

## **INFERIOR CHECK LIGAMENT DESMOTOMY PRE-OPERATIVE CONSIDERATIONS**

### **WHO, WHY & WHEN? –**

Inferior check ligament desmotomy is frequently performed on foals (ages 2-8 months) for flexural deformity involving the distal interphalangeal joint. There are very few reports in the literature of this procedure being performed on adult horses, but some reports indicate that poor results are achieved in adults. Flexural deformity, when seen in the young racing thoroughbred, can lead to chronic intermittent lameness resulting in poor performance. This deformity may be the result of the animal not being treated successfully as a foal and the condition worsening due to the rigors of training. Flexural deformity may also be acquired secondary to chronic excessive trimming of a steeply angled hoof in an attempt to balance the feet. If the flexural deformity is severe, it can lead to unilateral laminitis secondary to constant trauma to the lamina of the toe area, resulting in marked rotation of the third phalanx. Unilateral laminitis could also be present secondary to other etiologies. In all cases, the affected foot shows an increased hoof angle (> 60 degrees), a broken forward hoof -pastern axis, a prominent coronary band and a long heel with a relatively short toe, i.e. a club foot. Pain is thought to result from the increased angulation of the third phalanx and the thin flattened sole which leads to chronic foot bruising.

All horses included in this study had a history of low grade lameness and poor performance, especially when training was intensified. When presented, all horses showed a shortness of stride on the affected limb when trotted in a straight line and a grade II (I-V) lameness when trotted in a tight circle with the affected limb on the inside. The affected foot showed a steep angle, the hoof pastern axis was broken forward, there

was a bending of the horn tubules in the anterior hoof wall ("dish") and the sole was flat. The consistency of the hoof wall in the region of the toe was poor. Hoof testers revealed discomfort when applied to the solar area of the toe. Intra-articular anesthesia of the distal interphalangeal (DIP) joint did not improve the lameness. Posterior digital nerve block improved but did not eliminate the lameness. Abaxial nerve block eliminated the lameness in all cases, thereby localizing the discomfort to the dorsal portion of the foot. In cases of flexural deformity of the DIP joint, there is a functional shortening of the deep digital flexor musculo-tendonous unit. This shortening is responsible for the abnormal changes that occur within the foot. The increased tension of the flexor tendon causes the DIP joint to be constantly flexed, which causes a change in angulation of the third phalanx and increased weight bearing on the apex of the bone instead of the entire solar surface. This abnormal weight bearing leads to chronic foot bruising and lameness. All flexural deformities appear to have some radiographic signs of rotation but this may be due in part to the distortion of the hoof capsule, the bending of the horn tubules of the anterior hoof wall and the flat thin sole resulting from the increased pressure on the apex of the third phalanx. Various forms of corrective trimming and shoeing have been used to correct this deformity but in the authors' experience they have not been as successful in the older animal. The check ligament surgery coupled with therapeutic trimming appears to be the treatment of choice in the older animal. Inferior check ligament desmotomy creates a lengthening of the deep flexor tendon allowing the hoof angle to be lowered. This brings the hoof-pastern axis into normal alignment and allows the necessary changes to be made within the hoof capsule.