Equine Positional Release and Limb Deformities in Foals

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Each foaling season, breeders are faced with the possibility of having newborns or young foals with leg and hoof deformities. The most common problems involve the flexor tendon-muscle unit affecting the coffin, fetlock and knee joints.

Flexural deformities involve the flexor muscle and tendons, flexural contracture (shortening of the flexor muscle-tendon unit) or flexor tendon laxity (tendon is too loose). Angular limb deformities appear as a misalignment or crookedness of the leg, involving the fetlock (metacarpophalangeal), knee (carnal) and hock (tarsal) joints. This article will deal with exercises appropriate for flexural contracture.

The wobbly foal

If you have identified the foal is having a problem standing, check the appearance of the legs and manually check the range of movement of the joints of the lower leg. Determine if you can move the hoof, the fetlock and the knee. Can you flex and extend these joints? The extent of movement of each joint will be useful information to relay to your veterinarian or equine practitioner.

If the foal cannot stand well enough to nurse, it may be necessary to support the foal to stand every couple of hours for several days to ensure the foal can nurse to receive colostrum and facilitate the mare-foal bonding.

Causes of congenital limb flexion are not fully understood. Malposition in utero is a common explanation as is nutritional deficiency/imbalances, genetic factors and possible plant toxicity. The relationship between lack of movement of the mare and malposition of the foetus is one worthy of more research.

Tendons

The superficial digital flexor tendon (SDFT) and the deep digital flexor tendon (DDFT) are both involved in these contracture problems. These tendons run along the back of the lower leg, beginning at the flexor muscles above the knee. The SDFT attaches to the long and short pattern bones, and the DDFT attaches to the base of the coffin bone.

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Flexural contracture (‘contracted’ tendons)

Contracture disorders in the newborn foal are known as congenital (present at birth) and early management is very important. Grades of contracture vary from mild to severe. Foals may be able to stand with flexed or bent legs, standing on the hoof tips or knuckled over and standing on the fetlocks. Some foals cannot stand and require support to nurse and strengthen the weight-bearing apparatus.

Facilitated movement

Equine Positional Release is an osteopathic-based manual therapy. Localised, gentle movement of the affected limb enables the flexor muscle and tendon unit to be passively lengthened and shortened in varying degrees, normalising the resting length of the muscle tendon unit.

Equine Positional Release hoof exercises

Beginning with the hoof, stabilise the fetlock and gently flex the hoof. Hold the position for 10-30 seconds. Next, try to slightly extend the hoof and hold. Repeat these movements several times in flexion and extension.

If flexion and extension are manageable, rotation of the hoof may be possible. Rotation stimulates the collateral ligaments and the relationship between the coffin, navicular and short pattern bones. Stabilise the pastern, hold the bottom of the hoof and rotate the hoof. Their role is to flex the joints of the lower leg, to limit overextension of the fetlock joint, and to aid weight-bearing and suspension of the limb.

When the resting length of the flexor muscle and tendon attachment is contracted, this shortens the length between the muscle-tendon unit in the upper leg and the tendon attachment in the lower leg. The DDFT attaches under the coffin bone, flexing the hoof, pulling the heel up and weighting the toe, or knuckling the toe and bending the leg. If untreated, this can create a predisposition to a contracted heel, a clubfoot and, in serious cases, can severely rotate the coffin bone.

When the superficial flexor tendon is involved, the pastern is flexed and the foal will knuckle over and weight-bear on the fetlock.

Acquired flexural contraction

Each of these examples of limb deformity can also occur in the developing foal and are referred to as acquired flexural contraction. They are often a result of injury or joint disease, nutritional imbalance or lack of age-appropriate movement. If the affected limb is painful, the foal stops weight-bearing the hoof, resulting in heel contraction, the pastern angle becomes more upright with progressive loss of hoof-ground contact and, ultimately, musculoskeletal changes of the limb.

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Knee and hock

To mobilise the knee or hock, stabilise the leg above the knee or hock, hold the lower leg and flex the knee/hock joint, and repeat as before. To extend, gently straighten the leg, stopping well before you have a straight leg to protect the knee joint.

Gentle, pain-free movement normalises circulation in the affected area, hydrating the muscles, tendons and ligaments, and movement stimulates secretion of joint fluid. Targeted joint exercise facilitates functional movement in each joint of the leg and foot. The leg is moved in a more normal fashion, the joints flexing and extending as they were designed to. The nerve endings (proprioceptors) found in the joint capsules, tendons, ligaments and muscles relay information to the nervous system about the movement of the joint, stretching and loading of the muscles, tendons and ligaments. This, in turn, stimulates the flexor muscle to find its normal resting length, reducing the flexural contraction down the leg.

Exercises are best done with the foal laying down, but can be done with some support when they are standing. Repeating these exercises daily helps the foal self-correct and the normal processes of growing, gaining balance, strength and mobility can proceed.

Facilitated movement exercises are complementary to most veterinary procedures used to treat flexural contractures. If in doubt, ask your veterinarian or equine practitioner.

ABOUT THE AUTHOR: Zarna Carter is the Director of the EPR Institute. A qualified Homoeopath, Herbalist and Ortho-Bionomy Instructor, Zarna devised EPR from her training in Ortho-Bionomy and Homoeopathy, while working in her Equine Naturopathic practice in Australia and the United States. The EPR Institute was established to foster and promote a non-force, sustainable approach to horse management to improve the lives of people and horses. The EPR Institute provides training throughout Australia, the United States and New Zealand. For more information, go to: www.eprortho.com.