SURGICAL MANAGEMENT OF GASTRIC DILATATION AND VOLVULUS WITH PYLORIC OBSTRUCTION IN A DOG

Naveen Kumar Verma[1], P.D.S. Raghuvanshi[1], Deepesh Gautam[1], Rajesh Kumar[1], Pankaj Patel[1], A.C. Saxena[2], Amarpal[3] and P. Kinjavdekar[4]

[1]Ph.D. Scholar, [2] Scientist, [4]Principal Scientist, [3]Principal Scientist & Head; Division of Surgery, Indian Veterinary Research Institute, Izatnagar (Bareilly)-243122, (U.P.).

[Received: 30.11.2018; Accepted: 28.5.2019]

{DOI 10.29005/IJCP.2019.11.1.070-072}

An eight-year-old male Labrador retriever dog was presented to Referral Veterinary Polyclinic, Indian Veterinary Research Institute, Bareilly in recumbent condition having distended abdomen with a complaint of bloat and difficult breathing after intake of meal. Radiographic examination revealed distended gas filled stomach. On the basis of patient history, radiographic and clinical examination it was diagnosed as a case of Gastric dilatation and volvulus. Surgery was planned under general anesthesia. A cranial to middle mid line coeliotomy was performed and gastric decompression done by gastrotomy and gastric contents were evacuated. While performing gastrotomy, it was found that pylorus was obstructed with soapnut. Obstructed mass was removed and gastrotomy incision was closed. Thereafter, stomach was repositioned to its normal anatomical position by gentle handling followed by gastropexy. Abdominal cavity was lavaged thoroughly with warm normal saline and surgical incision was closed in standard manner. Post-operative treatment included antibiotics and analgesics together with fluid therapy given for 5 days. The dog showed uneventful recovery.

Keywords: Gastric dilation and volvulus, Gastropexy, Pyloric obstruction, Soapnut.

Gastric dilation and volvulus (GDV) is a rapidly progressive devastating condition of dogs predominantly encountered in speciality and emergency practice**.** In dogs, GDV is characterized by gaseous distension of the stomach and rotation of the stomach around its long axis. It is commonly associated with feeding of large meals which may result in stomach dilatation due to accumulation of food and gas; it may get to a point where neither food nor gas may be expelled. GDV is invariably associated with varying degrees of hypovolemic or septic shock, ventilation perfusion mismatch, and myocardial dysfunction. It is common in certain large and giant purebred dogs; and deep-chested breeds are especially at risk (Van Kruiningen *et al.*, 2013). Mortality rates in dogs range from 10 to 60 percent, even with treatment (Allen and Paul, 2014).

It was reported that genetics/breed of dog, food texture/quantity/quality/ingredients, emotional state, age and presence of foreign body in GIT are the several predisposing factors for GDV (Maki *et al*., 2017). De Battisti *et al.*, (2012) reported that the presence of a gastric foreign body may increase the likelihood of developing GDV by a minimum of 97.9%. Gastropexy, a technique, commonly used to securely adhere the stomach to the body is reported to be effective and decreases the recurrence of GDV from 80% to less than 5% (Allen and Paul, 2014). Generally, GDV patients have worse prognosis and many may die if immediate medical attention including surgical correction is not performed (Allen and Paul, 2014).

Case History and Observations

An eight-year-old male Labrador retriever dog weighing 48 kg was presented to Referral Veterinary Polyclinic, Indian Veterinary Research Institute, Bareilly in recumbent condition having distended abdomen with a complaint of bloat and difficult breathing after intake of meal. Radiographic examination revealed typical ‘‘double bubble’’ appearance of stomach filled with gas (Fig.1). On the basis of patient history, radiographic and clinical examination it was diagnosed as a case of Gastric dilatation and volvulus (GDV).

Fig.1 Radiograph showing distended gas filled stomach

Fig.2 Intraoperative image showing exteriorized distended stomach

Fig.3 Evacuation of gastric contents through Gastrotomy

Fig.4 Intraoperative image showing pyloric obstruction with foreign body (Soapnut)

Surgical Treatment

The dog was prepared for aseptic surgery and pre-anaesthetized with Atropine sulphate 0.04 mg/kg body weight S/C, Butorphanol 0.2 mg/kg body weight I/V and Diazepam 0.25 mg/kg body weight I/V. The general anesthesia was induced with Ketamine hydrochloride 5 mg/kg body weight I/V and maintained with Ketamine hydrochloride 5mg/kg body weight and Diazepam 0.25mg/kg body weight I/V.

The dog was restrained in dorsal recumbancy. A cranial to middle mid line coeliotomy was performed and gastric decompression done by gastrotomy and gastric contents were evacuated after exteriorizing the stomach from the abdominal cavity (Fig.2 and 3). During gastrotomy, it was found that pylorus was obstructed with soapnut (Fig.4). Obstructing mass was removed and gastrotomy incision was closed in double layered Lembert suture pattern using vicryl 1/0. Stomach was then de-torted and repositioned to its normal anatomical position by gentle handling followed by gastropexy with left lateral abdominal wall using simple interrupted suture pattern. Abdominal cavity was lavaged thoroughly with warm normal saline and surgical incision was closed in a routine manner.

Results and Discussion

Post operatively ceftriaxone 20mg/kg I/V for 7 days, meloxicam 0.5mg/kg I/M for 3 days were administered. The animal was maintained by parenteral administration of Ringers Lactate and Dextrose 5% daily for five days. Sutures were removed on 10th post-operative day and animal recovered uneventfully.

GDV, also known as acute gastric dilatation (AGD) or bloat, is a one of the acute life threatening medical emergency requiring prompt medical attention for successful outcome. GDV occurs when the pylorus is mispositioned. In the present case, we also found the gastric foreign body (soapnut) obstructing the pylorus. Accurate diagnosis and appropriate treatment strategy is vital for successful clinical outcome. Marked distended abdomen, dorsal displacement of the antrum with suspected compartmentalization, narrowing of the caudal vena cava and suspected microcardia due to reduced return of blood from the abdominal viscera and hypovolemia are the typical radiographic findings for GDV. Surgical intervention involves gastric decompression and repositioning of stomach in its normal anatomic position

In conclusion, early diagnosis and surgical correction are vital for the survival of dogs suffering from gastric dilatation and volvulus.

References

Allen, P., and Paul, A. (2014). Gastropexy for prevention of gastric dilatation-volvulus in dogs: history and techniques. *Topics in Companion Animal Medicine*, **29**(3): 77-80.

De Battisti, A., Toscano, M.J. and Formaggini, L. (2012). Gastric foreign body as a risk factor for gastric dilatation and volvulus in dogs. *J. Amer. Vet. Med. Assoc.*, **241**(9): 1190-1193.

Maki, L.C., Males, K.N., Byrnes, M.J., El-Saad, A.A. and Coronado, G.S. (2017). Incidence of gastric dilatation-volvulus following a splenectomy in 238 dogs. *The Canad. Vet. J.*, **58**(12): 1275.

Van Kruiningen, H.J., Gargamelli, C., Havier, J., Frueh, S., Jin, L. and Suib, S. (2013). Stomach gas analyses in canine acute gastric dilatation with volvulus. *J. Vet. Internal Med.*, **27**(5): 1260-1261.