Distal Descent in a new light. Part #1.

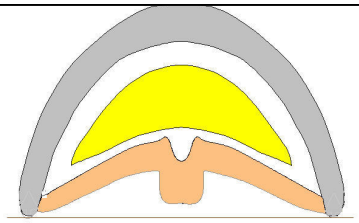
"Distal Descent" is traditionally determined by comparing the height of the coffin bone with the height of the hoof capsule on an x-ray taken from side of the hoof. If the top part of the coffin bone is lower than expected compared to the coronary band that hoof is said to suffer from "distal descent" or "lowering of the coffin bone".
That this condition exists and that it gives this picture on an x-ray is not up for discussion. What is up for discussion is what has caused it, is it possible to rehabilitate and if so how.

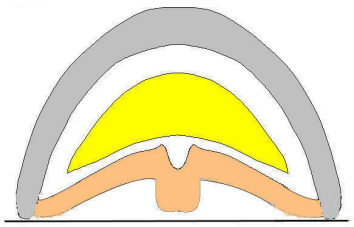
My experience from dissecting about 1000 hooves and working with rehabilitation of sick hooves for four years is that this condition is much more common than recognized and it is absolutely possible to rehabilitate. I have worked with horses that have been almost completely immobilized for eight months by the condition "distal descent" and have been galloping in the paddock after three months of my care.

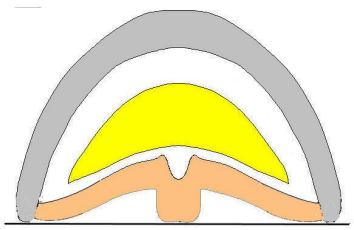
If you instead of comparing the top of the coffin bone with the height of the coronary band would look at the shape of the sole and compare healthy hooves with hooves with distal descent another reason for this condition will become obvious. By cutting a hoof straight across and then applying a natural force at the hoof joint the reason to the condition become very clear.

Since the hoof not only is hanging from the hoof wall in the lamina but also very much, under natural conditions, is standing on the sole the coffin bone will deform the sole as it gets loaded.

Natural sole deformation on a hoof where the frog has good ground

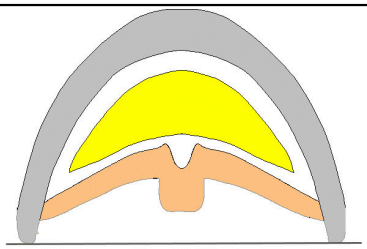


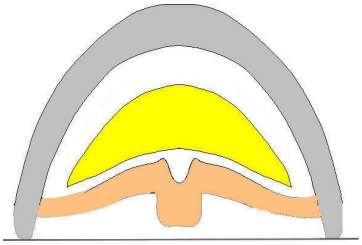


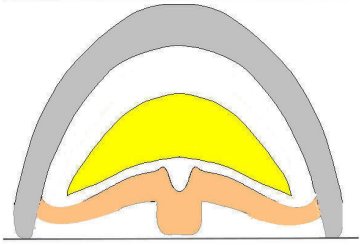


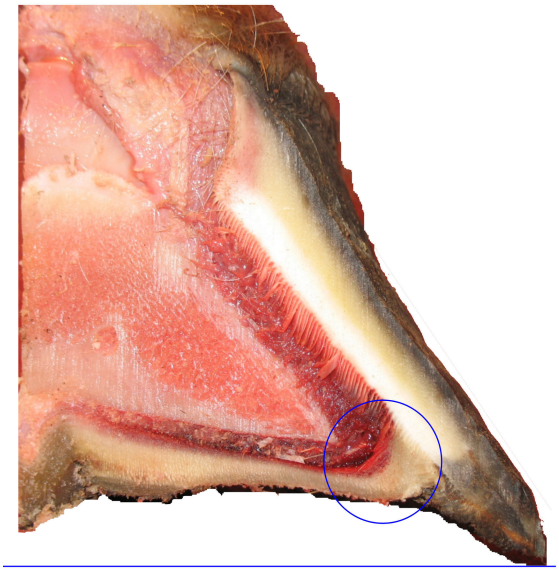
Under natural conditions the coffin bone will press the sole and the frog down to the ground to a weight bearing position. If this however is impossible because of the fact that high hoof walls makes the distance between the ground and the frog to great for the frog to reach the ground a large part of the horse's weight will eventually be standing on a sole that is stretched like a bungee cord between the hoof walls. I show this on video at my clinics too. As a matter of fact, if you overload the coffin bone on a hoof where the frog does not get ground contact the lamina

Un natural sole deformation creating Distal Descent because the frog is lifted to high up from the ground.



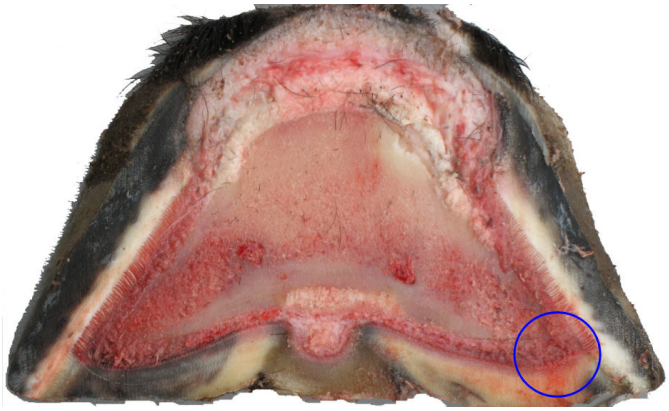






Since there is nothing below the coffin bone that can carry weight the sole on this hoof with Distal Descent has been pressed down by the coffin bone and is now clearly ”hanging” from the hoof wall. The next step is that the deformed lamina

connecting it to the hoof wall will break and the hoof will be stand completely on the sole that still will be hanging at the hoof wall. Just like a trampoline. Too much of this stretching will eventually stretch the sole making it longer and thinner until it lets the frog touch the ground. When this has happened the sole will not be able to recontract and lift the coffin bone back up to its natural position in the hoof capsule but instead leaving it in a lowered position which on an x-ray will show the traditional signs of distal descent.



On a sound hoof the sole and the frog will have ground contact and carry their part of the weight which will save the lamina and the sole from getting deformed.

My conclusion of this is therefore that distal descent very well can be caused by such a simple thing as too high hoof walls that has prevented the frog and the sole to do it’s natural work which is being weight bearing. I would like to stress that this is not primarily a matter of shoed vs. barefoot but instead a matter of hoof wall height even though a shoe will add to the height of the hoof wall.
The conclusion of all this is that if the frog has good ground contact and is carrying its natural part of the horses weight that hoof will not get the condition distal descent and by gradually start loading the frog the condition distal descent is reversible. The horse will however move freely on soft grounds long before the hoof is completely sound (which will take at least one hoof growth cycle). Rehabilitating distal descent must be done barefoot and/or with hoof boots with frog pads since the hoof wall must be released from pressure.

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