
SUCCESSFUL SURGICAL MANAGEMENT OF MEGACOLON IN AN AMERICAN BULLY DOG - Case report

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ABSTRACT

A 2.5 year old female American bully dog was presented to the Teaching Veterinary Clinical Complex, Mannuthy with the history of constipation and anorexia a period of four days. On abdominal palpation, a hard elongated structure could be palpated. On radiographical examination, entire length of colon was found to be distended with faeces which was more than 10 cm diameter, suggestive of megacolon. Under general anaesthesia mid ventral celiotomy was performed. The colon was evacuated of the faecal material after colotomy. Post-operatively animal was maintained on antibiotics and supportive medication. On radiographical examination on tenth post-operative day, marked reduction in the colon diameter. The animal recovered uneventfully.

Keywords: Anorexia, constipation, megacolon and colotomy

INTRODUCTION

Megacolon is characterised by colonic hypomotility and a permanent increase in the diameter of the colon as a result of severe and irreversible dilatation. It may be congenital or acquired. Prolonged constipation may lead to obstipation which is the main sign of megacolon. The diagnosis of megacolon can be made from the history, clinical examination, and abdominal survey radiographs for confirmation (Foley, 2017). Colotomy with manual removal of faeces is a minimally invasive procedure to treat the megacolon in dogs (Vigneswari *et al.*, 2023).

ANAMNESIS AND CLINICAL OBSERVATIONS

A 2.5 year old female American bully dog weighing 22 kg presented to the Teaching Veterinary Clinical Complex, Mannuthy, with the history of not defecating for the past four days and reduced appetite

for the past few days. Vaccination and deworming were done periodically. On clinical examination, rectal temperature was 38.3°C, mucous membrane appeared pale roseate and had sunken eyeball. Abdominal palpation revealed hard mass which was having a stone like consistency. Hematological and serum biochemical parameters were within the normal range. The lateral radiographic view of the abdomen revealed a dilated colon which was more than 10cm in diameter and seen distended from epigastric region to pelvic inlet (Fig. 1). The case was tentatively diagnosed as a megacolon and was decided to manage surgically.



Fig. 1. Lateral abdomen radiograph

TREATMENT AND DISCUSSION

Pre-operatively, animal was administered with Inj. dextrose normal saline and Inj. ringer's lactate at the dose rate of 10 ml/kg body weight and Inj. Ceftriaxone-tazobactam at the dose rate of 25 mg/kg body weight intravenously. Prepared the

ventral abdomen from xiphoid to pubis for aseptic surgery. As preanaesthetic medication Inj. xylazine hydrochloride and Inj. tramadol hydrochloride were administered intramuscularly at a dose rate of 1.0 mg/kg body weight and 2.0 mg/kg body weight respectively. Anaesthesia was induced with Inj. ketamine hydrochloride and Inj. midazolam intramuscularly at the dose rate of 5.0 mg/kg body weight and 0.1 mg/kg body weight respectively. Endotracheal tube was placed following induction and animal was preoxygenated with 100% oxygen and the anaesthesia was maintained with 2-3% isoflurane. After positioning and draping the surgical site, a ventral midline incision was placed through the skin incision and subcutaneous tissue and the linea alba was exposed. Incision was made on the linea alba, to enter into the abdominal cavity. The dilated colonic segment was exteriorized and thoroughly packed off from the remaining viscera (Fig. 2).



Fig. 2. Dilated colon which was exteriorized

A linear incision was made on the antimesenteric border of the colon and the faecal material was manually removed. Colotomy wound was sutured in double inversion sutures, Cushing's followed by Lembert's, using Polyglycolic acid (2-0) (Fig. 3).

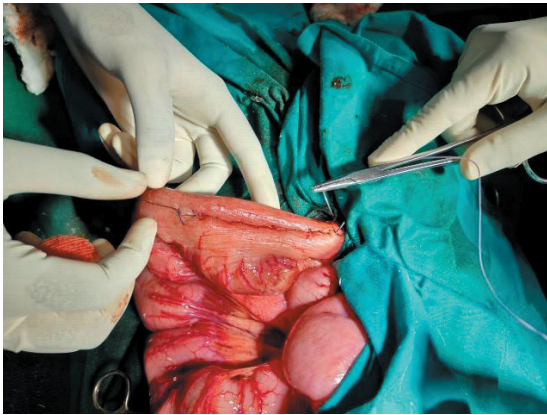


Fig. 3. Suturing the colotomy wound

Peritoneal cavity was lavaged with warm normal saline. Muscle and subcutis layers were apposed in the simple continuous suture pattern using Polyglycolic acid (0). The skin was apposed in a horizontal mattress suture pattern using nylon (3-0) suture. Post-operatively, oral feeding was not allowed for 48 hours and the dog was maintained on parenteral fluids and antibiotics. Inj. dextrose normal saline and Inj. ringer's lactate at the dose rate of 10 ml/kg body weight was given twice daily intravenously for two days. Inj. ceftriaxone-tazobactam at the dose rate of 25 mg/kg body weight was given intravenously for five days. From the third day, oral feeding was started with fluids

