



## GASTRIC PERFORATION IN A ROTTWEILER – A CASE REPORT

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Gastro-intestinal (GI) perforation and subsequent septic diffused peritonitis are the most common life-threatening condition in dogs and cats. The common predisposing factors for gastroduodenal ulcers leading to perforations include NSAID administration, hepatic disease, major surgery, periods of high stress, shock, and other causes of decreased gastric circulation, gastric hyperacidity, and gastrointestinal neoplasia (Willard, 1995 and Sullivan and Yool, 1998). Perforations are also caused due to foreign body ingestion, gastric dilatation and volvulus, external trauma, leakage of previous enterotomy or anastomotic sites, and perforation of jejunum, ileum, or colon. (Hinton *et al.*, 2002). The present paper deals with a case of gastric perforation in a dog.

A three year old male Rottweiler weighing 32kg was presented to Teaching Veterinary Clinical Complex, Pookode with a complaint of anorexia and vomiting for the past 3 days. The animal was treated with meloxicam and corticosteroids for management of arthritis for a period of one week. On clinical examination the animal was dull, depressed and lethargic. All the visible mucous membranes were blanched. It had increased temperature, heart rate, pulse and respiratory rate and capillary refilling time with values of 103 °F, 124/min, 128/min, 38/min and 4 sec respectively. Physical examination of the abdomen evinced diffused pain all over the abdominal region.

Haemogram revealed RBC  $6.23 \times 10^6$  cells/mm<sup>3</sup>, haemoglobin 12.46 g/dL, PCV

38.62 per cent, MCV 61.5 fl, MCH 21.7 pg, MCHC 32.3 g/dl and platelet count 5.11 lakhs/L. Leukogram revealed elevated total leucocyte count  $32.2 \times 10^3$  cells/mm<sup>3</sup>, neutrophilia (90.2 %), lymphopenia (6.1 %) and monocytes (3.2 %). Serum biochemistry showed total protein, albumin, globulin, A:G ratio, bilirubin, ALT, GGT, and creatinine were 4.9 g/dL, 2.2 g/dL, 2.7 g/dL, 0.71, 0.23 mg/dL, 66.12 IU/L, 3.9 IU/L, and 0.89 mg/dL respectively. Na<sup>+</sup>, K<sup>+</sup>, Cl<sup>-</sup>, lactate and bicarbonate values were 139.61 mmol/L, 4.4 mmol/L, 117.32 mmol/L, 6.86 mmol/L, and 26.38 mmol/L respectively. The dog has severe neutrophilic leucocytosis, hypoproteinaemia, hypoalbuminaemia, and increase in bicarbonate and lactate content in the plasma.

Radiograph of the lateral abdomen revealed ground glass appearance of the entire abdomen suggestive of diffused peritonitis (Figure.1). Ultrasonographic examination of the stomach showed the presence of a perforation measuring three centimetre at the lesser curvature with anechoic fluid in the abdomen (Figure.2). The case was diagnosed as gastric perforation and the animal was stabilized with the intravenous fluids. Gastrotomy followed by closure of the perforation was performed. The dog was treated with enrofloxacin @ 5mg/kg bw for four days.

The animal died on the fourth day of the treatment. The clinical signs observed in the present study may be due to peritonitis subsequent to perforations (Enberget *al.*, 2006 and Parrahet *al.*, 2013). Long term use

of meloxicam and corticosteroids leads to impairment of the gastric mucosal turnover by inhibiting cyclooxygenase pathway and further inhibiting synthesis of gastric protectants prostaglandin which results in the ulcers and subsequent perforations and peritonitis (Halfacree, 2010). Physical examination of the abdomen showed diffused pain due to severe peritonitis caused by seepage of the gastric contents into the abdominal cavity (Parrah *et al.*, 2013).

Severe neutrophilic leucocytosis was due to peritonitis, subsequent to perforation (Enberget *et al.*, 2006). Decrease in the total protein value, albumin and A:G ratio was due to seepage of proteins through injured gastric wall (Hickey and Magee, 2011). Increase in lactate was due to anaerobic metabolism in response to tissue hypoxia (Monnet 2003) and Increase in bicarbonate was due to loss of  $H^+$  ions through vomiting and subsequent increase in  $HCO_3^-$  in blood leading to metabolic alkalosis (Gennari *et al.*, 2008).

The pneumo-peritoneum and ground glass appearance of the entire abdomen observed in the radiograph was due to



**Fig. 1.** Ground glass appearance in Radiograph



**Fig. 2.** Ultrasonogram of the stomach showing perforation

peritonitis. Ultrasonographic examination of the stomach revealed the presence of perforation measuring three centimetre at the lesser curvature and anechoic fluid in the abdomen (Boysen *et al.*, 2003).

Gastrotomy followed by closure of the perforation was performed (Hinton *et al.*, 2002) but the animal died on the fourth day of treatment and this might be due to severe peritonitis (Murray *et al.*, 1972).

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