

The Club Foot

Wayne B. Schmotzer, DVM
Diplomate American College of Veterinary Surgeons
Bend Equine Medical Center

I must admit that I have a bit of a foot fetish. Perhaps that's because an estimated 90% of all equine lameness occurs in the foot. Most horse people have heard the saying, "no foot, no horse." There's a great deal of truth in that saying and a great many horsemen have experienced that truth first hand. Today, we'll visit the club foot--a hoof conformational abnormality encountered frequently by our podiatry division.

A club foot has fundamental conformational characteristics that can vary in degree from mild (grade 1) to severe (grade 4). There is long heel growth, a prominent or "buttress" appearance to the dorsal cornet band, and a steep downward slope to the dorsal hoof wall that frequently shows a "dished" appearance when viewed from the side (Figure 1). Most club feet develop their abnormal conformation between 1 and 6 months of age and are the result of an acquired flexural deformity. Flexural deformities develop most frequently secondary to pain. Limb pain reduces weight bearing causing a functional shortening of a musculotendinous unit and flexion at a joint – in the case of club feet, shortening of the deep digital flexor tendon causes flexion at the distal interphalangeal joint (coffin joint) (Figure 2). Pain can arise from a number of sources including physitis, osteochondrosis (OCD), infected joints, soft tissue wounds, hoof infections and other injuries. Physitis and OCD of the shoulder joint have been associated commonly with flexural deformities. Other causes have been and incriminated including overfeeding and imbalanced rations. Stance has also been postulated as a cause of flexural deformity and club foot conformation. It has been frequently observed that young horses place one foot forward and one foot back while eating from the ground. The club foot is consistently the foot that is placed forward, presumably to avoid stretching the shortened tendon.



Figure 1.



Figure 2.

Many of the sources of pain are transient and resolve with time, however, varying degrees of club foot deformity can remain after the pain is gone. Mild deformities are tolerated quite well without treatment, however, more severe deformities can adversely

affect joint health, promote seedy toe, hoof abscesses, hoof wall separation at the white line, and be a cause of repetitive lameness, particularly after hoof trimming. On average, the club foot requires trimming sooner than the other, more normal feet. The most severe degree of flexural deformity and associated club foot makes weight bearing impossible.

Treatment to correct the club foot conformation and associated flexural deformity is very successful when attempted early. It is important to note that successful treatment of a club foot requires that the causative source of pain be resolved. Milder deformities in the young foal can respond well to corrective trimming and shoeing. Lowering the heels and applying toe extensions or toe plates to the hoof help stretch the deep digital flexor tendon which in turn reduces the pull on the distal phalanx (coffin bone). When early trimming and corrective shoeing fail, surgery is recommended. A short ligament that attaches to the deep digital flexor tendon, called the distal check ligament, helps reduce the stretching of the deep digital flexor tendon. By cutting this expendable ligament and removing a piece, the deep digital flexor is able to stretch and lengthen. Corrective trimming and shoeing is generally continued for three to four resets post surgery. The earlier the treatment begins, the better the result. Surgery is best performed before one year of age and is very successful.