HORSE&HOUND
VET CLINIC

A wobbly start

A foal's gangly legs stand it in good stead in its early life, but can often be less than perfectly aligned. *Matt Smith MRCVS* explains why bent legs occur, and how they can be treated

THE VET

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BENT legs in foals are a common problem. Horses can be born with bent legs, or the problem can develop in the first few weeks or months of life. The majority will self-correct with time, but some cases will either fail to improve or get progressively worse, necessitating veterinary treatment. Because foals grow rapidly after birth, a bent leg can change quickly, and should always be monitored closely.

The window of time during which the problem can be treated is quite short, particularly when it is the lower part of the limb that is affected, and failure to act promptly can leave the foal with a permanent deformity.

The significance of a bent leg varies depending on the type, severity and underlying cause. In the most severe cases, a bent leg can preclude an athletic career entirely, but more commonly the consequence is less severe than this, "simply" representing an increased risk of injury. For commercial set-ups, this can have further repercussions as it may affect value and saleability.

UNUSUAL FLEX

IN general terms, **flexural deformities** are caused by the muscles and tendons (musculotendinous unit) being relatively too short for the skeleton, causing them to pull tight, and consequently flexing the intervening joint. Some foals are born like this, and others develop the problem as they grow.

Another less common cause of a flexural deformity is lameness and offloading of a limb, which can result in abnormal tension in the tendons, as if they were "contracting".

In most foals with flexural deformities, treatment focuses on lengthening the musculotendinous unit which is causing the flexural deformity.

Oxytetracycline is an antibiotic drug, but when administered at high doses it causes the muscles and tendons to "relax", allowing correction of the deformity. Treatment is best repeated every two days for three or four treatments, and it is important that the foal receives some exercise during this period.

An alternative approach is the use of splints to stretch out the muscles and tendons, which causes relaxation of the muscles, to correct the deformity. The splints need changing daily and care is needed in application, as there is a risk of pressure sores.

With either treatment approach, painkillers are often given simultaneously, to help encourage the foal to bear normal weight through the limb.

However, despite intensive treatment some foals fail to respond, or revert when treatment is withdrawn. In these cases, surgery may be recommended. Different procedures are performed depending on the joint and tendons involved.

The most common surgery is a check ligament desmotomy, meaning literally to cut the check

"The window of time during which the problem can be treated is short"

It is important to recognise however that having a bent leg doesn't mean a horse cannot be a world-class athlete – it may have absolutely no effect on the individual's athletic potential.

Typically, there isn't one specific cause of why a foal might develop a bent leg. Lots of factors can contribute, some occurring before birth and some afterwards. Genetics play a role, but factors during pregnancy such as mare nutrition, or problems such as foal malpositioning in the uterus, may contribute.

After birth other factors can lead to development of a bent leg. Nutritional imbalances and excessive exercise are common contributing factors. Other causes include overloading of a limb due to lameness in the opposite leg, or injury to the growth plate.

ASSESSING THE PROBLEM

IF you only ever look at a foal running in the long grass with its mare, it is easy not to spot developing limb deformities. It is important that the foal is looked at on a firm, flat surface, which makes recognising a bent leg early much easier.

Having the foal stand square is important, and each limb needs to be looked at from both the side, and directly in front. Each limb must be looked at individually, as the legs of foals tend to rotate out, making it impossible to look directly at the front of both limbs when standing in one spot.

Next the foal should be walked away from the observer and back, as subtle defects can be more obvious when the foal moves.

It is prudent to look at foals weekly, so that problems are picked up in time to act before they can't be corrected.

Pictures by catnap/Alamy and Matt Smith

Types of deformities

• LIGAMENTOUS LAXITY

NEWBORN foals are often born with a degree of laxity of their joints and supporting ligaments. This is the simplest type of deformity to deal with – usually requiring little more than sensible amounts of exercise to resolve rapidly.

In the most severe cases, the joints are sufficiently lax that the heels drag on the ground, causing abrasions. In these cases, some slippers to protect the feet when walking on hard (concrete) surfaces may be needed.

• LEXURAL AND ANGULAR LIMB DEFORMITIES

FLEXURAL deformities cause abnormal angles through the joints of the foal's limb when viewed from the side (pictured, right). Different joints can be affected, and foals can either be born with the deformity, or develop it as they grow. The most common joints affected are the fetlock, knee and coffin joint.

