CASE REPORT

MEGACOLON IN A YOUNG CAT POSSIBLY DUE TO NEUROLOGICAL DEFICITS

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ABSTRACT. Ginger, about one year old domestic shorthaired cat with paresis was reported with constipation. Enema and laxatives prior to presentation was not effective. On palpation of the abdomen, a long tubular mass was palpated in the left caudal abdomen. Radiographic diagnosis of the megacolon was made and a subtotal colectomy was planned for the cat. A ventral mid-line celiotomy was made to explore the abdomen. Exploration revealed ascending, transverse and descending colon including the caecum found to be markedly distended due to faecal stasis. Following standard technique, a subtotal colectomy was performed. The cat recovered well after surgery without any complication. The owner reported that Ginger was doing well but died about seven months after surgery. Carcass was not available for necropsy. By clinical examination, diagnostic investigation and surgical exploration, other causes of megacolon were ruled out. The cat was about one year old with a short duration of illness. Without a definite history and by ruling out other causes, neurologic trauma was attributed as the probable cause of constipation and megacolon in the present case.

Keywords: cat, paresis, celiotomy, megacolon, subtotal colectomy

INTRODUCTION

Megacolon is the persistent increased large intestinal diameter and hypomotility associated with severe constipation diagnosed most often in cats. Megacolon is a pathological condition associated with failure to normally void faeces. It may be the result of a congenital or acquired condition occurring secondary to chronic inertia and outlet obstruction. Causes of colonic inertia may be prolonged distention, neurologic trauma, congenital dysfunction, endocrine disease, behavioural abnormalities or idiopathic. Outlet obstruction can be caused by pelvic fracture malunion, large intestinal strictures or neoplasia, anal atresia or stricture, compressive extraluminal masses, foreign bodies or improper diet. Middle aged or older cats are most commonly diagnosed with idiopathic megacolon (Hedlund, 2002). In one report, megacolon in 62% of cats was classified as idiopathic; 23% had pelvic

stenosis, 6% had neurologic disorders, and 5% were Manx (Washabau and Hasler, 1997). Hence, the incidence of megacolon due to neurological disorders is less common. This report describes megacolon in a young cat with hind limb paresis.

Past History

Ginger, a male domestic short haired cat was found as a feral cat one year ago and when found had very limited use of his hind limbs. Ginger was presented with myiasis around his anus, problems defecating, twitching of his face prior to presentation, and intermittently spinning in circles and paresis of his hind limbs. His appetite was normal at this time. Pain sensation and withdrawal of both hind limbs were present however, the left hind- paw was ulcerated and the owner thought it was due to self-mutilation. Radiographs revealed no obvious fractures of his pelvis, bones of hind limbs or vertebrae. The owner treated him with enemas, which did not proved to be very effective.

CASE HISTORY

Ginger was presented to the Small Animal Clinic of the Veterinary Teaching Hospital, School of Veterinary Medicine, Faculty of Medical Sciences, The University of the West Indies with the presenting complaint of being constipated for approximately one week. The history at this time was that the cat had a decreasing appetite for at least one week. Since the cat did not appear to be urinating normally, the owner would manually express the cat's bladder twice daily. He was being fed predominantly cat chow and tuna.

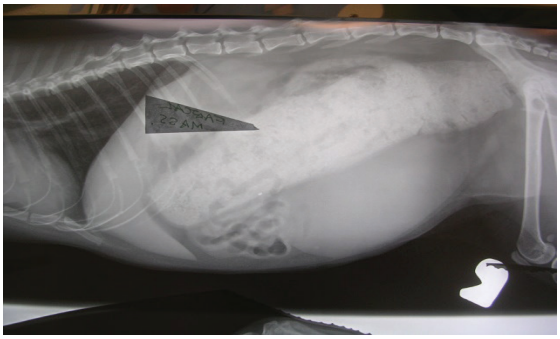
Prior to presentation the owner tried soapy water enemas and oral laxatives for about three days with no response. He weighed 3.8 kg and on physical examination his temperature was 38.8 °C, respiratory rate was 40 breaths per minute and pulse rate was 240 beats per minute. His dentition appeared to be that of a young cat as there was no sign of plaque, gingivitis or damaged/missing teeth. The only neurological abnormalities found at that time were poor placing of his hind limbs. The cat appeared to be visual and able to eat normally. Hydration status was normal. All superficial lymph nodes appeared normal in size, mucous membranes were pink and moist. The cat did, however, appear to be a bit depressed. The urinary bladder was distended and easily expressed. He was observed to be biting at his paw while hospitalised. On further palpation of the abdomen a long tubular mass was palpated in the left caudal abdomen and to a lesser extent in the right caudal abdomen. Differential diagnoses were: faecal impaction, neuropathy and neoplasia. Diagnostics involving a complete blood count, serum biochemistry and abdominal, pelvic and spinal radiographs were ordered. Haematology revealed neutrophilia due to inflammation and a thrombocytopaenia. Serum biochemistry values were within normal limits.

