

SIDE BONE



The term "side bone" describes collateral cartilages that hardened into bone. Side bone is a common condition in horses, depicted by the ossification (that is the process of laying down new bone material), of the collateral cartilages of the coffin bone (also known as the distal phalanx, third phalanx, P3, or pedal bone). The collateral cartilages are found on the medial (inside) and lateral (outside) sides of the hoof and can be palpated just above the level of the coronary band, as flexible projections on each side of the lower pastern.

The collateral cartilages are an important part of the anti-concussion mechanism which acts as a shock absorbers for the foot. This anti-concussion mechanism incorporate the frog, the navicular bone, the flexibility of the hoof wall and the collateral cartilages. Because cartilages are normally elastic, allowing the foot to deform during weight bearing, and then return to its usual shape. Once ossified the cartilages transform into much harder and less flexible structures. Side bone can develop in the front and / or hind feet, but the front feet are most commonly affected.

Causes of Side Bone

Repeated concussion of the foot on hard surfaces is the primary cause in many cases. Such concussion occurs when horses are constantly worked on hard uneven terrain.

It could also be the 'not so ideal' or poor conformation hereditary factors. Poor conformation include:- horses with narrow upright feet, horses with unbalanced feet, especially if they have toe-in or toe-out conformation. Abnormal limb conformation which may cause uneven forces on the collateral cartilage.

Draft or heavy build horses are more likely to develop side bone condition than light breeds or ponies.

Irregular shoeing may cause the foot to land unevenly consequently excessive wear on one side of the shoe, resulting in concussion on one part of the foot.

Furthermore direct trauma to the collateral cartilages may also lead to side bone formation.

Symptoms Associated with Side Bone

Side bone may be associated with lameness but many horses with side bone are not lame. The stride may be shortened, and walking the horse across a slope may amplify the soreness. Lameness may be a sign, depending on the stage of ossification, the amount of concussion sustained by the feet, and the standard of terrain. Lameness is most likely when side bone is associated with a narrow or contracted foot.

Diagnosis (identification) of Side bone

Careful examination of the collateral cartilages by palpation can give an indication that cartilages are hard and boney rather than firm and supple. Usually, however, side bone is found when the foot is radiographed. X-ray examinations will reveal bone formation in the cartilages. In most cases side bone has few outward signs but examination of the cartilages will reveal that hardening is present. Firm pressure on the cartilages will cause the horse to flinch. In some cases there will be a visible bulging of the quarters at the coronary band.

Treatment of Side bone

Side bone usually does not cause any problems, but where it does it is difficult to treat. Many horses remain active with side bone condition and are not hindered in any way. If the ossification is severe and associated with lameness then box rest and non-steroidal anti-inflammatory drugs such as Bute may be useful to relieve pain. It is important to be careful with exercise. If the horse is in pain and goes lame give him as much time off as necessary. In some cases the only useful treatment is a

neurectomy that is the surgical removal of a nerve or part of a nerve of the palmar digital nerves.

Within this condition the contested heel expansion theory is much debated. But from experience the gradually heel expansion seems to be essential in the treatment. The affected foot should be re-shod regularly to gradually encourage heel expansion.

Skilled trimming of the hoof with remedial shoes will assist the horse with this condition. The horse should be shod with a wide-web shoe with rolled toe. Avoid to drive-in nails behind the mid-quarters of the shoes. Remedial shoes such as a rolled toe side bone shoe will decrease the break over forces in the coffin joint region. A side bone shoe is made from flat bar and is plain stamped. Ground surface bevelled and rolled to ease break over and pressure on side bone.



The toe is bent and the outside branch formed. The outside branch is then chamfered on the ground surface towards the outside, retaining the thickness of the inner edge. The chamfering, which has the effect of broadening the web, should be greatest at the heel and gradually reduced towards the toe.

Rolled-toe or rockered-toe shoe, square off the toe, or even consider the squared-off-behind-the-toe design of a natural balance shoe. Anything which moves the break over back is good. Shock absorbing pads are beneficial too. Continuous assessment of the shoe wear must be carried

out to ensure that the horse is becoming sound after having side bone. Levelling out any medial and lateral imbalances to ensure that the foot lands level, lessening concussion on either side of the foot.