along with the administration of cinitapride (1mg) orally tablet. Prebiotics and methyl cobalamine tablets were also administered orally. Dog was maintained on convalescent diet from the fourth day onwards and shifted to normal diet from the 10th postoperative day. Skin sutures were removed on the 10th post-operative day. A lateral abdominal radiograph on the 10th post-operative day revealed a reduction in the diameter of colon to normal level (Fig.4) and the animal had an uneventful recovery.

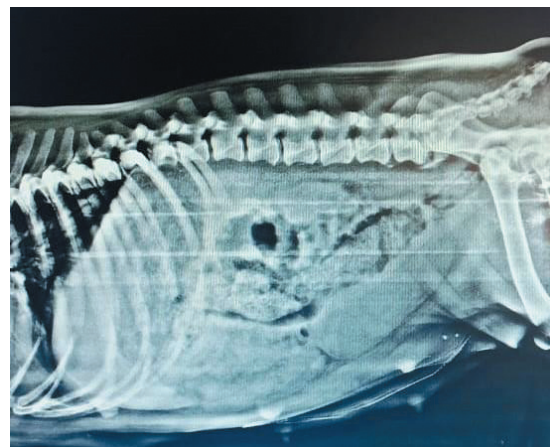


Fig. 4. 10th postoperative radiograph

A distended, hypomotile colon is the characteristic feature of megacolon. There have been reports of occurrence this syndrome in dogs (Vigneswari *et al.*, 2023), cats (Bertoy, 2002), humans (Wang and Camilleri, 2019), and pigs (Bassett *et al.*, 1999). Congenital megacolon is well described in man (Hirschsprung's disease), which is characterised by aganglionosis of a segment of colon. This condition has been suggested to occur in cats (Roe *et al.*, 2010),

although its true existence in this species has never been documented. Acquired megacolon may be primary (idiopathic) or secondary (neoplasia, foreign bodies, prostatic hyperplasia, perineal hernia, endocrine and neurogenic disorders), based on the cause for the development the clinical signs manifested. Common clinical signs are prolonged constipation, lethargy, abdominal distension and stiff gait. The colonic diameter on a radiograph is determined by dividing the body length of the second (L2), fifth (L5), or seventh (L7) lumbar vertebrae by the maximal colonic diameter (MCD). The MCD in dogs and cats should be less than the body length of L5 or L7 vertebra and an MCD ratio of ≥ 1.5 in dogs and ≥ 1.48 in cats is thought to be a reliable indicator of megacolon (Trevail *et al.*, 2011). The first line of treatment for megacolon aims to remove any potential causes of constipation and establish and/or maintain the fluid and electrolyte balance. Additionally, the initial line of treatment for this illness is medical therapy with stool softeners. In this regard, animals ought to be properly hydrated prior to performing an enema. Following that, it is advisable to start medical care with laxatives, prokinetics and cathartics. When medical therapy is no longer effective, surgery is recommended (Williams, 2012). The commonly performed surgical management included colotomy with the removal faecal

mass or subtotal/total colectomy with or without removal of ileocolic junction. Defecation may be achieved following surgery with a combination of strict diet and rigorous medical care including antibiotics and supportive therapy. High-fiber food consumption helped to minimize constipation by attracting the water, which improves the consistency of stools. While azithromycin enhanced the propulsive motility of colon after surgery and promoted the best possible surgical outcome (Nemeth *et al.*, 2008 and Chandler, 2013).

CONCLUSION

Megacolon in dogs develops mostly due to an unknown etiology. Medical management is warranted to treat the cause. On the absence of a positive outcome following medical management, immediate surgical intervention is needed. Eventhough partial or subtotal colectomy may be adopted, colotomy with manual removal of faeces is the best method and reduce postoperative complications and this is to be followed up with proper post operative care.

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