UNIVERSITY OF LIVERPOOL | EQUINE HOSPITAL

## Colic types and causes

| Name | Spasmodic | Parasitic | Pedunculated lipoma | Epiploic foramen entrapment | Idiopathic focal eosinophilic enteritis | Anterior enteritis | Grass sickness | Ileal impaction |
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| **Cause or risk factors** | One of the most common causes of colic seen in the general horse population<br><br>The exact cause is often unknown<br><br>This type of colic has been associated with high levels of tapeworms | Heavy burdens of tapeworms, large strongyles, cyathostomins (small red worm) and ascarid worms can all cause signs of colic and / or weight loss | Colic caused by a fatty lump that dangles from a stalk of tissue around the gut wall. If this stalk wraps around the intestine, the blood supply will become cut off and affected horses will die without surgery | The epiploic foramen is a narrow opening high up within the abdomen. Severe form of colic that arises when small intestine enters foramen and becomes entrapped (stuck) causing the intestine to lose its blood supply.<br>A number of factors have been shown to increase the risk of this type of colic including: horses that display crib-biting or wind sucking behaviour, horses of greater height, those that have suffered from colic previously and is more common in the winter months in the northern hemisphere | This is a relatively uncommon cause of colic but is one that we have seen increasingly since 2000. The University of Liverpool sees more cases of this than any other hospital in the UK.<br><br>It appears to be a type of colic that occurs more commonly in specific areas of the country (e.g. the north west) and is more common in the autumn and in younger horses (although it can occur in a wide range of horse ages) | Inflammation of the small intestine close to the stomach (Duodenitis-proximal jejunitis). Evidence that *Clostridium perfringens* bacteria may be involved in the inflammatory response | Three distinct forms- sudden onset colic, high heart rate, sweating, salivation (drooling) and muscle tremors (acute and sub-acute forms) and gradual onset weight loss, reduced production of droppings and reduced appetite (chronic form). Cause unknown but evidence suggests *Clostridium botulinum* type C bacterial infection may be involved.<br><br>Horses at greatest risk are those aged between 2-7 years, during the spring months (particularly around April/May) and those who have recently moved premises | The ileum is the terminal (last) three feet of the small intestine. Ingesta (food material) can become blocked at this site causing a build up of gas and fluid in front of it and subsequent signs of colic<br><br>Causes in the UK include a heavy tapeworm burden (swelling of the ileocaecal junction). In the USA feeding Bermuda hay has also been implicated |
| **Intestinal region** | Anywhere | Tapeworms at the ileocaecal junction (between small and large intestine)<br>Cyathostomins- intestinal lining of large intestine<br>Strongyles- blood vessels of arteries of the intestine.<br>Ascarids- intestinal lumen in foals | Anywhere but usually affects the small intestine and occasionally the small colon | Usually small intestines | Small intestine | Duodenum and proximal jejunum | All | Ileum and ileocaecal junction |
| **Pathology** | Spasms or uncoordinated intestinal motility | Tapeworm- Impaction (blockage) of the intestine and interference with intestinal motility<br>Cyathostomins- damage | Obstructs flow of intestinal contents and blood to the affected portion of intestine – this results in | Obstructs flow of intestinal contents and blood flow to the affected portion of intestine (gut) | One or more areas of thickening of the small intestine are seen.<br>This causes a blockage of ingesta | Inflammation of region causes a loss of motility subsequently leads to a physiological obstruction of the | *Clostridium* bacteria capable of producing neurotoxins that interfere with intestinal function including motility.<br>See | Impaction of food material at this site prevents fluid and ingesta from exiting the small intestine into the caecum and large intestine |

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| | | to gut wall when they emerge from the gut wall lining<br>Strongyles- disruption to the blood supply to the intestine (this is very rare with the advent of modern wormers)<br>Ascarids- impaction | endotoxic shock and eventually death if removal of affected intestine is not performed | | (food) in the small intestine | small intestine with ingesta building up in front of affected section of gut | http://www.grasssickness.org.uk/default.aspx?pageID=1 | |
| **Diagnosis** | Mild signs of colic that respond well to administration of analgesics (painkillers) and anti-spasmodic drugs | Faecal egg worm counts and tapeworm antibody blood test – at present there is no test to determine whether there are large build-ups of cyathostomins in the gut wall | At surgery – affected intestine and the fatty mass identified. | Findings at surgery | Findings at surgery | Exploratory surgery usually required to make a definitive diagnosis | Clinical signs including high heart rate, absence of gut-sounds, gastric reflux, muscle tremors, patchy sweating and problems swallowing. findings at surgery or post mortem (intestinal biopsy) | Findings at surgery |
| **Treatment** | As above; other causes of colic should be considered if signs of colic persist | Many treatment routines including anthelmintic, pasture management and monitoring. Should be tailored to your horse and yard. See http://www.liv.ac.uk/diagnosteq/section_four_masterclass.htm | Strangulated (dead) intestine must be removed and the healthy ends re-joined (anastomosis) | Releasing entrapped intestines (this can be difficult and the length of affected intestine can vary in length from a few cm to many feet), resecting compromised intestine and re-joining healthy ends | Clearing of the blockage is usually all that is needed; only in certain cases is removal of intestine indicated | Decompression of intestines at surgery and appropriate antibiotic and anti-inflammatory drugs. Higher prevalence in N America where many cases are medically managed | Intensive nursing can sometimes help mildly affected horses. Unfortunately, it is frequently fatal, particularly in the acute and sub-acute forms | Surgical correction where impaction can be massaged into caecum. Tapeworm treatment |
| **Prognosis** | Very good<br><br>Prevent future episodes by ensuring good management and parasite control<br><br>colic prevention page | Depends on the type of parasite and severity of infection – severe infections can be life threatening | Depends on how long the blood supply to the intestine has been cut off (and consequently how sick the horse is at the time of surgery) and the type of surgery that has been performed; can range from good – poor | Depends on how quickly surgery is performed, how severely affected the gut is and what surgery is needed. Generally carries a fair – poor prognosis | Usually very good and recurrence of this type of colic is rare | Good | Acute and sub-acute- very poor to hopeless<br><br>Chronic - guarded | Good |

