

Tube Gastropexy for the Management of Gastric Dilatation Volvulus in a Dog

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Gastric Dilatation Volvulus (GDV) is an acute condition with mortality rate of 20% to 45% in treated animals, (Evans and Adams, 2010). Dogs fed a large volume of food per meal were at increased risk of developing GDV, (Raghavan *et al.*, 2004). Male gender, being under weight, eating rapidly, gastric motility disorders, stress are the predisposing factors for GDV, (Raghavan *et al.*, 2006). This report describes the successful medical and surgical management of GDV and splenic torsion in a German Shepherd Dog.

Case History and Clinical Observations

A 3 year old male intact German Shepherd dog with the history of frequent retching like symptoms and abdominal distension, was brought to Mapusa Veterinary Care Centre, Bangalore. On physical examination, the dog was found dull, depressed and dehydrated. Heart rate, respiratory rate and temperature was elevated above normal. Mucous membrane was congested. Abdominal distension was noticed and characteristic ping sound was heard on auscultation of left paracostal region. Right lateral and Ventro-Dorsal survey plain radiographs revealed the presence of gastric distension with gas, fluid and double bubble appearance of the gastric fundus and pylorus (Fig: 1).



Fig 1 : Plain radiograph showing double bubble appearance of stomach.

Treatment and Discussion

The dog was stabilized with pre-operatively fluids (Normal Saline 60 ml/kg/hr BW i/v) hestastarch @ 4 ml/kg BW i/v, Ceftriaxone @ 10 mg/kg BW i/v, was administered. The dog was premedicated with Diazepam @ 0.2 mg/kg BW i/v and Tramadol @ 4 mg/kg BW i/v. General anaesthesia was induced with Propofol @ 4 mg/kg BW i/v and maintained with Isoflurane @ 2.5% in oxygen using Boyles anaesthetic apparatus. The dog was intubated and a stomach tube was passed through the oesophagus for gastric decompression. But the stomach tube did not pass beyond the cardia of the stomach. Hence mid ventral coeliotomy was performed. The stomach was identified, stay sutures were placed on the serosa and gastric decompression done with suction apparatus, the stomach was detorted in counterclockwise direction and tube gastropexy was performed with foleys catheter of size 7 french. The coeliotomy incision was closed in routine manner. After 3 days of initial surgery, mid ventral coeliotomy was performed again and Right sided muscular flap gastropexy was done by making an incision in the seromuscular layer of the gastric antrum and right ventrolateral abdominal wall. Gastric incision was sutured with abdominal incision in a simple continuous pattern with Polyglycolic Acid size-1 (Fig: 2). Splenic torsion and partial necrosis of the spleen was noticed. Hence partial splenectomy was performed after double ligation of the hilar vessels at the splenic hilus (Fig: 3). The linea alba was



Fig 2 : Muscular flap gastropexy

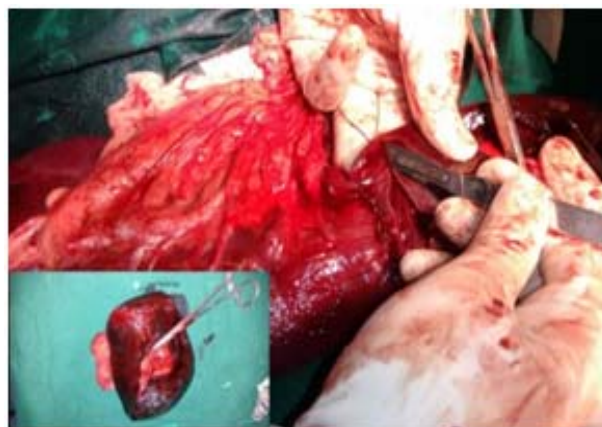


Fig 3 : Partial splenectomy

sutured with Polyglycolic Acid (PGA) size-1 in a ford interlock suture pattern. The subcutaneous tissue was sutured with Polyglycolic Acid size 1-0 in a simple continuous pattern. Skin was sutured with silk size 1-0 in a cross mattress suture pattern. During surgery 2% lignocaine @ 2 mg/kg BW i/v as bolus and 40 microgram/kg/hr BW i/v as continuous infusion with normal saline was administered for the management of cardiac arrhythmia. The dog was under monitoring for 3 days after surgery. Arterial blood gas analysis was done and electrolytes and acid-base status of the dog was assessed. Intravenous isotonic fluids, Ceftriaxone @ 10 mg/kg BW i/v, metronidazole @ 10 mg/kg BW i/v and butorphanol tartrate @ 0.2 mg/kg i/m were administered two times a day. Tab amiodarone @ 5 mg/kg P/O BID was given for 5 days for management of cardiac arrhythmia. After 3 days liquid diet was offered and gradually semisolid to solid diet was advised after a period of one week.

In GDV the stomach rotates in clockwise direction and it may be 90 to 360 degrees. The duodenum and pylorus move ventrally to the left of midline and fundus to the right of midline. Caudal vena cava and portal vein compression by the distended stomach reduces venous return and cardiac output, causing myocardial ischemia. In the above case the serosal layer of the stomach wall was congested due to torsion of the stomach and venous stasis. Hence tube gastropexy was performed initially to relieve the flatulence and contents of the stomach and to reduce serosal inflammation. Simple gastric dilatation without volvulus has a better prognosis than GDV, however, the degree of rotation is not

associated with death in dogs with GDV, (Buber *et al.*, 2007). Pre-operative and post-operative arrhythmias have been associated with an increased mortality, (Mackenzie *et al.*, 2010), which was managed very effectively in the above case. Disseminated intravascular coagulation occurs in 16 % of the dogs with GDV, but it was not found to be the risk factor for death, (Baltzer *et al.*, 2006). Splenic torsion most often occurs in association with GDV and careful consideration should be made prior to partial splenectomy, (Aronsohn *et al.*, 2009). Post-operative management of hypoalbuminemia, anemia, cardiac arrhythmia and secondary gastritis was done effectively and the case recovered uneventfully without much complications.

Conflict of Interest:

All authors declare no conflict of interest.

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