

*From the Equine newsletter, August 1998*

## FLEXURAL AND ANGULAR LIMB DEFORMITIES IN FOALS

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*Whether a backyard broodmare owner or involved in a large breeding farm operation, chances are you have seen a foal with legs that are crooked or flexed. To inform foal owners about when to be concerned and what treatment options are available, the following article will discuss a few of the common musculoskeletal conditions.*

Various developmental abnormalities can occur in foals. These may be congenital (present at birth), or evolve during growth. Some are genetic, and some are affected by environment. Flexural limb deformities (contracted limbs) can occur, causing abnormal flexion of the joint(s) or an inability to straighten the limb. If this occurs while the foal is in the mare's womb, it may be severe enough to euthanize the foal. Many are mild, or are acquired after birth, but may progressively worsen. This commonly results in abnormal carpal (knee) or fetlock (ankle) flexion during the first several weeks to months after birth. Treatment includes nutritional changes (slowing growth), restricted exercise, and with more significant cases, bandages, splints, certain medications, and possibly even surgery in severe cases.

Rupture of the common digital extensor tendon is a second type of flexural deformity that occurs soon after birth. The foal will have an obvious swelling over the carpus, and often the ends of the ruptured tendon can be palpated in the area. Sometimes the bone development can be premature in foals with this problem as well. Treatment usually involves wraps, splinting, stall rest and possibly radiographs (x-rays.)

A third type of deformity is the clubfoot (or coronopedal deformity) where the foot acquires an enlarged coronary band, a tall heel and/or the inability of the heels to touch the ground. The hoof eventually appears dished or concave on the front. The foot is also narrow and upright. It commonly occurs between two and six months of age. Reasons for this appearance may include: genetics, diet, exercise, or lameness elsewhere in the same limb (i.e. sore foot or joint). If the foal is very young, it may spontaneously correct itself or need splinting and/or toe extensions. In the older foal, treatment may involve restricted exercise, lowering the heels, reducing dietary intake, and toe extensions if the toe is excessively worn. If there is no improvement after four weeks of treatment, surgery (distal check ligament desmotomy) may be necessary.

Angular limb deformities are a deviation from the normal straight limb conformation when viewed from the front. 'Valgus' deformities mean the limb below the angulation point goes outward (laterally), whereas 'varus' deformities angle inward (medially). Mild to moderate carpal valgus is common at birth in many foals, with most of those spontaneously correcting within the first few weeks to months. Causes may include immature weak foals, or premature/dysmature (growth retarded) foals due to problems with the mare, unusual positioning of the foal in the uterus, or nutritional imbalances.

In older foals there can be a discrepancy in growth at the physis (growth plate) between the medial and lateral sides of the leg. Causes may include physical trauma, growth plate inflammation, genetics, diet, mineral imbalances and environment. This angular limb problem is not restricted only to the knee. It may occur anywhere on the lower front or hind limb.

Treatment is dependent upon severity and age. Premature foals may have deformation, fracture or crushing of the bones in the knee or hock. If this occurs, exercise is limited to stall rest, and a splint or cast may be needed. Physical therapy may be helpful. If this condition is not treated early, permanent damage may greatly limit future athletic potential. If the problem is centered on the growth plate and is due to a discrepancy of growth on two sides of the bone, trimming the foot every two to three weeks may be helpful and the problem may correct spontaneously. Surgery may be indicated if the condition is moderate to severe in the first few weeks of life, or if the problem worsens over several months. There is a time limit that involves the age of the foal and when the growth plates close that will indicate how much response may be seen after surgery, i.e. the surgery has a much lower success rate after the growth plates are closed. Also different bones have different rates of growth plate closure. This is, by no means, a complete discussion of angular or flexural problems in foals. If you are concerned about your foal, it is always best to have it examined by your veterinarian.