



SIDEBONE – WHAT IS THIS??

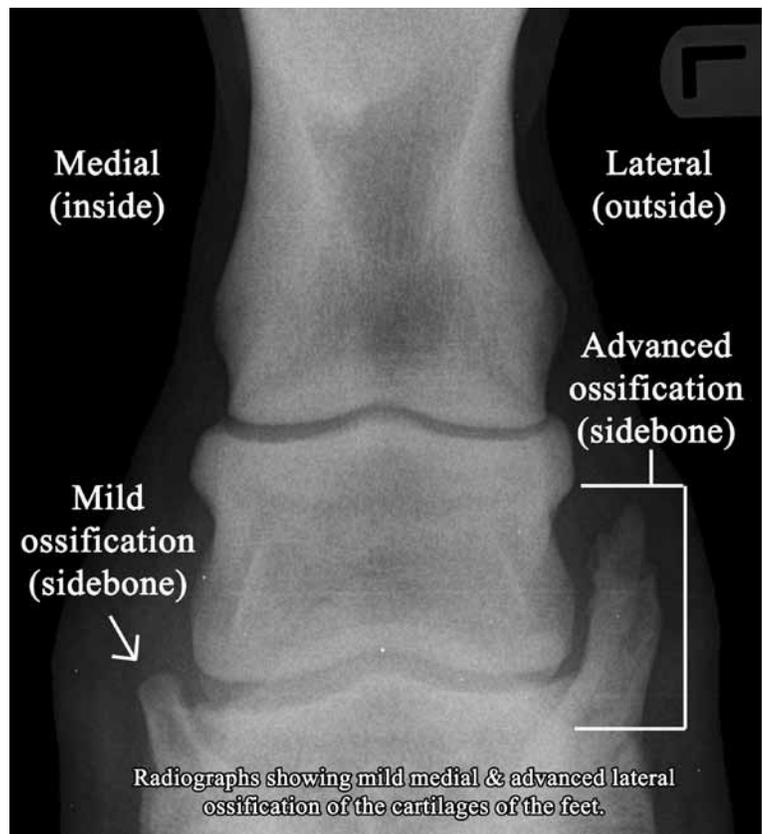
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Sidebone is the laymen’s term for ossification (the process of converting a tissue into bone) of the cartilages of the coffin bone (distal phalanx) in the foot of the horse. These cartilages are located on both the inside and outside (medial and lateral) edges of the coffin bone, curving upward, inward and in a backward direction around the short pastern bone. They can be easily palpated over the highest point in the horse’s heel bulbs across the back of the pastern and should feel firm but flexible. These cartilages are responsible for expansion of the heels during weight bearing and help to absorb concussion as the foot hits the ground. They also function in support of the heel itself and to assist blood flow in the foot. The cartilages are connected with the long and short pastern bones, the coffin bone and the navicular bone by small ligaments. These ligaments can be affected by ossification and subsequent fracture of the ossified cartilages, leading to thickening of the affected ligament, pain and lameness.

