

# Colic and Colon torsion in the mare

## KEY-POINTS

- Broodmares within last trimester of pregnancy to 120 days post parturition are more at risk of colon torsion than other horses.
- In some mares with partial torsion the condition can resolve spontaneously but the majority of cases require surgical correction.
- Likelihood of a successful outcome is higher if surgery is undertaken promptly.
- When any broodmare develops colic, prompt veterinary attention is needed for best chance of survival.
- Strangulating lipoma – age, obese, pony
- Caecal impactions – previous abdominal surgery, pain
- Colon torsions – foaled within the last 120 days, change in feed, large breed horses, 7 year olds

## WHAT IS COLIC?

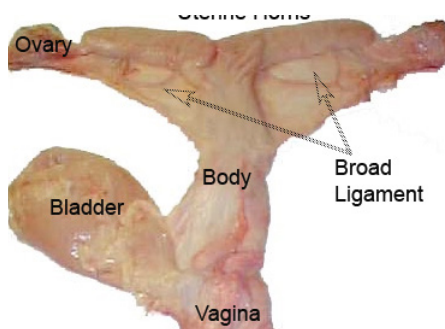
Colic is a descriptive word meaning abdominal discomfort, and can range from very mild spasmodic colic due to disruption of intestinal motility, up to life-threatening, violent colic such as can be seen with a large colon torsion.

Research studies looking at the overall incidence of colic show that on average it occurs once every 10 horse years, a statistic which means, for one horse on average it will have a colic episode every 10 years, or for a group of 10 horses, you might expect a colic episode once per year.

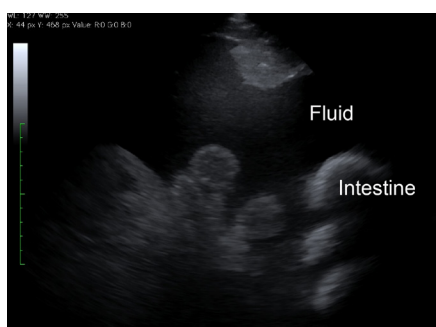
## RISK FACTORS FOR COLIC

There are known risk factors for colic in general and for specific forms of colic:

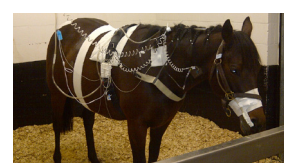
- Impactions – management change, weather change, bedded on straw
- Epiploic foramen entrapments – sudden growth, wind sucking, crib biting
- Change in rectal temperature (up or down)
- Dark pink mucous membranes
- Tacky mucous membranes
- Toxic line on mucous membranes



**Figure 1:** The large colon is around 26 feet long, holding almost 80l of semi-liquid contents and has a healthy pink colour.



**Figure 2:** In this horse with colon torsion, the colon has developed a dark purple colour because the colon torsion is affecting its blood supply.



**Figure 3:** Toxic mucous membranes.

## COLON TORSION

Colon torsion has been identified as a condition to which broodmares are particularly prone. It is a very serious condition, which can occur very rapidly and this speed of deterioration is responsible for the high death rate of the condition. The large colon is 3–3.7m in length and contains over 100l of fluid. It fills the majority of the lower part of the abdomen and is arranged in a double horseshoe location.

Initially, twisting of the colon causes an obstruction of the lumen, and it then starts to expand with gas, causing distension and pain. If the twist continues beyond 90°, then the veins draining blood from the area become blocked and as a result the intestinal wall becomes swollen and oedematous. If the twist continues to more than 270°, both the arteries and veins become obstructed and no arterial blood can get in, nor venous blood out. The inner lining of the colon (the mucosal wall) starts to break down and allows bacteria and bacterial breakdown products to leak into the body, and, in turn, this can lead to an endotoxaemia, which is a widespread inflammatory process throughout the entire body, triggered by the toxins produced by the bacteria which is evident by:

- Increased heart rate >60bpm
- Cold extremities
- Increased respiratory rate

Initially the pain may be mild, but can rapidly spiral out of control, and this reflects the duration, degree and rate at which the twisting of the colon occurs. Often these horses may be in such pain that it is not possible to examine them without heavy sedation.

