

Similarity Between the Chronic Laminitic Foot and the Club Foot: *Hence Similar Treatment Protocol*

Gene Ovnicek, RMF

Over the last 10 to 15 years that I've been dealing with primarily lame or pathologic horses, I've found that the treatment for chronic laminitis (using Natural Balance Guidelines) has helped me better understand and manage clubbed and mismatched feet.

Club Feet and/or High-Low, mismatched feet are represented in about 60% or more of the domestic horse population. Within that 60%:

- 1) Approximately 30% - 40% are seen as **Minor** conditions
 - 2) Approximately 50% - 60% are seen as **Moderate** conditions
 - 3) Approximately 10% are seen as a **Severe** condition
- **Minor** upright feet are seldom ever noticed by skilled horsemen.
 - **Moderate** club feet – upright feet are usually noticed by knowledgeable horsemen
 - **Severe** club feet are noticeable by almost everyone

Minor Upright (Mismatched) Feet Characteristics

- 1) The frog apex is close to a “normal” distance from the dorsal wall.
- 2) The heels terminate ahead of the frog buttress.
- 3) The outer wall at the heels has a similar curvature as the bars.
- 4) The dorsal wall is normally straight but will become dished when left long.
- 5) The general shape of the foot is round
- 6) The heels grow forward if left with extra length.

Moderate Club or Upright Feet Characteristics (Grade 1 or 2+)

- 1) The frog apex is a greater distance from the dorsal wall than a “normal” foot.
- 2) The heels terminate close to the back of the frog buttress.
- 3) The hoof walls at the heels curves abruptly while the bars substantially straighter.
- 4) The dorsal wall is frequently straight below the coronary band, but develops a dish if the toe and heels are left too long.
- 5) The general shape of the foot is straighter on the sides.
- 6) The heels grow in a vertical direction but can become underrun if the heel and toe are left too long.

Severe Club Feet (Grade 3 or higher)

- 1) The frog apex is a noticeably greater distance from the dorsal wall than a “normal” foot.
- 2) The frog appears very short in comparison to other feet.
- 3) The heels terminate at the back of the frog buttress.
- 4) The outer wall at the heels has a very abrupt curvature, yet the bars are extremely straight.
- 5) The dorsal wall is very straight below the hairline (almost vertical), and dishes abruptly if the toe is left with any extra length, regardless of the heel height.

- 6) The heels grow upright (almost vertical) and do not grow forward with extra length. At the same time, trimming the heels down will not increase caudal support (e.g.: increased length and width).

What can be expected of each of these type of feet:

- 1) The **Minor** upright foot is not easily distorted, so lameness is not likely.
- 2) The **Moderate** club/upright foot can be managed easily with NB principles, and performance is not normally affected by the condition.
- 3) The **Severe** club foot can be useful in many cases, but can be limited by the condition. Special shoeing and/or surgery are often helpful in the management program.

Traditional Treatment Protocol for Upright Feet

A) Lower the Heels

- 1) To adjust for pastern alignment
- 2) To match the angle of the other foot
- 3) To stretch the tendon

B) Leave the Toe Longer

- 1) To adjust for pastern alignment
- 2) To match the angle of the other foot
- 3) To help stretch the tendon

<i>Positive Aspects of Traditional Corrective Treatment</i>	<i>Negative Aspect of the Traditional Corrective Treatment</i>
<ul style="list-style-type: none"> - Temporary change in the appearance of the foot. 	<ul style="list-style-type: none"> - The horse fails to land heel first - In time, the dorsal wall becomes severely distorted. - The heels become contracted - The frog loses ground contact and contracts - The sole fails to adequately protect the distal border of P3 - Pedal osteitis soon develops from landing toe-first on thin soles

Why so many negatives?

- Tendons do not stretch easily or with any significant length
- Muscles will contract when excessive tension is applied
- The inferior check ligament limits the length of the DDFT distal to the muscle attachment

Why do we try to correct the foot?

- Most people do not realize that it can be normal to have two different feet
- Traditional literature
- Many schools teach matching feet for A/P balance
- The owners and/or trainers demand that the feet look the same

Sole Thickness & Heel Growth in Laminitic Feet

Feet that do not have a predisposition to being clubbed, naturally upright or laminitic do not seem to grow an unusually thick live sole, for example a non-painful, flat thoroughbred foot. It is not until problems arise with pain involvement like pedal osteitis, laminitis or some other condition that creates discomfort to the foot in general or to the DDFT. Pain seems to be one of the key factors in the acceleration of heel growth and thickening of live sole in the caudal part of the foot. At the same time, controlling the pain or eliminating the pain in the foot seems to minimize or stop the production of live looking sole in the caudal part of the foot. Therefore, when the foot releases live sole by exfoliating tissue, the sole material at the heels becomes chalky and flaky. At that time, the heel of the foot is ready to be trimmed.

Trimming of the wall should be conservative and must not reach the depth where you invade the waxy sole behind the widest part of the foot. If the breakover is not placed with either the shoe or the trim so that the pain or tension on the DDFT is controlled, the heel will re-grow in defense of trauma to the distal border of P3 or excessive tension on the DDFT.

Hoof distortion in chronic laminitis has similar characteristics as a club foot:

- Elevated heels control the tension on the DDFT by producing a thicker live sole at the heels.
- Bars become strait and grow voluntarily to often connect at the frog apex to reinforce the sole inside the distal border of P3 to protect the distal border of P3 and to provide for early breakover (forms an inner hoof wall).
- The dorsal wall becomes dished to help reduce tension on the DDFT and laminae tearing, and so that it can be more easily removed to allow for early breakover.

Hoof management for chronic laminitis and club feet.

- 1) Prepare (trim) the heels to the live, functional sole from the frog apex caudally (rearwards).
- 2) Leave ample hoof wall length forward of the frog apex to ensure sole clearance.
- 3) Optimal breakover may need to be caudal to or directly below the tip of P3 initially, to help reduce the rapid heel re-growth.

Complications when heels are trimmed continually and aggressively into the functional sole and the toes are left long.

- 1) Increased tension on the DDFT will cause the heel to re-grow and the wall to flare.
- 2) The heels will contract.
- 3) The horse will not land heel first.
- 4) The horse may develop pedal osteitis.
- 5) Long-term, aggressive trimming may cause laminitis.

Reasonable expectation for **Moderate** club/upright feet if the heels are not over-trimmed and the breakover is place below or just slightly forward of the tip of P3.

- 1) The area of the sole at the heels will exfoliate and allow the heels to be trimmed (lowered) some from one shoeing or trimming to the next.
- 2) The sole over the tip of P3 will thicken and provide ample protection for the distal border of P3.

- 3) The dorsal hoof wall will reorient itself to P3 and assume a more normal (parallel) relationship.
- 4) The flat or low foot will change to an easy to manage, more upright foot if the same trimming and shoeing guidelines are followed. However, the horse must land equally heel first on both feet, regardless of the hoof type. In time, the two feet will look more alike, but will never be the same.