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Limb abnormalities in young foals

Newborn foals can be affected by a range of defects, many of which will correct naturally while some will require intervention by a vet or farrier

Nature designed foals to be able to get to their feet quite quickly after birth and be ready to run away from predators at a very young age. Their limbs are relatively long compared to their height and it can be both entertaining as well as concerning to watch a newborn thoroughbred struggle to its feet for the first time. I often imagine trying to get that wet, spindly-limbed bundle of cuteness back inside the mare! Rather amazingly, most of a thoroughbred foal's growth in height occurs in the first six months of life and if there are problems with any of the limbs, it is imperative to recognise this and act accordingly.

Unfortunately, quite a number of foals are born with limbs that are not quite as straight as they should be. In the majority of cases, these conditions don't affect the foal's ability to stand or eventually race because they improve with age or following some not-too-invasive veterinary or farriery intervention. Occasionally, however, the abnormality might be life-limiting or require more invasive therapy. The important thing is to recognise at as early an age as possible that the limb(s) is/are abnormal and to determine the optimum treatment and best time for that treatment. The conditions described here are some of those which might be present at birth. More than one condition might occur in the same foal.

Hypoplastic bones

Premature or dysmature foals might be born with hock and knee bones (the cuboidal bones) which have failed to ossify (turn to bone) before birth. These soft bones appear rounded or even absent on xray and might be unable to support the weight of the foal, even when very young. In many of these cases, even if the foal's limbs look reasonable at birth, as the foal grows the hocks and knees 'collapse' – even if supported with splints or bandages – and the foal may require euthanasia.

Angular limb deformities

These are when the limb deviates from a straight line when viewed from the front or behind. One or both of the knees or hocks or one or more of the fetlocks might be affected.

Valgus deformity is when the limb below the affected joint deviates to the outside (laterally). Varus deformity is when the limb below the affected joint deviates to the inside (medially). For example, carpal valgus is essentially knock-kneed appearance (*see Figure 1*) and carpal varus is similar to being bow legged.

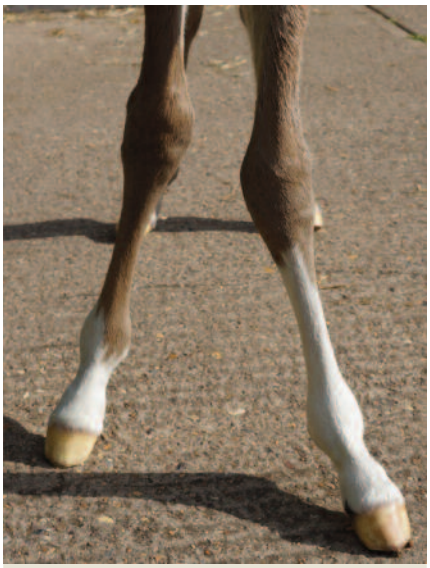

Figure 1 ***Carpal valgus deformity makes a foal look knock-kneed***

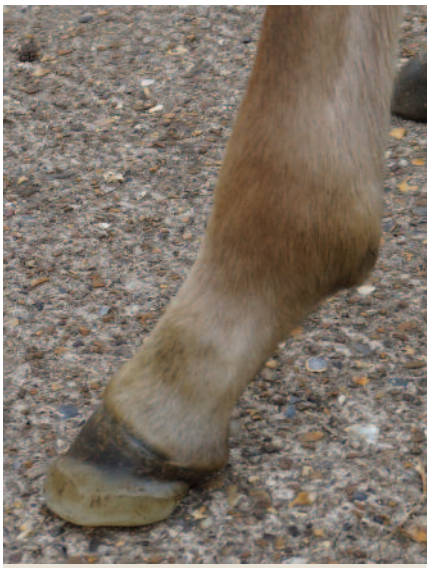

Figure 2 ***Adding a hoof extension to a foal can help to correct limb deformity***

There are several ways to try to treat these deformities, but the choice will depend largely on the severity and site of the deformity. Varus and valgus deformities of the fetlock must be dealt with within the first month of life as the growth plates here close very early. Gentle but targeted rasping of the hoof or the application of a composite hoof extension can be very effective for angular deformities of the fetlock but should be initially undertaken before the foal is two weeks old (*see Figure 2*). In severe cases, a screw might need to be inserted across the growth plate on the convex side to allow the other side to 'catch up' (*see Figure 3*). Abnormalities of the knees and hocks can be left longer but should not be ignored in the first few weeks of life if they are not improving or if getting worse.

