Colic: causes, risk factors and prevention

COLIC describes the behavioural signs associated with abdominal pain. Broadly speaking, when first assessing a horse with colic it is necessary to differentiate between those that are associated with the gastrointestinal tract and "false colic", i.e. those conditions that present to us as colic but do not involve the gastrointestinal tract (such as laminitis, ovarian disease and bladder stones).

For the purposes of this article we shall be focusing on causes of colic involving the gastrointestinal tract.

A horse that is colicking can do so for many reasons and so clinical signs can vary greatly. Different stages of colic can present in a number of ways and one horse will not always look the same way as another suffering from the same condition.

Generally, signs of colic in horses can be divided into those of mild, moderate and severe pain and can include one or all of the following: horses in mild pain can show pawing at the ground, flank watching, curling their lip or just not settling; moderate pain can present as an animal rolling occasionally, restlessness and lying down for prolonged periods; severe pain can present as intense pawing at the ground, sweating up, violent rolling and self-trauma is often noted from damage sustained.

Pain in colic is generally a result of either stretching or distension of the intestines with gas/fluid/food; unco-ordinated contraction or spasm of the intestines; loss of blood supply to a length of intestine or stretching of the mesentery.

Types and causes

Defining the type of colic involved enables the most appropriate treatment and prognosis to be established. Causes of colic associated with the small intestine can include pedunculated lipoma, ileal impaction, herniation, grass sickness, epiploic foramen entrapment and enteritis.

Causes of colic associated with the large intestine can include pelvic flexure impaction, displacement, tympany, volvulus and sand impaction.

Spasmodic colic is the most common colic encountered (Proudman, 1992), is often mild and typically lasts a couple of hours. Loud gut sounds are often heard over large areas of the gastrointestinal tract and will respond well to gut relaxants and pain killers.

Although numerous factors are linked to sparking an episode of spasmodic colic, high parasite burdens and sudden changes in diet are most frequently implicated (Proudman, 1998; Tinker, 1997).

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discusses the causes, risk factors and prevention of colic involving the gastrointestinal tract

When discussing incidence of colic in the general population, the prospective study by Proudman (1992) reported that 72% of colic cases were spasmodic or undiagnosed; 7% surgical; 5.5% flatulent; 5% pelvic flexure impactions; 9.5% other impactions and 1% colitis.

Risk factors and prevention

Prevention is always better than cure and certainly some cases of colic are preventable. Regular dental examination allows identification of problems affecting mastication; Hillyer (2002) proposed that poor dentition predisposes a horse to colic although this has not been confirmed.

Regular monitoring and appropriate treatment of intestinal parasites will reduce the risk of colic as confirmed by a number of studies; especially those associated with small strongyles and tapeworms (Proudman and Holdstock, 2000; Uhlinger, 1990).

Blanket treatment of all horses every 4-6 weeks is not an appropriate method of parasite control. Worm egg counts from faecal samples provide us with information on worm burden and species of worms responsible.

Tapeworms are not reliably measured from worm egg counts and so a tapeworm antibody test (serum ELISA) is required for evaluation. With anthelmintic resistance an ever increasing concern (Kaplan, 2002), monitoring and targeting of parasites is essential.

Changes to diet or inadequate dietary content can predispose to colic; changes in diet should take place over a seven- to 10-day period; forage should make up 60% of the total diet and a constant supply of fresh water should be provided. Concentrate feeds should be kept to the minimum level needed to maintain condition and performance, ideally divided into three or more feeds a day to decrease gastric and hindgut acid production (Geor & Harris, 2007).

Impactions are more prevalent in those horses fed coarse roughage with low digestibility (White and Dabareiner, 1997). Feeding horses from round bales is associated with a greater risk of colic (Hudson, 2001).

The author carrying out an abdominal auscultation.

Some vices predispose a horse to colic, especially those that wind suck. A link between wind-sucking and spasmodic colic has been suggested but not proven yet; Archer (2004) suggests the aerophagia from wind-sucking can create negative pressure in the abdomen leading to movement of bowel into the potential space in the lesser omental sac; this is associated with an increased risk of large colon obstruction and entrapment of the small intestine in the epiploic foramen.

Horses that have a history of previous colic are at a greater risk of further colic episodes; this is highest for horses that have undergone abdominal surgery in the previous three months (Proudman, 2002).

Colon impaction

Colic as a result of colon impaction carries a high risk of repeat colic; the exact cause is unknown but it is speculated that reduction in the number of neurons in the myenteric plexus of the right dorsal colon and pelvic flexure after colon impaction alters bowel motility making repeat obstructions more likely (Schusser and White, 1997).

A number of studies have identified a higher incidence of colic in certain breeds; Arabs and thoroughbreds are overrepresented (Cohen, 1995; Traub-Dargatz, 2001). Gender has some influence as logically there are some conditions that affect only stallions (inguinal hernia) and mares (large colon displacement around foaling).

For cases of simple colic, there are no gender differences as these cases are generally a result of management issues.

Proudman (1992) showed that middle-aged horses were more at risk than young or old horses but older horses are more likely to have a surgical lesion. Yearlings are more likely to suffer from ileocaecal intussusceptions and older horses are more likely to suffer from pedunculated lipoma.

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