Right lateral and ventrodorsal radiographs of the abdomen revealed faecal impaction of the ascending, transverse and descending colon. No orthopaedic abnormalities were noted on radiography.

The urinary bladder was also found to be distended (Figures 1 and 2). A radiographic diagnosis of megacolon was made and a subtotal colectomy was planned for the cat. Due to the severity of the megacolon and the extent of the impaction it was thought that further medical treatment would not have been beneficial to the cat, as well as the fact that the enemas did not give the animal any relief.

Surgical management

Cefotaxime 100 mg was administered by the intravenous route pre-surgically. The cat was premedicated with midazolam at 0.2 mg/kg, morphine at 0.2 mg/kg and ketamine at 5 mg/kg intramuscularly. Anaesthesia was induced with propofol and maintained with Isoflurane in oxygen. Surgical preparation of the patient and site was done by adapting the standard technique. A ventral mid-line celiotomy was made to explore the abdomen. The ascending, transverse and descending colon including the cecum were found to be markedly distended due to faecal stasis (Figure 3). The distal small intestine, cecum and colon were isolated with saline-moistened laparotomy sponges. Resection sites were identified as the distal ileum and distal colon. Since the faeces could not be "milked" completely into the segment of the colon to be resected, colotomy was performed to empty the contents (Figure 4). The mesenteric blood vessels connected with the segment to be resected were ligated using 2-0 Vicryl and transected. After clamping with intestinal forceps, resection was done at the distal ileum and distal colon. Lumen size disparity (Figure 5) was corrected by spatulating the smaller lumen at its antimesenteric border. Anastamosis was done with single layer sutures using 3-0 polydiaxanone (PDS) in a simple interrupted fashion and the mesenteric defect was closed with 3-0 polydiaxanone with a continuous suture pattern (Figure 6). Isolated intestine was thoroughly lavaged. Gloves and instruments were changed and the abdomen was lavaged with warm sterile saline. The anastamotic site was wrapped with omentum and the abdominal incision was closed by the standard technique. Post operatively the cat was administered cefotaxime for 10 days and intravenous fluids for three days. The cat ate well post-



Figures 1 & 2. Preoperative lateral and ventrodorsal radiographs of the abdomen. Note distended ascending, transverse and descending colon and the urinary bladder.

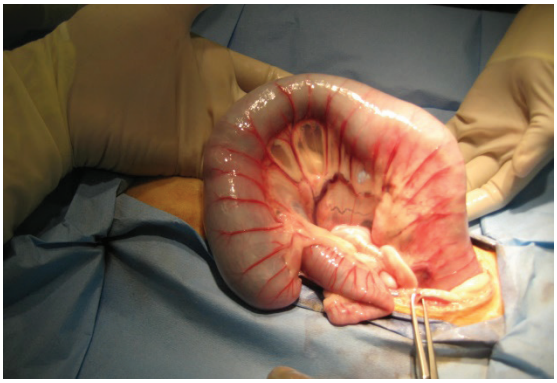


Figure 3. Intra-operative photograph of the subtotal colectomy procedure. Note marked distension of the colon and caecum.

Figure 4. Intra-operative photograph of the subtotal colectomy procedure. Note colotomy to permit evacuation of hard faeces from colon.

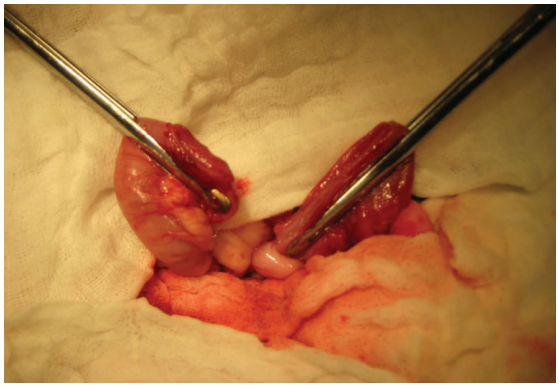


Figure 5. Intra-operative photograph of the subtotal colectomy procedure. Note disparity in lumen size after resection of colon.