As for fetlock angular deformities, carpal angular deformities require a minimum of level trimming but the use of extensions can encourage correction without the need for surgery. If the deviation is severe or not improving with age, a periosteal strip can be performed on the concave side of the lower radius or tibia (usually by around three months of age) or a screw or screws and wire inserted on the opposite side. Shock wave treatment is used in some cases where this is available and is believed by many to be effective.

Varus and valgus deformities are often complicated by rotation of the limb inwards or outwards from above or below the knee. A

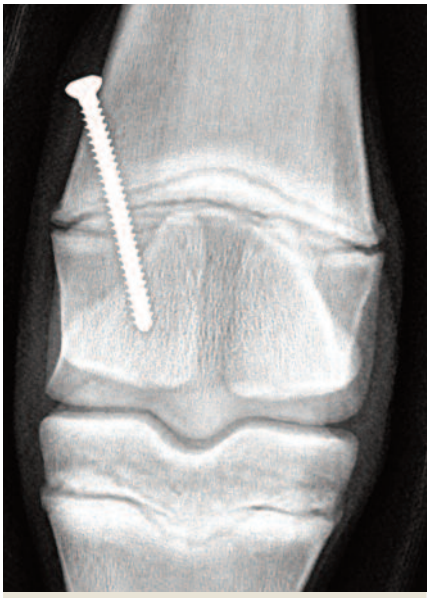

Figure 3 ***In extreme cases a screw can be inserted to the growth plate***

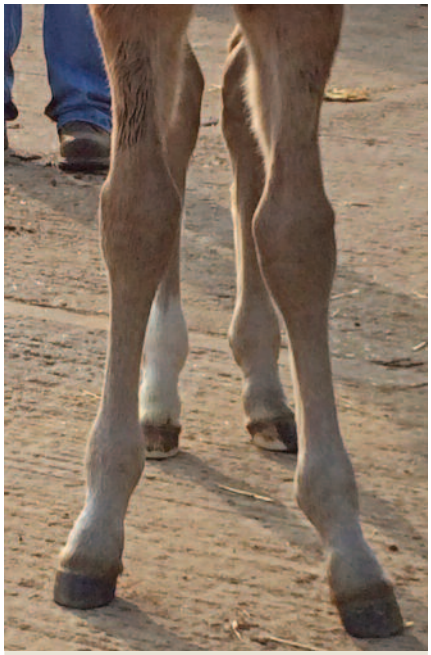

Figure 4 ***Slight outward rotation of the limb often corrects with age***

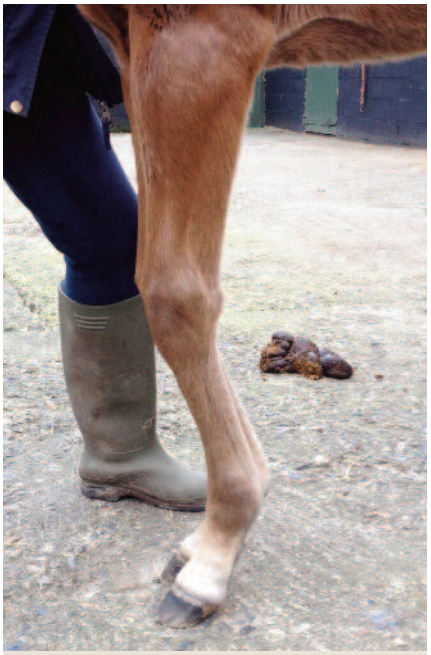

Figure 5 ***A marked carpal contracture or 'over at the knee'***

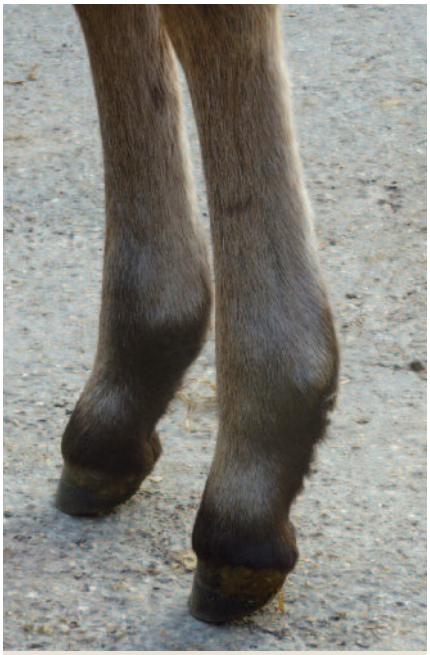

Figure 6 ***A corono-pedal contracture or 'ballerina syndrome'***

degree of inward rotation occurs with growth and broadening of the chest and the slight outward rotation often seen in very young foals is normal and will correct with age (*see Figure 4*). More severe rotations are difficult if not impossible to correct and harm might be done if correction is attempted. Usually, once the angular deformity has corrected, the rotation will also improve to an extent, or become much less obvious.

Contractures

When a joint is bent more than it should be in the normal direction of movement, the condition is called a contracture. The contractures we see most commonly at birth affect the knees, fetlocks and coffin (corono-pedal) joints. A mild knee (carpal) contracture will cause the foal to be 'over at the knee' when standing and both knees are usually affected.

These foals usually grow straight (or at least straighter) as long as they are not over-exercised in the first few weeks of life. More severe carpal contractures might require application of adjustable splints to try to 'stretch' the structures at the back of the knee (*see Figure 5*). Affected foals might be unable to stand unassisted and tire very quickly. Some of these do not respond to treatment. Very severe carpal contracture can cause dystocia (difficult foaling) and usually necessitates euthanasia of the foal.

Fetlock contractures tend to be more amenable to treatment than carpal contracture. If the foal is able to stand without knuckling over at the fetlock, its own body weight will often be enough to correct the contracture.

