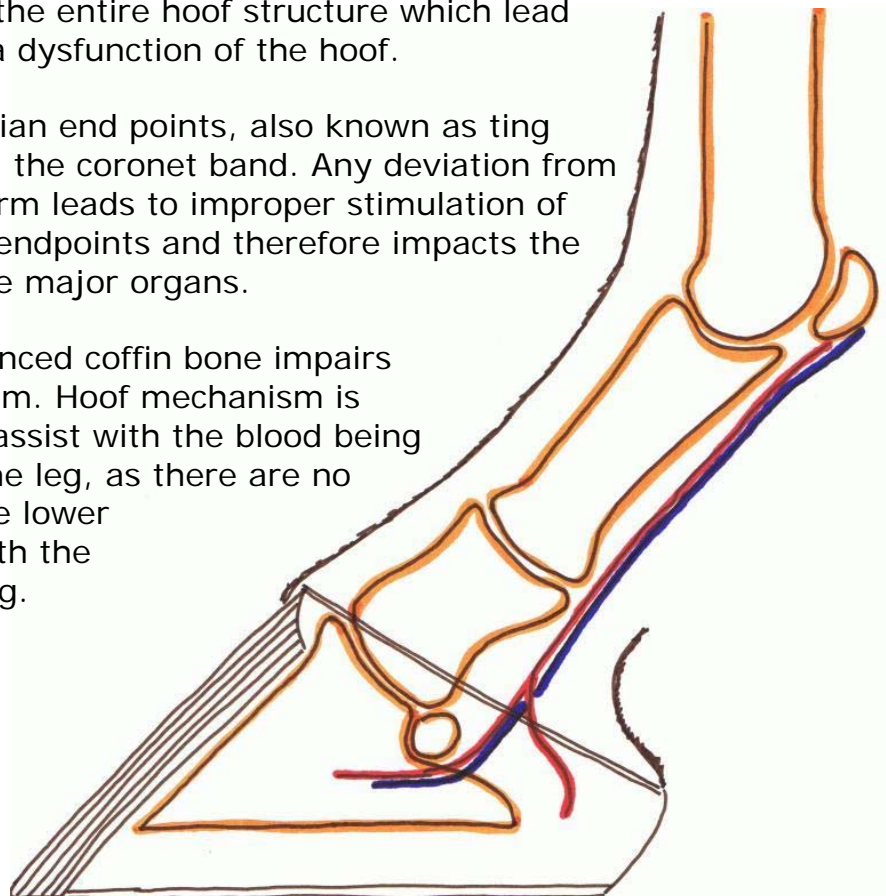
Here is why:

1.) The outer edge of the coffin bone is very sharp. Any deviation from ground parallel would pinch the circumflex artery that surrounds the edge of the coffin bone and nourishes the sole corium.

2.) If the coffin bone is not ground parallel, there are unphysiological forces on the entire hoof structure which lead over time to a dysfunction of the hoof.

3.) The meridian end points, also known as ting points, are on the coronet band. Any deviation from the correct form leads to improper stimulation of the meridian endpoints and therefore impacts the function of the major organs.

4.) An unbalanced coffin bone impairs hoofmechanism. Hoof mechanism is important to assist with the blood being pumped up the leg, as there are no muscles in the lower leg to help with the blood pumping.



Hoof Cracks

To function properly, a hoof must be able to expand on impact, i.e. when bearing weight: from zero at the tip of the toe to the greatest expansion in the area of the heel (which should not be allowed to grow long enough to strike the ground at an angle, thus creating damaging lever forces in the hoof--one of the main causes of navicular syndrome. Furthermore, the sole of the hoof is not intended for compression, but rather is designed to stretch, distributing the impact force in the direction of the ground.



Unbearable stresses arise when these physical factors are ignored and the hoof function compromised, as through the use of shoes (which, in fact, disrupt the entire hoof mechanism) or long heels.

A shod hoof cannot expand: the hoof walls cannot spread apart on impact, the sole is compressed instead of drawn flat and, behind the last nail, a bend appears in the hoof wall. As a result of these forced deformations, cracks occur in the hoof. And as long as the unnatural forces (and their source!) are present, the cracks cannot permanently heal.

Also, it is well known that immobilization delays healing. Therefore, shutting down the hoof mechanism (as through shoeing or stall rest) will also forestall a satisfactory recovery. A fully functioning hoof mechanism is the prerequisite for normal blood supply in this region, and therefore vital for healing.

With deficient blood supply, only poor horn is formed. The crack may not grow out, may become larger, or recur.

As soon as a hoof with cracks is returned to a natural hoof shape, the cracks will heal and not recur.

In any case, strong disinfecting agents are to be avoided; their drying action makes the newly growing horn weak and brittle. What hooves do need is sufficient moisture through daily exposure to water.

ALL ABOUT PUS **AND ABSCESSSES**

...and other icky stuff
by Nancy L. Johnson DVM

Pus (or purulent exudate in vet terms) is a mixture of white blood cells, serum, wound secretion, and often some whole blood. It arises because of the body's immune response to the presence of undesirable matter, and is a natural effort by the body to be cleansed of this matter. If the foreign matter came from an outside source (for example, stepping on a nail), it is likely contaminated with bacteria that will flourish in the wound environment. However, the presence of bacteria is not at all necessary for the formation of pus and abscessing. A very common example of this would be the sterile abscesses that occasionally form at vaccine sites in dogs. Occasionally a few weeks after vaccinating a dog you will see a fluid-filled swelling at the injection site. If you aspirate this fluid and look under the microscope you will see classic "pus," but if you culture it there will be no growth. The dog's body found the vaccine to be an irritant, walled the area off and created an abscess as a means to remove the offensive particles.



This is much the same thing as happens in the hooves of horses in barefoot lameness rehabilitation. As the blood supply to the corium is increased, some of the corium is just not healthy enough to be restored to full function. The body finds this sick or dead tissue offensive and again sends in the immune system products - especially macrophages and neutrophils, to "eat up" this tissue. Then these now toxic immune system cells are ejected from the body creating the drainage you see as an abscess.

While shod, this area of corium was probably just barely alive. As shoes are removed and the animal is trimmed this tissue is stretched to accommodate hoof mechanism as well as the slowly expanding hoof size. Some of this sick corium is not up to the job and dies. While still shod the horse did not experience much pain associated with this problem because first, the tissue was not experiencing much demand and second, shoes cause horse's feet to be numb. Shod horses feet are not totally without sensation, but their sensitivity is much reduced. The poor blood flow caused by the presence of the shoe creates an "asleep" sensation, much like we experience when our leg falls asleep after sitting in a cramped position for too long.

As a veterinarian with over 20 years of clinical experience I have no problem at all accepting the presence of sterile abscesses, and in fact have seen literally hundreds of them in the course of my career.

Nancy L. Johnson DVM



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We offer hoof care instruction for horse owners, professional students, veterinarians and farriers. You can take one course at a time and pay as you go. Study all the theory at home and meet with one of our experienced instructors in your area for the practical part.

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Hoof Care for the 21st Century

Terminology

Blue line: Coronet (hairline) angle optimal 30° to the ground, which usually indicates a ground parallel coffin bone

Green line: Toe length

Red line: Toe Height

