

## **Angular Limb Deformity**

Angular limb deformity refers to deviation of the limb from the normal axis. The limbs can either turn outward (valgus deformity) or turn inward (varus deformity). This condition can affect the knees, hocks, and fetlocks. However, the knees are most commonly affected. There is no gender predisposition but it does seem to be more common in Thoroughbreds. This condition may be present at birth or it may develop later during the first year of life.

Most foals are born with a slight degree of angular limb deformity and it tends to straighten out as the foal matures and fills out in the chest. The foals that are more severely affected are foals that are premature, have metabolic imbalances, or were malpositioned during gestation. The angular limb deformity can be a result of three main causes. The first cause is due to periarticular laxity. This essentially means that the soft tissues surrounding the affected joint are too weak and allow the limb to deviate. The second cause is due to muscle weakness which also allows the limb to deviate. The third cause is incomplete ossification of the cuboidal bones. These are the small bones present in the knees and hocks. If these bones are incompletely ossified they are soft and flexible, allowing for deviation of the limbs.

There are several factors that cause foals to develop angular limb deformity during the first year of life. Imbalanced nutrition can cause limb deviation. This is commonly due to excessive grain intake which causes a disproportionate growth at the growth plate. Trauma due to excessive exercise can lead to microfractures and crushing of the growth plate. Another cause of developmental angular limb deformity is a non-weight-bearing lameness that develops deviation in the opposite limb.

Physical examination and radiographs of the affected joints can diagnose angular limb deformity. Treatments vary depending on the cause of the limb

deviations, the age of the foal, and the owner's willingness to treat aggressively or conservatively.

Stall rest is appropriate for foals with incomplete ossification of the cuboidal bones with straight limbs. Repeat radiographs need to be performed every two weeks to assess ossification of the bones. Foals with periarticular laxity of the affected joints also benefit from stall rest with hand-walking for 10-15 minutes daily for 4-6 weeks. Foals with incomplete ossification of the cuboidal bones and deviation of the limbs are best treated with splints or casts. All of these above mentioned treatments can be combined with corrective hoof trimming and/or glue-on shoes, if recommended by your veterinarian.

Surgical correction of angular limb deformities includes periosteal striping and transphyseal bridging. These are typically done in foals that are 2-6 months old, depending on the surgical procedure desired and the joints affected.

There are several causes of angular limb deformity in foals, and hence, several different treatment options. It is best to have your veterinarian examine your foal to determine the most effective treatment for correction of the angular limb deformity.

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