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VETERINARY VOICE:
Tips of the Trade

Surgery: Gastric Volvulus and Dilatation

Risk Factors

Large and giant breed dogs have an increased risk for GDV. Although, it can be seen in smaller dogs and even the occasional cat. Other risk factors include increased thoracic height to width ratio, age, fearful temperament and stressful situations.

Clinical Signs

If caught early these patients can present with relatively stable hemodynamic parameters. As the stomach enlarges and causes compression of abdominal vasculature, signs of shock (tachypnea, tachycardia, pale mucous membranes, poor pulse quality, hypotension) and overall patient weakness will be evident. The patient will often have a distended tympanic abdomen that is painful on palpation. Owners will describe the pet as retching but not producing any vomitus. Definitive diagnosis requires radiographic confirmation of a malpositioned stomach. A **right** lateral abdominal radiograph is taken and GDV is confirmed when there is compartmentalization of the stomach with the pylorus sitting dorsal to the gastric fundus.

Pre-anesthetic Stabilization:

Fluid resuscitation is imperative for these patients prior to induction of anesthesia. 1-2 large bore intravenous cephalic catheters are recommended. A combination of crystalloids and colloids should be given to bring the heart rate and blood pressure to normal parameters. Start with ¼ to ½ of the shock dose (90 ml/kg in dogs). If the abdomen is severely distended, gastric decompression will help to temporarily further stabilize the pet prior to surgery. This can be achieved with a large bore intravenous catheter or needle placed directly from the body wall into the stomach or via orogastric intubation.

Surgical Treatment

Emergency surgery is indicated for gastric derotation, decompression and permanent gastropexy. Once the stomach is derotated it should be assessed for viability by evaluating the color, thickness and bleeding. If viability is in question then gastric resection is recommended. This can be done with stapling devices, by the “cut and sew” method or invagination of the necrotic tissue with gastric oversew. As the spleen typically twists with the stomach, splenic vasculature should be assessed. If the spleen has poor pulse quality and its color does not improve with derotation then splenectomy is recommended. Permanent gastropexy is then performed. There are a number of gastropexy techniques that are all very successful. The surgeon should choose the technique with which s/he is most comfortable.

Prognosis

If abdominal organ viability is normal, 90-95% of the patients will survive. If gastric or splenic resection is required then the prognosis is decreased to a 65 to 70% survival rate. Pre-operative lactate measurement is a good prognostic indicator of organ necrosis.

Post Operative Management

After surgery it is important to monitor ECG, blood pressure, pulse oximetry, packed cell volume, total protein, electrolytes and clotting parameters. Continued fluid and electrolyte therapy as well as antibiotic and pain management are indicated.

Complications

Immediate post-operative complications include cardiac arrhythmias, hypoproteinemia, further gastric necrosis, DIC and death. Long term complications can include chronic bloat or vomiting which can be secondary to neurologic dysfunction or poor positioning of the gastropexy. It is very rare for a gastropexy to breakdown but if this occurs the stomach is at risk for a subsequent torsion.

Prevention

For high risk breeds (Great Danes, St. Bernards, Weimeraners, Setters, German Shepherds and other large deep-chested breeds) it is recommended to feed two small meals per day and avoid activity or stress around mealtime. Ideally, in these breeds prophylactic gastropexy should be performed. This can be done as an open laparotomy or as a minimally invasive procedure, laparoscopic assisted gastropexy. Consider and discuss with pet owners prophylactic gastropexy at the time of spay or neuter in high risk breeds.

Questions?
Surgical Experts:
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The Veterinary Specialty Center of Tucson has board-certified surgeons available for questions and consultations on surgical conditions during the weekdays. A member of the surgery team is on-call 24/7 to provide consultations to VSCT emergency doctors and to perform emergency surgery for patients seen by the VSCT emergency service. Board-certified surgeons have four additional years of training are certified by the American College of Veterinary Surgeons to assure competency in advanced veterinary surgery.

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