The Veterinary Link

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Contracted tendons and other leg deformities in calves

Newborn calves can sometimes have leg deformities that range from mild to severe. The most common deformity is contracted tendons and results in the calf being unable to properly extend its legs (usually its front legs). Calves with mildly contracted tendons will walk up on their toes, while moderately affected calves will knuckle-over and walk on the front of their fetlocks. Severely affected calves may refuse to stand or will stand or walk only on their carpus (front knees).

Stretching and splints

With large calves, this condition may be caused by positioning problems within the uterus (i.e., legs held in a flexed position due to crowding). Contracted tendons is also described as an autosomal recessive inherited trait, as well as being associated with cows eating the plant lupin (found in the western U.S.) during the first trimester of gestation.

Calves with multiple birth defects such as a cleft palate, dwarfism and spinal problems due to a number of causes can also have contracted tendons of the legs. Therefore, any calf with contracted tendons should be examined closely to determine if it has a cleft palate or other defects. Calves with multiple defects have a poor prognosis, while calves that only suffer from contracted tendons are likely to recover.

Mildly affected calves and some moderately affected calves are likely to recover if they will stand and exercise. Ranchers can provide assistance by stretching and straightening the legs multiple times a day to help the calf to bear weight on its legs. Moderately affected calves may need to have a splint applied for a few days to provide enough support to allow the calf to put weight on the legs to stimulate exercise.

If splints are used, they must be monitored to make sure that the splint is not rubbing and causing sores to develop. Some veterinarians will create a 'toe shoe' by using an adhesive to attach a thin block of wood to the toes of the affected legs. By lengthening the toe, the tendons are stretched as the calf stands and moves. Severe cases that do not respond to physical therapy or corrective measures — such as a splint or toe shoe — are not common, but may respond to surgical cutting of the affected tendons.

While calves with contracted tendons will often gain normal mobility within a few days of birth, they are at risk of health problems from not consuming enough colostrum and milk during early life because of their restricted ability to suckle. Therefore, affected calves should routinely be bottle- or tube-fed colostrum from the dam within the first 12 hours of life, and they should be monitored closely to ensure that they are getting adequate nutrition.

The other problem that can occur in calves with contracted tendons that bear weight on knuckled-over pasterns or fetlocks is the risk of causing severe

enough joint damage to allow an infection to get started in the joints. The prognosis for full recovery of calves with joint infections is poor.

Calves born with legs that are bent and cannot be straightened do not have the same problem as calves with contracted tendons. Calves with fixed joints should be euthanized because they eventually die due to the combination of birth defects or because the calf will not be able to graze and find water normally.

Hypertension and proper pulling

A problem that has an opposite appearance to contacted tendons is overextended legs (hyperextension). In these situations, the calf has very weak pasterns and drops the fetlock until it contacts the ground. This condition is most commonly seen in calves that are premature or born very light.

In many cases, exercise will strengthen the muscles and tendons of the legs to allow them to gain a normal gait. Some veterinarians will assist these calves by attaching a thin block of wood to the heels with an adhesive to keep the toe on the ground and force a more normal stance.

Another cause of leg problems in newborn calves is injury caused during calving (particularly with human assistance). Calving injuries can include stretched or torn tendons or ligaments or even fractures.

It is important when assisting a cow during calving (particularly with mechanical calf pullers) to avoid excessive force. It is rare to cause problems when using calf chains or straps and human strength alone; therefore, mechanical pullers should not be used to exert more pressure than one strong person. Proper placement of the chains or straps on the calf's legs will also help avoid injury. The chains or straps should be placed above the fetlock with a half hitch around the pastern, providing two points to spread the pressure that will be applied during assistance.

Calving injuries are not confined to the front legs. Backward calves and normally positioned calves that become hip-locked can have muscle or nerve damage that causes them to have an abnormal gait or even difficulty standing on their hind legs. Calving injuries due to human assistance should rarely or never occur and indicate that more lubrication, more expertise or a C-section should have been used.

Calves that cannot stand and suckle for any reason need to be cared for until they can care for themselves. Calves discovered with contracted tendons within a day or two of birth are relatively common and usually have an uneventful recovery. More severe leg deformities or injuries in young calves can require veterinary intervention and daily care or may even prove to be fatal.