



ISSN: 2456-2912

VET 2023; 8(5): 103-105

© 2023 VET

[www.veterinarypaper.com](http://www.veterinarypaper.com)

Received: 13-05-2023

Accepted: 18-06-2023

**M Vigneswari**

Assistant Professor, Department of Veterinary Surgery and Radiology, Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Kurumbapet, Puducherry, India

**N Gurunathan**

Assistant Professor, Department of Veterinary Surgery and Radiology, Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Kurumbapet, Puducherry, India

**S Tina Roshini**

Assistant Professor, Department of Veterinary Surgery and Radiology, Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Kurumbapet, Puducherry, India

**N Aruljothi**

Professor and Head, Department of Veterinary Surgery and Radiology, Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Puducherry, India

**Corresponding Author:**

**M Vigneswari**

Assistant Professor, Department of Veterinary Surgery and Radiology, Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Kurumbapet, Puducherry, India

## Surgical management of idiopathic megacolon: A review of six dogs

**M Vigneswari, N Gurunathan, S Tina Roshini and N Aruljothi**

### Abstract

The study included six dogs affected with megacolon presented with the history of constipation over the period of one to two months, intermittent vomiting, tenesmus and decreased appetite. Clinical examination revealed distended abdomen, hard and pain on palpation of abdomen. Rectal examination revealed hard faeces at the pelvic inlet. Radiographic findings of lateral abdominal radiograph revealed stool retention and markedly dilated colon extending from the epigastric region to the pelvic canal with a diameter up to 20-30 cm. Based on the history, clinical and radiographic findings, all dogs were diagnosed as megacolon. Preoperatively, all the dogs were treated with fluid therapy and followed by prophylactic antibiotic using inj. Cefotaxime @ 50 mg/kg b.wt intravenously and inj. Ranitidine Hcl @ 0.2 mg/kg b.wt subcutaneously. Manual evacuation of the colon using warm water enemas and gentle extraction of faeces was removed but failed to evacuate completely. All the animals were subjected for colostomy with manual extraction of faecal mass and colopexy was performed under general anaesthesia. Postoperatively, fluid therapy, antibiotic and analgesics were administered for one week and enabled normal defecation in all the dogs.

**Keywords:** Colostomy, colopexy, idiopathic megacolon, dogs

### Introduction

Megacolon refers to an abnormal dilatation of the colon that may be acute or chronic and represents the end-stage of colonic dysfunction in idiopathic cases (Nemeth *et al.*, 2008; Meier-Ruge *et al.*, 2006) [5, 4]. The large intestine is accountable for absorption of water, salt and storage of faeces which is relatively shorter in dogs and cats, roughly 10 - 20% of the length of the small intestine, which plays a less significant role in nutrient digestion (Chandler, 2013) [2]. Diagnosis of megacolon is based on history, clinical examination and confirmed with survey radiographs of the abdomen (Foley, 2017; Tim *et al.*, 2011) [3, 7]. The primary treatment is aimed to correct the fluid and electrolyte balance, as well as to reduce the possible cause of constipation with stool softener. Standard surgical procedure for megacolon is Subtotal colectomy however; colostomy with manual extraction of faecal mass may also be considered (Prokic *et al.*, 2008; Nemeth *et al.*, 2008) [6, 5]. This study evaluates the colostomy procedure in the treatment of megacolon to prevent removal of the colon and the recurrence of megacolon.

### Materials and Method

The study included six dogs of various breeds with the age group of five to nine years and weighing twenty to thirty kilograms were presented to the Department of Veterinary Surgery and Radiology, Veterinary Clinical Complex, Puducherry with the history of constipation over the period of one to two months, intermittent vomiting, tenesmus and decreased appetite. Animal particulars of all the dogs are presented in the Table 1.

Clinical examination revealed dehydration, pale conjunctival mucous membrane and distended abdomen. Rectal examination revealed hard faeces at the pelvic inlet. Lateral abdominal radiograph revealed stool retention and markedly dilated colon extending from the epigastric region to the pelvic canal in all animals with a diameter up to 20-30 cm which is a pathognomonic sign of megacolon (Figure 1). Haematobiochemical values were within the normal range except for an elevated packed cell volume was about 50-55%. The diagnosis of megacolon was based on the history, clinical examination and radiograph.

Preoperatively, all the dogs were treated with fluid therapy and followed by prophylactic antibiotic using inj. Cefotaxime @ 50 mg/kg b.wt intravenously and inj. Ranitidine Hcl @ 0.2 mg/kg b.wt subcutaneously. Manual evacuation of the colon using warm water enemas and gentle extraction of faeces was removed but failed to evacuate completely. Subsequently, all the animals were subjected to the surgical procedure and followed up for a period of six months.

### Surgical procedure

General anaesthesia was achieved with the premedication inj. diazepam @ 0.5 mg/kg b.wt and induction with inj. Propofol @ 4 mg/kg b.wt intravenously. After endotracheal intubation, animal was maintained with 100% oxygenation and maintenance of anaesthesia by 3% isoflurane inhalation anaesthesia. Aseptic preparation of the surgical site was done and the animal was positioned in dorsal recumbency. On midventral incision, dilated colon was brought out with gentle traction and longitudinal incision was made on the antimesenteric border of transversal part of the colon and the impacted faecal mass was removed (Figure 2). The surgical site was lavaged with the metrinidazole solution and the colostomy incision was sutured by crushing followed by lembert suture pattern using polyglactin 910 size 1-0. Colopexy was performed by fixing the colon to the abdominal wall approximately half the distance between the linea alba and the sublumbar muscles by use of four longitudinal rows of simple interrupted suture pattern using size 1-0 polyglactin 910. The abdominal muscles were sutured using interlocking suture pattern with polyglactin 910 size 0. Subcutaneous sutures were closed using walking suture pattern and skin was closed using stainless steel skin staples.