Common symptoms exhibited by a horse with a colon torsion include all of the above and:

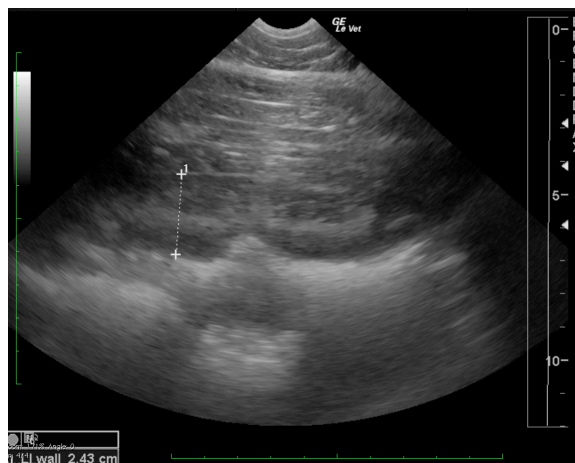
- Abdominal pain - ranging from lying down, flank watching to violently thrashing around the stable, often with head injuries.
- Frantic, unpredictable behaviour – due to pain
- Unresponsive to pain relief medication
- Sweating
- Abdominal distension
- Death can occur within 4–24 hours from the start of the first colic signs

All ages and breeds of horses can be affected, but adult horses, and in particular brood mares (13 times more likely than geldings or stallions) late in the pregnancy or within ~120 days post-foaling are at the greatest risk. The exact reasons why post-foaling mares are at risk are not yet clear.

Partial obstructions (<360°) may untwist themselves. But, horses with complete torsion generally require surgical correction. Prompt admission to hospital is beneficial, as the longer the delay the more compromised the intestinal wall becomes, the horse's level of shock increases and the prognosis becomes poorer. On admission to the hospital, depending on severity of clinical signs, intravenous fluids may be administered prior to surgery, but very often these horses are sent straight through to surgery.

Occasionally, horses may become dull, depressed and unresponsive, with an increased heart rate, and very dark mucous membranes. This can be a very bad sign, as it may indicate something has ruptured inside. The prognosis is extremely poor, and most horses will be euthanized if rupture is confirmed.

In horses with partial torsions, ultrasound can be used to measure the thickness of the colon and it may be obvious that the colon is lying in an abnormal location if vessels that should run along the inner surface of the colon are flipped over and visible running along the outer surface. Ultrasound is also useful in the post-operative period, if colon thickening does not resolve quickly after surgery, this is indicative of a more compromised intestine and a poorer prognosis.



**Figure 4:** In this mare, that had a colon torsion corrected surgically a few hours previously, the ultrasonograph shows that the colon is thickened due to inflammation and oedema.



**Figure 5:** In the same mare, a few days later, the colon wall is much less thick.

## PROGNOSIS

There have been reports that 36–74% of colon torsions survive to discharge from the hospital, which vary dramatically depending on how quickly they are taken to surgery from the onset of the colic symptoms and also the degree of torsion:

- <180° = good prognosis
- 180°–270° = fair prognosis
- >270° = poor prognosis

## MANAGEMENT AFTER SURGERY?

Protein and energy deficiencies can have a deleterious effect on recovery for critically ill patients, therefore early nutritional support would be indicated. In most horses with adequate gastrointestinal function, small and frequent feeds of high quality hay or a low bulk feed should be fed to the horse as soon as 12–24 hours post surgery.

Once the horse has returned home, normally around 7 days after surgery in an uncomplicated case, recording temperature at least once daily for a further 7 days, anything over 101°F or 38.5°C is useful at early identification of any possible problems.

Examining the abdominal surgical site at least once daily for a month, checking for signs of heat, excessive swelling (some is to be expected in the early period post-op), pain, discharge or separation of the incision edges. Monitoring faecal output is important, normal quantities and consistency is to be expected, too loose and colitis and diarrhoea could be developing, too little or too hard and an impaction may be suspected.

It is important that a controlled exercise plan is devised, as after major abdominal surgery the abdominal muscles are only weakly held together initially until sufficient scar tissue has formed. Usually 2 weeks of box rest, 2 weeks of box rest with in-hand walking for 10 minutes twice a day, followed by 4 weeks turn out in a small nursery paddock, approximately the size of half a tennis court. At this point slowly start to increase the amount of exercise undertaken.

Skin sutures are normally absorbable and do not need to be removed, however commonly skin staples are used as well, and these need to be removed approximately 14 days post surgery. In all, recovery can take up to 4 months, but providing there are no complications, the horse should be able to return to previous activity levels.

## PREVENTION OF RECURRENCE?

Once a horse has surgery for colic, they are subsequently more prone to having another bout of colic. Prevention strategies often involve minimising management change, and where these do occur, to do so very gradually over a period of time. Other prevention strategies involve having a parasite control strategy, ensuring constant fresh drinking water and keeping feeding routines as constant as possible.

A surgical procedure called colopexy has been developed with the aim of preventing colon torsions from recurring. The procedure involves suturing part of the large colon to the adjacent body wall, thus preventing it from being able to twist along its long axis. This is particularly of relevance to brood mares that are at a much greater risk than the rest of the equine population. Colopexy is however, not without its own risks, intermittent colic, breakdown of the colon-abdominal wall attachment and colon rupture are just a few! Which is why in the UK a colopexy is often only performed if there have been 2 or 3 previous colon torsion episodes.