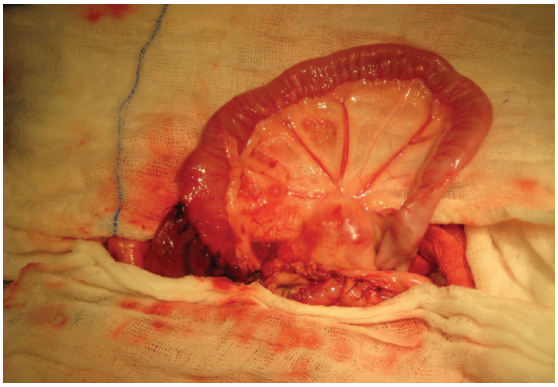


Figure 6. Intra-operative photograph of the subtotal colectomy procedure. Note the completed anastomosis.

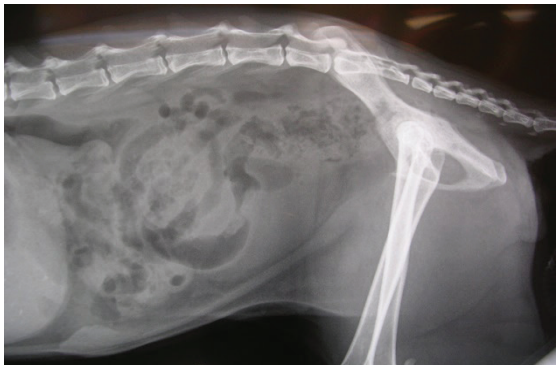


Figure 7. Lateral abdominal radiograph taken two weeks post-operatively. Note the normal radiographic study.

operatively. Skin sutures were removed ten days after surgery and the cat discharged on the following day.

The cat was discharged on a diet of soft food and the owner advised to closely monitor the cat's bowel movement. The owner was told that diarrhoea might occur post-operatively which did occur for about a week but partly resolved shortly after this time. Two weeks post operatively radiographs revealed no radiographic evidence of faecal stasis (Figure 7).

Three months after surgery the owner reported that the cat was doing well, bright, alert and responsive, eating and drinking normally and passing soft to normal stool and urinating normally. The owner reported the recurrence of slight twitching of the face.

The owner reported that Ginger died about seven months after surgery. Six weeks prior to death the owner found that his appetite decreased by about 25% and there was also a slight reduction in the activity level. However, the exact cause of death could not be ascertained as the carcass was not available for necropsy.

DISCUSSION

According to Hedlund (2002) middle-aged or older cats are most commonly diagnosed with idiopathic megacolon with a mean age of approximately five to seven and a half years. However, in this case, the cat was about one year old with a short duration of illness suggesting the cause could have been the result of neurologic trauma. Even though there were signs of hind-limb paresis which could be due to suspected trauma to the spinal cord or nerves, there was no evidence of pelvic fracture with malunion or sacro-caudal spinal/vertebral trauma. During surgery, other causes such as intramural, mural colonic or recto-anal obstructive lesions were ruled out. The depression and loss of appetite seen may have been due to the absorption of bacterial toxins (Sherding, 1994). Medical management suggested as per Simpson and Else (1991) include soapy water enema and oral laxatives. But in this case it did not help because of severe constipation and the extent of the colon affected as seen during surgery. Further, according to Webb (1985) most cases of medical treatment fail and surgical removal of the colon should be considered. In the present case surgical correction was decided as the prior medical treatment had failed. The ileocolic sphincter could not be preserved in this case due to the extent of the distention and the possible inertia, hence, subtotal colectomy with iliocolic anastamosis was preferred (Greenfield, 1991; Sweet *et al.*, 1994). Although there was marked luminal disparity of the resected ends of the intestine, an end-to-end anastomosis was performed by spatulating the smaller lumen at its antimesenteric border as suggested by Hedlund (2002) and Williams (2012). In spite of the colonic distention being very severe, the cat exhibited only mild symptoms of slight depression and loss of appetite for three days prior to surgery. This may have accounted for the cat's quick recovery from the illness after surgery. Since the cat was an abandoned one, the present owner found the cat with hind-limb paresis and in the absence of a definite history the cause of the megacolon in this case could not be confirmed. In most cats, the cause of

megacolon is not determined (Bright, 1986). Neuromuscular disorders, including diseases of the lumbosacral spinal cord may lead to constipation by interfering with colonic innervation or by impairing the ability of the cat to assume the normal defecation stance (Sherding, 1994). Hence, neurologic trauma could be attributed as the probable cause of constipation and megacolon in the present case.

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