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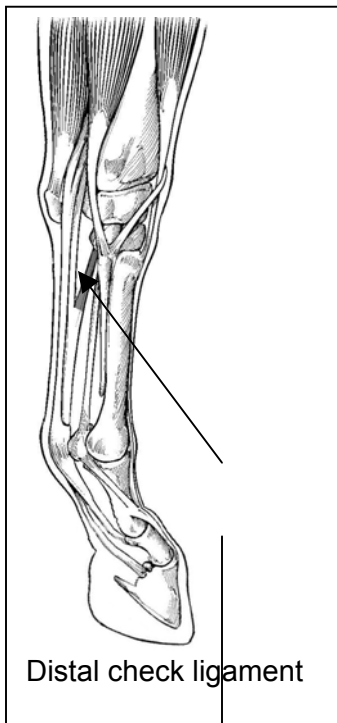
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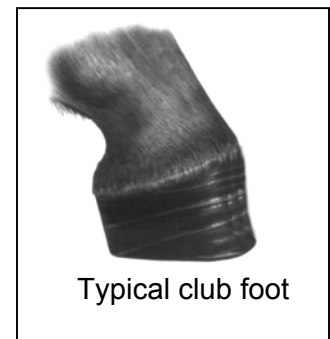
**Flexural deformity of the distal interphalangeal joint or “clubfoot” and the distal check desmotomy
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April 2003



Flexural deformity of the distal interphalangeal joint, commonly known as clubfoot, results from the abnormal contraction of the deep digital flexor tendon, which inserts on the distal phalanx (the coffin bone). Clubfoot can occur in one (unilateral) or both (bilateral) front legs. It can be congenital due to genetics or uterine malpositioning, or acquired due to pain. Improper nutrition has also been cited as a cause of flexural deformities, though the relationship is not consistent.

Clubfoot can be seen in newborn foals but it most commonly occurs in foals between 4 weeks and 4 months of age. It may also occur in fast growing weanlings and yearlings and in adult horses secondary to severe lameness.



The abnormal anatomy is identified by examining the angle of the dorsal (front) hoof. In affected animals, the hoof wall angle is more upright than the angle of the pastern. Also, the length (height) of the hoof wall at the heel increases relative to the toe resulting in the “club foot” appearance. Chronic cases can

develop dishing of the dorsal hoof wall and the sole may begin to separate from the white line at the toe wall.

Flexural deformity of the distal interphalangeal joint is separated into two stages for the purposes of prognosis and therapy: Stage 1 - when the angle between the dorsal hoof wall and the sole is less than 90 degrees and stage 2 - when this angle exceeds 90 degrees. Stage 2 deformities usually require additional surgery not covered here. Cases of mild flexural deformity that are diagnosed and treated early often respond well to nonsurgical therapy such as a balanced diet, controlled exercise, physical therapy, corrective trimming and possible shoeing or toe extensions, and use of low doses of anti-inflammatories.

Cases that do not respond to conservative therapy, or cases with more severe flexural deformity, require a surgical procedure called a distal check desmotomy, in which the distal check ligament is severed. Transection of the distal check ligament allows the muscle-tendon unit to lengthen, which allows the coffin joint to extend.

The approach at Peterson and Smith is from the medial (inside) aspect of the lower leg below the carpus (knee). The distal check ligament is located, and can be palpated, immediately plantar to (in front of) the deep digital flexor tendon. An incision is made in the skin over the area of the distal check ligament, avoiding the medial neurovascular bundle (a group of nerves and vessels on the inside). The space between the deep digital flexor tendon and the distal check ligament is found by dissection and the distal check is elevated and severed (transected). The incision is then sutured in three layers and bandaged. Recovery from surgery requires at least a month.

The prognosis for horses requiring distal check desmotomy is determined by the severity of the flexural deformity and the age of the animal at the time of surgery. Every effort should be made to correct the flexural deformity as early as possible.