In contrast, angular deformities result in abnormal angles through the joints of the foal's limb when viewed from in front (pictured, below). The knee and fetlock are most commonly affected, but the hock is also occasionally involved.

Tendon laxity is the most common cause of bent legs in foals, often resolving with sensible exercise

ligament of either the superficial or deep digital flexor tendon. This can be highly successful and foals can pursue a normal athletic career after this surgery.

In severe cases, cutting the main tendon may be needed to correct the deformity. This is a salvage procedure for breeding, as foals who have had this procedure will not be able to pursue athletic endeavours as adults.

IRREGULAR ANGLES

ALTHOUGH laxity is the most common cause of bent legs in newborn foals, incomplete development of the small bones in the knee can result in them becoming wedged, leading to an **angular deformity**. This occurs when the bones haven't ossified (solidified as bone) properly, and have a large, soft cartilage exterior which can deform.

X-rays are needed to diagnose this condition, and when identified, the joints need supporting with the limb straight, to allow the bones to continue to develop normally, and prevent permanent deformity. This is most effectively achieved by fitting a cast for around 10 days.

In older foals who develop a bent leg as they grow, the cause is most often disproportionate growth between the inside and outside of the growth plate (the area of the bone from where the majority of the longitudinal growth of the developing bone arises).

This commonly occurs at the fetlock during the first two months of life, and at the knee at any time during the first six to nine months of life.

Initial treatment involves exercise restriction, and the vet may advise that hoof extensions are fitted to the foot to encourage natural correction. Other treatments sometimes combined with these approaches include shockwave therapy (to slow down growth on one side, letting the other side catch up), or periosteal strips (a minor surgery to release the outer envelope on the bone, to try to speed up growth on the side performed).

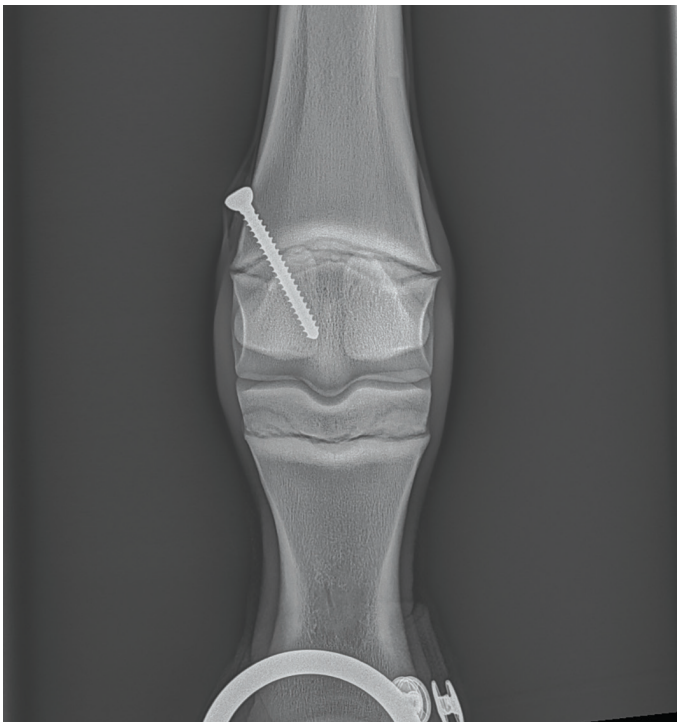
Most foals will correct with the above treatments, but in severe cases – and those either not responding, or responding too slowly – a surgical procedure is recommended to retard growth on the faster growing side.

The timing of such surgery is important, as the period of rapid growth ends at different times at each joint level (for example, two to three months at the fetlock, or around 12 months at the knee). For surgery to work, it must be performed before growth has stopped.

The most common technique to retard growth is that of placing a screw across the faster growing side of the growth plate. Once the limb has straightened, the screw needs removing immediately, or overcorrection can occur.

Overall, bent legs in foals are something that can occur for a number of reasons, and will do so in numerous cases. However, as long as foals are monitored and any problems spotted promptly, there is a very good chance that in the majority of cases the animal will go on to lead an active, healthy life with little intrusive intervention. **H&H**

NEXT WEEK **Mareish behaviour: what are the treatment options?**



Surgical screws can be used to arrest growth in a joint which is developing unevenly – fetlock in this case – until the issue resolves

In premature foals the small knee bones are soft and yet to develop fully; incomplete development can lead to angular deformities

Pictures by Matt Smith