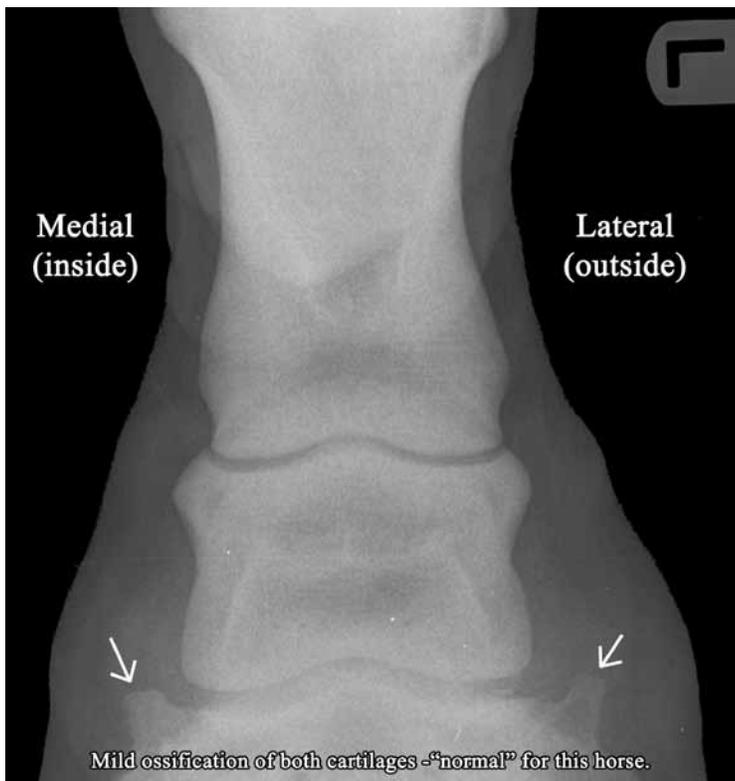
Ossification of these cartilages is hypothesized to occur in any one of a number of ways (direct trauma to the foot, poor hoof conformation, upper limb problems, imbalanced feet, improper trimming and shoeing, for example). It is important to stress that the proposed causes for sidebone are just hypothesis, there is little clinical evidence to support these observations. The question of heritability of the condition has not yet been fully determined. We know that sidebone often affects specific breeds (Finn horses, for example) with a higher prevalence, often with both front feet affected equally, suggesting a strong heritable component to this condition. Mild ossification of these cartilages is widespread, with draft breeds and heavier built breeds predisposed to developing more significant sidebone. Often times, the outside (lateral side) of the foot shows a greater degree of ossification than does the inside (medial side). If mild ossification has occurred to the same degree on both sides of the foot this can be considered normal and may not indicate any imbalance or trauma to the foot.

For many years, it has been felt that sidebone is often an “incidental finding” on radiographs and does not play a part in a horse’s foot pain and lameness. For some horses, this may

very well be true. What we can seem to agree on, though, is that the development of sidebone may be a signal that there is an imbalance somewhere in the affected limb. This imbalance may be a problem for the horse now or may be evidence of a problem the horse had in the past, which has now been corrected. For a horse that is sound, this finding on a radiograph may carry little significance and, indeed, there is little clinical evidence to support the idea that sidebone is a major player in hoof related



lameness. But what if the horse is lame? Moderate to extensive ossification of the cartilages may indeed be an observable and clinical problem for that horse, especially if all other causes have been ruled out.



A recent study published in the 2010 AAEP proceedings (Dyson and Murray) took an in depth look at sidebone and foot pain through a series of lameness exams, radiographs, MRI and nuclear scintigraphy. Their conclusion was that “moderate or extensive ossification of one or both cartilages may be of clinical significance, being associated with primary injury of the ossified cartilage, injury of the ipsilateral aspect of the distal phalanx, or injury of ligaments attached to the cartilages of the foot or the CLs of the DIP joint.” “DIP” refers to the distal interphalangeal joint or coffin joint, “CLs” refers to collateral ligaments, and “ipsilateral” means the same side. In easier terms, what the authors are saying is that moderate to severe sidebone of one or both cartilages of the foot may be relevant to the horse, especially if it is associated with an actual injury to

the sidebone itself, injury to the coffin bone on the same side as the sidebone or injury to any of the ligaments attached to the cartilages or to the coffin bone.

So, what is the take home message? A horse that is lame needs to be seen by a veterinarian to diagnose the cause of the lameness. A proper lameness examination, which should include nerve blocks and even the blocking of a joint, to localize the lameness and a set of radiographs is a good place to start. It may be that sidebone is evident on your horse’s radiographs. The trick will be to determine what, if any, part the sidebone may be playing in the lameness if it has been localized to the foot. Further diagnostic tests may be needed, MRI or nuclear scintigraphy for example, to pinpoint the cause such that a therapeutic plan can be put into place to potentially return your horse to the level of performance you expect. If sidebone is determined to be a factor in the lameness, stall rest with controlled walking and anti inflammatories as needed will often times improve the situation. Follow up is important, in the form of veterinary exams and repeat radiographs, to assess the healing process and to determine what other factors may be involved if the progress is not what is expected. Assistance from your farrier, in the form of a well-balanced trim and appropriate shoeing, if needed, will assist in the healing process. Prognosis for an uncomplicated case of sidebone is good.

