

Trimming the Club footed foal

By Ken Kirkpatrick

Let me define a few things first. Clubfoot is a misnomer, but this is the name. Clubfoot is always on one front foot (not both). A clubfooted foal will always graze with the clubfoot under him and the normal foot extended. High heel / Low heel syndrome is closely related, but I don't know if it is the same as "Clubfoot". If a clubfoot is not corrected in the first year or so, it can't be reversed, but barefoot trim methods will help.

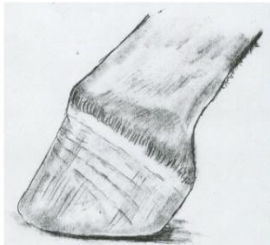
The following is from Dr. R.F. Redden, DVM

Club feet are the result of mechanical imbalances that are most likely attributed to malfunctions within the deep digital flexor muscle belly. The muscle fibers normally receive an electrical stimulus that tells them to contract. This causes the fibers to shorten and subsequently move load. Apparently the imbalance is a problem at the synopsis (nerves/muscle cell unit), which results in the muscle receiving a **continuous command to contract**. This **spastic muscle** transfers the constant shortening, or pulling, to the tendon that is firmly attached to the semi-lunar crest along the posterior palmar surface of the coffin bone.

How to access the damage;



Grade 1
The hoof angle is 3-5 degrees greater than the opposing foot and a characteristic fullness is present at the coronary band due to partial luxation of P11 and P13.



Grade 2
The hoof angle is 5-8 degrees greater than the opposing foot with growth rings wider at the heel than at the toe. Heel will not touch the ground when trimmed to normal length.

Dr. Redden's Club Foot Classification



Grade 3
The anterior hoof wall is dishd and growth rings at the heel are twice as wide as on the toe. Radiographically P11 exhibits demineralization and lipping along the apex.



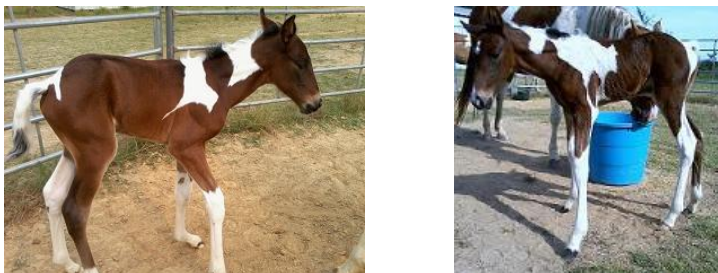
Grade 4
The anterior hoof wall is heavily dishd and the angle is 80 degrees or more. The coronary band is as high at the heel as at the toe and the sole is below the ground surface of the wall. Radiographically P11 is rounded due to extensive demineralization and rotation may be present.

My experience- Colt had a grade I or II left clubfoot that became evident at 5 months of age and Sun had a grade +II right fore that was seen 3 days after she was brought home at age 4 months. Colt is the only foal born at our farm to develop a club foot and Sun spent her first 4 months at Grapevine. It is important to note that club-footed horses, 70%-80% of the time, present as a right (front) clubfoot. This has to be an important clue to this mystery.

What I am doing with Colt is mostly trimming. He is in the big pasture, so he travels quite a bit daily, because the best grazing is over a quarter of a mile from water and hay. He has always had access to a complete mineral (Purina W&R TX 7.5 complete). He is out of a Mustang mare, so I was surprised by his clubfoot, I thought the genetic thing was not likely and he is the first we have ever raised to get one. After looking back, his pastern conformation as a newborn (below pic w/ mama day of foaling) is the most upright of any we have foaled. The 2nd pic is after the left foot had changed. Notice he still is fairly upright at 5 months in the 2nd picture.



In the pictures below notice Dakota, on her day of foaling, has distinctly low fetlocks, which look correct the next day (2nd pic).



If this is inherited, my guess is that it is a metabolic disorder that presents differently depending on the minerals and proteins available to foals.

The following is taken from an article on how people are treated for cramping muscles.

