

## **BLOAT WITH A TWIST**

Gastric dilatation volvulus (GDV) (bloat with a twisted stomach) is a disease in which there is gross distension of the stomach with fluid or gas and gastric mal-positioning. It causes pathology of multiple organ systems and is rapidly fatal. It is common in large and giant-breed dogs. The disease appears to have a familial predisposition. Thoracic depth/width ratio also appears to predispose dogs to GDV. Implicated dietary factors include dietary particle size, frequency of feeding, speed of eating, aerophagia (swallowing air) and an elevated feed bowl.

Exercise should be withheld for an hour before and after feeding as this can also be a factor. A fearful temperament and stressful events may also predispose dogs to GDV. Abdominal distension, non-productive retching, restlessness, signs of shock, tachypnoea (rapid breathing) and dyspnoea (difficulty breathing) are possible clinical signs.

The normal canine stomach does not directly contact the body wall. It is loosely held in place by its attachments to the oesophagus and diaphragm (at the oesophageal hiatus) and to the duodenum. Portions of the lesser omentum (two layers of extremely thin continuous peritoneum - a membrane which forms the lining of the abdominal cavity) that normally assist in maintaining the position of the stomach include the hepatoduodenal ligament and the hepatogastric ligament. The greater omentum (a large fold of visceral peritoneum) attaches loosely to the greater curvature of the stomach and provides no positional support.

It has been suggested that repeated episodes of gastric dilatation, especially when associated with splenic involvement, may cause stretching of the gastrosplenic ligament and hepatoduodenal and hepatogastric ligaments, thereby predisposing dogs to GDV. The hepatogastric ligaments of similarly sized dogs treated for GDV were significantly longer than the ligaments of control dogs.

Initial treatment includes treatment of shock and gastric decompression. Surgical treatment should be performed promptly. There are no studies comparing the use of different anaesthetic agents in the anaesthetic management of GDV. Pre-medication with an opioid/benzodiazepine combination has been recommended. Induction agents that cause minimal cardiovascular changes such as opioids, neuroactive steroidal agents and etomidate are recommended. Anaesthesia should be maintained with an inhalational agent.

Surgical therapy involves decompression, correction of gastric malpositioning, debridement of necrotic tissue, and gastropexy (surgical fixation of the stomach to the body wall). Options for gastropexy include incisional, tube, circumcostal, belt-loop, incorporating, and laparoscopic gastropexy.

Expected mortality with surgical therapy is 15–24%.

Prognostic factors include mental status on presentation, presence of gastric necrosis (dead stomach tissue which needs to be removed) - preoperative measurements of plasma lactate concentrations can be used as a good preindicator of gastric necrosis, this may assist in determining the prognosis of dogs with GDV; and the presence of cardiac arrhythmia (irregular heart rate).

The true incidence of recurrence of GDV remains unknown. Further prospective studies with large numbers of cases and long-term follow-up may help identify the recurrence rate of GDV after gastropexy.

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