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| Name | Tympanic colic | Pelvic flexure impaction | Left dorsal displacement | Right dorsal displacement | Volvulus (torsion) of large intestine | Sand impaction |
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| **Cause or risk factors** | This occurs where gas builds up in the large intestine. This type of colic has been associated with a number of risk factors including increased time spent stabled, change in diet, poor dental care, crib-biting/ windsucking behaviour | The pelvic flexure is a hairpin bend in the large colon where the intestine undergoes a marked reduction in diameter.<br><br>This type of colic is more common during the winter months (when horses are likely to be kept stabled for longer) and in horses that undergo a sudden increase in time spent stabled e.g. due to injury. Poor dental care may also be associated with this type of colic | The nephrosplenic ligament (NSL) joins the spleen to the left kidney. Occasionally the large intestine migrates (moves) between the spleen and the body wall- becoming trapped over the NSL. Larger horses are at greater risk from this condition | Abnormal migration of the colon so that it lies between the caecum and the right body wall. More common in larger breed horses | This is one of the most severe and rapidly fatal forms of colic.<br>The large colon is massive in size in the horse and unfortunately is poorly designed, as it is fixed in place only at its base. This can allow the large colon to rotate (twist) around the base cutting off the blood supply.<br><br>Horses at greater risk include brood mares, particularly after foaling, change in diet and poor dental care | Sand accumulates in the large intestine of the horse. This is more common in certain geographical regions where the soil is sandy in nature and in horses that have been grazing on relatively bare pastures or have been turned out to eat food on sand arenas. It is more common in the autumn months, but can occur at any time of the year |
| **Intestinal region** | Large intestine | Pelvic flexure of large intestine | Large intestine | Large intestine | Large intestine | Large intestine- pelvic flexure and right dorsal colon common sites |
| **Pathology** | Gas distension rapidly develops causing overstretching of the intestine | Pelvic flexure impaction is a commonly diagnosed large intestinal colic due to anatomical changes at this section | Constriction of the large intestine as it passes over the NSL causes obstruction of the intestine. Usually only a simple obstruction (no damage to blood supply of affected intestinal section) but occasionally it may become strangulating. The underlying cause for large intestinal migration is unknown | Displacement of the large intestine causes obstruction and gas distension of the large intestine; it can sometimes result in obstruction of fluid moving out of the stomach into the small intestine | Rotation of the intestine causes the blood supply to this large part of the horse's intestinal tract to be disrupted. The severity will depend on how much the gut has rotated and how long blood supply to the colon has been compromised. | Unable to expel sand from intestines resulting in an impaction. Sand also has an abrasive effect on intestinal wall causing them to develop a degree of endotoxic shock |
| **Diagnosis** | Horses can look to have a bloated abdomen and gas distended large intestine is felt on rectal examination | Findings on rectal examination | Findings at rectal examination and confirmation by ultrasound | Rectal examination and surgical findings | Severe signs of colic or colic that progressively worsens in severity, rectal examination and surgical findings | Sand in faecal samples and diagnosis at surgery |
| **Treatment** | Administration of analgesia (painkillers), fluids by stomach tube and gentle exercise. If there is no response to treatment or more severe signs of colic are seen, surgery may be indicated | Treatment with analgesics (painkillers) and frequent administration of fluids by stomach tube. Surgery may be required in horses where no improvement is seen following medical treatment or where more severe signs of colic develop | Some cases will resolve with administration of analgesics (painkillers) and gentle exercise (this may be combined with the administration of a drug {phenylephrine} that shrinks the size of the spleen) helping the colon to return to its normal position.<br>Surgery may be required if medical treatment is not successful or if the horse is showing signs of severe pain and distension of the large intestine | Some respond to medical management but the majority require surgical intervention to correct displacement | Early surgical treatment | Usually requires surgical intervention to evacuate remove) intestinal contents and all the sand. Mild cases can be treated medically. |

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| **Prognosis** | Generally good. Ways in which future episodes may be prevented should be investigated<br>colic prevention page | Very good in most cases. Ways in which future episodes can be prevented should be investigated<br>colic prevention page | Good in most cases; repeat displacement can occur | Good –fair; repeat displacement can occur | Varies from good to very poor depending on how quickly surgery is performed and how severely affected the colon is | Good in most cases |