What causes left-sided or right-sided Muscle Spasms or Cramps?

One-sided leg cramps or spasms can help with the decision of what to supplement, whereby the left side is usually indicative of extra Calcium requirements, while the right side is generally an indication of Magnesium being needed, although a combination of Calcium *and* Magnesium may be necessary to get relief as a result of both being low. If right-sided muscle cramps respond to calcium (rather than to magnesium or other acidifying remedies), then dehydration is suspect, and extra sodium or potassium may be required instead.

Once a foal has the hoof symptoms the why is not the most important issue. For this foal it is how to reverse or minimize the damage.

The trim is based on barefoot trim techniques. Never trim a healthy frog. Never remove live sole. Removing too much hoof horn causes fast hoof growth. In the club foot the problem is twofold. First the heel grows too fast (this can be seen when the hoof is viewed from the side).



Second the toe doesn't seem to grow or is very slow. As a result of the heel growth the frog doesn't get enough pressure to keep the heel from contracting. If the heel is kept at the live sole and not allowed to grow much more than 1/8 inch past, the heel will not contract. This leaves the toe

problem. Two steps must be done to fix this. First the quarters have to be left long, a $\frac{1}{4}$ inch past the live sole. Then taper from the quarter to the heel. Second the toe must be made passive. Remove the toe horn to the sole. Then from the quarters taper to the toe and bevel the hoof so no toe horn is longer than the sole and is rolled at least $\frac{1}{4}$ inch up the front. This should set break-over between the apex of the frog and the end of the sole, but not behind the middle of the hoof front to back.



The relief of toe contact will cause the horn growth to go into overdrive and you will notice the change in a week or two. I do a maintenance trim every two weeks. Results are good and steady.



Notice toe growth and front profile. The toe is growing faster than the quarters (note the growth lines as they travel from the coronet down the hoof). The hoof is trying to make the toe as long as the quarters, but I am keeping the toe short to continue the process.

I noticed after two months of this technique that Colt was eating hay with his bad foot forward. Hopefully that is a good sign. And a week later I watched

him gallop all the way from the back pasture on a left lead. This is a sure sign that he is not having any pain in that left leg.

Sun is not improving as fast, so I increased magnesium supplementation. And I moved her band of weanlings to the main pasture with Colt and the big herd. I know Colt has experienced much better progress and the difference is he has shown 2 or 3 times the horn growth. I am banking on the cause as more miles of movement. Sun and Maximus both have slight knock knees and spay foot. The trim to correct this has been slow, again maybe because they are not traveling enough miles. This move should address this as well.



Jan 7, 2012 Before trim. Starting to shed the frog. Note the heel bulbs, is the inter part of the foot adjusting to the new trim.



Jan 21, 2012 after trim.

The idea is to make a platform for the hoof like a chair rocker. Put the longest parts of the hoof (quarters) on a perpendicular line to the midpoint between the frog and the front of the sole.



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the frog is all but replaced. The heel bulbs are large & full and in the proper location.



The growth of hoof wall is very evident from this picture. Near the bottom is a dark ring that shows how fast the heel was growing 4 or 5 months ago & the top ½" of growth, the last month, looks normal. The day this picture was taken Colt galloped in from the pasture on a left lead, so I am optimistic that this hoof will be completely normal in a few months. I will continue the two week trim cycle until then.

In April I broke my left forearm, so trimming and documentation has suffered. Both Colt and Sun have made progress, sun has really made the most, but she had farther to go. The increase in magnesium may have helped or maybe just the extra miles.

I Trimmed both Colt and Sun on May 13th and June 15th. Then on July 2nd I took the following photos of Sun.



Sun's heels are almost even.



Sun's view from left.



Sun's right view.



left



right

Sun is not perfect, but much better that she was six months ago.

One thing I didn't mention yet is sometimes in an adult horse the clubfoot will be smaller than the normal one. This may be the contracted heel that goes along with that. Although horses can have a contracted heel without a clubfoot, their hoof size difference isn't as pronounced as in the clubfooted horse. These are just my own observations.