My thanks to Dr. Sue Dyson for making sure that all my “i’s were dotted and my t’s crossed”.

References:

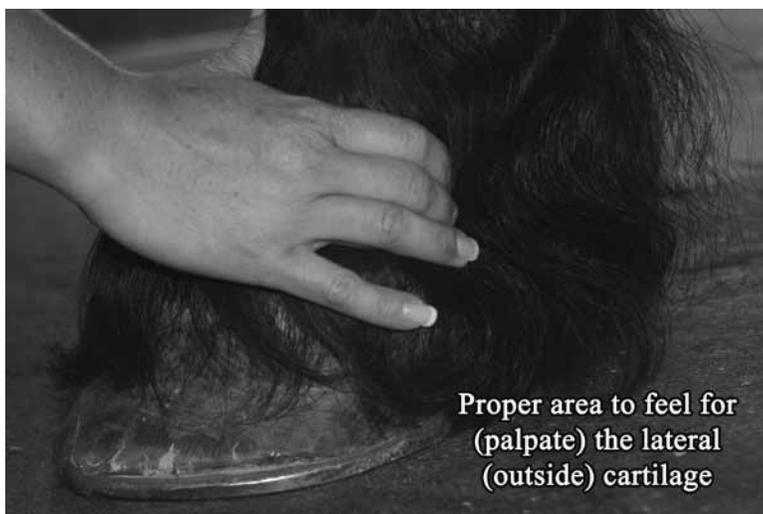
Dankin S., Robson K., Dyson S. Fractures of ossified cartilages of the foot: 10 cases. *Equine Veterinary Education* AE/June 2006: 168-176.

Down S., Dyson S., Murray R., Ossification of the cartilages of the foot. *Equine Veterinary Education* AE/February 2007; 51-56.

Dyson, S., Ossification of the Cartilages of the Foot (Sidebone). In: *Current Therapy in Equine Medicine* 6, 6th edn., Saunders, St. Louis. pp. 586-592.

Dyson, S., Brown, V., Collins, S., Murray, R. Is there an association between ossification of the cartilages of the foot and collateral desmopathy of the distal interphalangeal joint or distal phalanx injury? *Equine Vet. J.* 42: 504-511, 2010

Dyson S., Murray R. Injuries associated with ossification of the cartilages of the foot. *56th Annual American Association of Equine Practitioners Convention* 2010;152-165.





Sidebone, continued...

Dyson, S., Nagy, A. Injuries associated with the cartilages of the foot. *Equine Vet. Educ.* 2011 doi: 10.1111/j/2042-3292.2011.00260.x 23:581-593, 2011

Mair T., Sherlock C., Collateral desmitis of the distal Interphalangeal Joint in conjunction with concurrent ossification of the cartilages of the foot in nine horses. *Equine Veterinary Education/AE/Sept.* 2008; 485-492.