Postoperatively, all the dogs were maintained with fluid therapy, inj. azithromycin @ 25 mg/kg b. wt for 7 days, inj. meloxicam @ 0.5 mg/kg b.wt for 3 days. On the 3<sup>rd</sup> postoperative day, all animals were started with liquid diet and following days were fed with chicken soup. And for the next day onwards all animals were advised to follow high fibre diet during the period of 30 days after surgery. Appetite and faeces of all animals were evaluated on a daily basis and submitted to radiographic evaluation after 30 days after surgery.



**Fig 1:** Radiographic image of markedly dilated colon in a dog with idiopathic megacolon



**Fig 2:** Gross appearance of megacolon before colostomy followed by manual extraction of

**Table 1:** Animal particulars presented for the study

S. No	Breed	Sex	Age	Body wt (kgs)	Duration
1.	Labrador Retriever	F	8	35	10 days
2.	German shepherd	M	5	32	2 weeks
3.	Non-Descript	F	7	15	1 month
4.	Spitz	F	5	9	3 weeks
5.	Non-Descript	F	6	13	45 days
6.	Labrador Retriever	M	9	29	2 months

### Results and Discussion

In the present study, megacolon was mostly seen in middle aged animals of different breeds with the age group ranging from 5 to 9 years and most of the cause was idiopathic since the animals were fed with home cooked food, leftover food along with chicken bones and decreased physical activities as they were kept in small flats or left out in the backyard and this is in agreement with the findings of Nemeth *et al.*, 2008 and Chandler 2013<sup>[5, 2]</sup> who stated that constipation caused by malnutrition or indigestible fibrous material (e.g. hair, cloth, plant material) or abrasives (e.g. bones, rocks) may become incorporated into the faecal mass causing the faeces to become excessively dry and hard. Around 83% of cases (5 dogs) were presented with prolonged constipation and 16% of cases (1 dog) with scanty faeces. Abdominal radiography of examined dogs showed markedly dilated colon with a diameter up to 20-30 cm extending from the epigastric region to the pelvic canal with stool retention and this is in accordance with Proki *et al.*, 2008<sup>[6]</sup> stated that radiography plays an important role in the diagnosis of megacolon which reveals abnormally dilated colon. According to Bertoy, 2002<sup>[1]</sup>, correction of dehydration, acid-base and electrolyte abnormalities if constipation has been prolonged as large intestine is accountable for absorption of water, salt and storage of faeces and this agrees in our study that all the animals were presented with constipation over a period of 10 days to 2 months resulting in intermittent vomiting, tenesmus, decreased appetite. Preoperatively, therapeutic management was achieved with fluid therapy and evacuation of the colon using stool softeners and enemas but failed to remove completely since the dilated colon was filled with impacted faecal mass extending from epigastric to the pelvic inlet. In the present case, colostomy was performed followed by manual extraction of the intestinal contents which also helped in the management of megacolon without recurrence. Post-operatively, all the animals were advised to follow high fibre diet with stool softeners and oral azithromycin for one week's period and resulted in defecation in all our cases and this is in accordance with Nemeth *et al.*, 2008 and Chandler 2013<sup>[5, 2]</sup>, who inferred that diet plays an important part of postoperative

treatment in which diet rich in fibre will attract water to the stool thus improving its consistency while azithromycin enhance the propulsive motility of colon and enable spontaneous defecation.

To conclude that the long-term effectiveness of c colostomy olonotomy with manual extraction of retained faeces with intense postoperative treatment in canine megacolon resulted in excellent recovery and all the animal showed no recurrence during the follow up period up to six months.

### **Conclusion**

To conclude that the long-term effectiveness of colonotomy with manual extraction of retained faeces with intense postoperative treatment in canine megacolon resulted in excellent recovery and all the animal showed no recurrence during the follow up period upto six months.

### **Acknowledgement**

Authors are thankful to the Dean and Department of Veterinary Surgery and Radiology, Rajiv Gandhi Institute of Veterinary Education and Research, Puducherry, India, for providing all the facilities and permission to publish this article.

### **References**

1. Bertoy RW. Megacolon in the cat. *The Veterinary Clinics Small Animal Practice*. 2002;32:901-911.
2. Chandler M. Focus on nutrition: dietary management of gastrointestinal disease. *Compend Contin Educ Vet*. 2013;35:E1-E3.
3. Foley P. Constipation, tenesmus, dyschezia, and fecal incontinence. In: Ettinger SJ, Feldman EC, Côté E, eds. *Textbook of Veterinary Internal Medicine*. 8th ed. St. Louis, MO: Elsevier; c2017. p: 171-174.
4. Meier-Ruge WA, Müller-Lobeck H, Stoss F, Bruder E. The pathogenesis of idiopathic megacolon, *Eur J Gastroenterol Hepatol*. 2006;18:1209-1215.
5. Nemeth T, Solymosi N, Balka G. Long-term results of subtotal colectomy for acquired hypertrophic megacolon in eight dogs. *J Small Anim Pract*. 2008;12:618-24.
6. Prokic B, Todorovic V, Drndarevic N, Vignjevic S, Dikic D, Nikolic I. Idiopathic and secondary acquired megacolon in dogs is associated with diminished vasoactive intestinal polypeptide innervation of the affected colon. *Acta Vet*. 2008;59:53-68.
7. Tim T, Danielle GM, Ine SC, Emily C, Martin S. Radiographic diameter of the colon in normal and constipated cats and in cats with megacolon. *Veterinary Radiology & Ultrasound*. 2011;52:516-520.