However, if it knuckles forward or is unable to stand, the limb will need to be supported in a more normal position by the use of splinting material. This must be removed at least daily so that the limb can be reassessed and to try to avoid pressure damage to the skin. A large dose of oxytetracycline is also often given as it has the effect of 'relaxing' the tendons.

Corono-pedal contractures (See figure 6) cause the foal to stand on tip-toe or even on the front (dorsal) surface of the hoof. These can be very difficult to correct and must not be ignored. Again, with these, if the dorsal hoof wall is vertical or better, the foal's own weight will probably help the correction.

However, if there is no improvement in the first 24 hours or the hoof is worse than vertical, a rigid dorsal splint will need to be applied. The toe is then wired into the splint to pull it into a more normal position, and oxytetracycline is usually given. The wire might need to be adjusted as the foot position improves.

Slack/weak joints

Another abnormality seen at birth is excessively slack or weak joints. Premature, dysmature or weak foals might be born back at the knee or very dropped on their fetlocks (slack pasterns).

In severe cases, the toes will be flipped into the air and the foal will walk on the fleshy part of the heels or the fetlock. Many of these foals usually improve very quickly after birth as they strengthen, but occasionally a foal will remain weak and slack in the pasterns, particularly behind. These can be difficult to treat – and some don't get better – but the important thing is to ensure that they are getting adequate but not excessive nutrition, that they are not over-exercised and that the heels (and if necessary the fetlocks) are protected from abrasion by bandaging. It is important to check for any other abnormality which might be contributing to the problem (e.g. severe windswept limbs, see below).

Windswept hindlimbs

Affected foals have hindlimbs which are 'bent' sideways virtually parallel to each other, e.g. they will have a hock varus on one limb and a hock valgus on the other. It is thought that these abnormalities occur because of the way the foal was lying in the uterus before birth. These usually improve with age but might need assistance such as extensions or remedial trimming as they grow. Occasionally, a severely windswept foal will be so badly affected that the spine is also involved, In these cases, euthanasia might be the only option.

Not all bad news

While this might read like a list of potential disasters, many of these limb abnormalities are manageable and respond, at least in part, to judicious management and foot care as the foal grows. However, don't leave it to chance. Seek professional advice as soon as the problem is noticed. Even if immediate interference is not required, you will have had an initial assessment against which the foal's progress can be monitored.

All figures courtesy of Rossdales LLP.