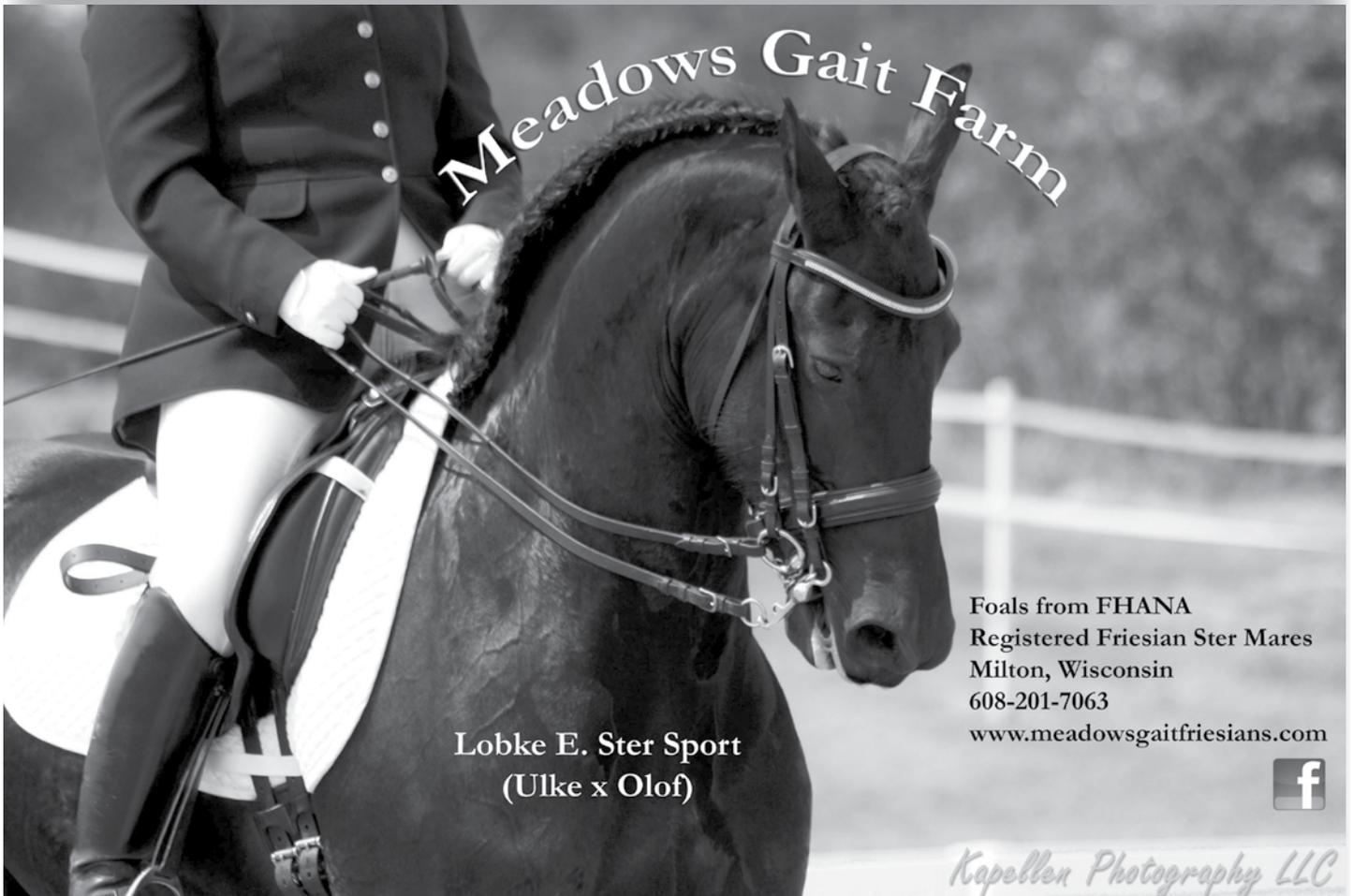


KFPS Executive Director, Ids Hellinga

The pattern that we see with horses that suffer from sidebone is that the paces are significantly shortened, especially on hard pavement. Lameness is not what we tend to see.

We estimate that the prevalence of sidebone within the Friesian breed is 12%. Our study showed a high heritability: the differences among groups of offspring is remarkably high, varying from 5% to 40% however, based on limited numbers of offspring.

Our policy in terms of selection is that stallions who have sidebone have little chance to be approved. Only in cases of extreme quality may such a stallion be selected. During the last 5 years, no stallion with sidebone has been approved.



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