Proceedings of the 17th Congress of the Italian Association of Equine Veterinarians

Feb. 4-6, 2011 - Montesilvano, Italy

Next SIVE Meeting:
Feb. 3-5, 2012 – Bologna, Italy

Reprinted in the IVIS website with the permission of the Italian Association of Equine Veterinarians – SIVE

http://www.ivis.org
TAKE HOME MESSAGE

Management of conformational disorders in foal can be challenging and rewarding. In my experience a combination of early recognition and intervention coupled with a patient attitude to allow the foal to improve is best in the management of angular and flexural deformities.

INTRODUCTION

Orthopedic problems in foals can be both congenital and acquired. Congenital problems are present at birth and usually obvious. Congenital angular and flexural deformities can lead to dystocia and in some cases necessitate fetotomy or Caesarean section to relieve the dystocia. Many foals are born with some degree of flexural or angular limb problem. The most common appearance is a degree of flexor laxity and carpal and/or tarsal valgus deformity. Fortunately, these deformities usually self correct with exercise and age and should be considered normal findings in a newborn foal.

Likewise congenital flexural deformity of both the metacarpal/tarsal phalangeal joint, distal interphalangeal joint and carpus may be present. Mild forms of these conditions will self correct with age and exercise but in my experience moderate to severe congenital flexural deformity usually requires some type of intervention.

Orthopedic evaluation of a foal can be difficult and foals will often look different inside and outside of a stall. For example a foal with even a mild lameness may be non-weight bearing when turned in a stall but look much less lame when walked with the mare. Also it is difficult to accurately assess flexural and angular deformities with a foal standing in a stall.

For this reason I usually perform palpation of the limbs with the foal restrained in a stall and evaluate conformation and gait with the foal outside of the stall.

FLEXOR LAXITY

Many foals are born with flexor laxity. Usually is it most obvious in the hindlimbs with the fetlock dropping close to the ground and occasionally the toe will lift off the ground when the foal is weight bearing. In general, this laxity self corrects over a few days as muscle tone improves with exercise. In some circumstances, the laxity is severe enough to prevent the foal from getting up to nurse or is such that the palmar/plantar aspect of the fetlock develops abrasions. In these cases, lowering the heels with a rasp or the use of glue-on shoes with extended heels or the use of acrylic, such as Equilox®, is helpful in providing heel support. Exercise should be encouraged but limited to prevent fatigue.

The use of bandages (except to protect the soft tissues) and splints are generally contraindicated since they encourage further laxity. The use of casts is discouraged. Most foals improve significantly once normal loading of the flexor tendons occurs.
FLEXURAL DEFORMITY
(CONTRACTED TENDONS)

Flexural deformity can be congenital or acquired. The congenital form may involve the carpus, fetlock and/or coffin joints. Acquired flexural deformity occurs of the coffin joint typically occurs in 4 - 8 month old horses. Flexural deformity of the fetlock joint occurs in 8 - 14 month old horses. Acquired flexural deformity of the carpus is usually unless associated with a severe lameness in that limb. In neonates with congenital flexural deformity exercise, splints, casts and oxytetracycline have been used to treat to achieve tendon laxity. In mild cases of flexural laxity corrective hoof trimming and exercise are often curative. The uses of polyvinyl chloride (PVC) splints placed over a padded bandage are used to place the limb in a weight bearing position. It is important to reset the splints daily and to use well-padded bandages to prevent rub sores, which easily occur in foals. I often will place the splints in the morning and remove them at night and repeat this procedure daily. Casting will cause flexor tendon laxity. Cast should be left on no longer than 10 days and early removal may be necessary if a cast rub is suspected. The use of the antimicrobial, oxytetracycline, to induce tendon relaxation has gained acceptance. It is thought that the oxytetracycline binds calcium and causes muscle relaxation and effective tendon lengthening. Three grams of oxytetracycline is given intravenously. Since this is such a large dose the author usually dilutes the drug in 1 liter of saline and gives in over and 15 minute period. In the United States oxytetracycline is not approved for use in the horse so it is important to inform the client of this and of the potential side effects, which include diarrhea, renal failure and acute death. I have not witnessed these side effects in my use of this drug. In foals less than 2 weeks of age the effects are often dramatic and occasionally flexor laxity may occur. If the desired effect is not seen than a second or third dose in given on successive days. Splinting is often used in concert with oxytetracycline treatment. Oxytetracycline has proven to be an effective medical treatment in the management of flexural deformities in foals less than 2 weeks of age. In older foals (greater than 30 days), oxytetracycline treatment is often not effective probably due to the increased muscular development in these foals. Acquired flexural deformity of the coffin joint is usually seen in foals between 4 and 8 months and is associated with large fast, growing foals on a high plane of nutrition. Nonsurgical methods of correction include extended toe shoes, phenylbutazone and exercise and are chosen for mild cases. For cases, which are moderate to severe in nature or unresponsive to medical treatment, inferior check ligament desmotomy and extended toe shoes are recommended. Correction after inferior check ligament desmotomy is usually dramatic and immediate. Corrective shoes usually are necessary for 4 - 8 weeks postoperatively.

Acquired flexural deformity of the fetlock joint is usually seen between 8 to 14 months of age and is also associated with large fast, growing foals on a high plane of nutrition. In general nonsurgical methods are only helpful in the mild cases and consist of raising the heel with a wedge pad, phenylbutazone and exercise. For cases, which are moderate to severe in nature or unresponsive to medical treatment, superior check ligament desmotomy and elevation of the heels with wedge pads is recommended. Horses, which are beyond vertical, cannot load their tendons adequately for conservative management to work and surgical treatment is recommended. In severe cases a distal check ligament desmotomy and splinting are often combined with the proximal check ligament desmotomy to achieve maximize tendon/muscle unit lengthening.

ANGULAR DEFORMITIES

Most foals are born with some degree of tarsal and carpal valgus deformity. This is generally considered normal. As the foal matures many angular deformities completely improve. Moderate to severe (>10 degrees) valgus deformities that are still present at 6 weeks are
Considered abnormal and require evaluation. Causes of valgus deformity include ligamentous joint laxity, physeal dysplasia and cuboidal bone abnormalities. Ligamentous joint laxity can be assessed by manipulation of the foal's limb. Radiographs are required to diagnose physeal dysplasia or cuboidal bone problems. Dorsopalmar radiographs reveal the location of the angular deformity by the center of the angle formed by lines drawn down the center of the metacarpus and radius. If the lines meet in the physis or epiphysis than the abnormality originates from the physis. If the lines meet in the carpus then the source are the cuboidal bones. Fortunately, most of the boney causes for angular limb deformities are in the physis, which is correctable surgically. Periosteal elevation and transection has been accepted as an effective means of correcting angular limb deformities in growing horses. The surgery is performed on the “short” side of the bone (in the case of a valgus deformity on the lateral side) and the transection performed 2 cm proximal to the physis. Growth acceleration occurs on the operated side and overcorrection is not possible. Surgical correction for fetlock deformities should be performed before 8 weeks of age and for carpal deformities by 4 months of age. The earlier the surgery is performed the more rapid the correction, however case selection is important since some foals will self correct. In cases of severe angular deformity or in older foals and yearlings physeal retardation with screws and wires or transphyseal screws are necessary to slow the growth on the “long” side of the bone. In our practice physeal retardation of the fetlock is exclusively accomplished with transphyseal screws and that of the carpus with screws and wires up thorough approximately 14 months of age. After 14 months it seems to be safe to use transphyseal screws with limited risks of overcorrection of the carpus in yearlings after removal.