

CONSTIPATION & OBSTIPATION: SURGERY OF THE COLON

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INTRODUCTION

The functions of the large bowel include:

- Storage of faeces
- Absorption of
 - water,
 - volatile fatty acids,
 - electrolytes.

Faecal transit time through the large bowel is typically 12 – 24hrs but this can increase temporarily without long term consequences; prolongation of the transit time however results in faecal dehydration and 'concretion'. Conditions that significantly increase transit time result in constipation whilst chronically increased transit time is termed obstipation. Obstipation may lead to colonic dilation; in the dog, this is a reversible change but in the cat the colonic enlargement rarely resolves and is termed megacolon. Aetiologies of obstipation include:

- **Mechanical or obstructive causes:** include pelvic stenosis resulting from neoplastic disease, trauma or intrinsic obstruction (e.g. colonic torsion, rectal neoplasia)
- **Congenital megacolon:** are associated with anomalies such as aganglionosis
- **Neurological disease:** motility disorders due to intrinsic or extrinsic neurogenic causes including tail pull injuries, dysautonomia etc.
- **Inflammatory bowel disease:** is an important cause of obstipation in the dog; its role is less certain in the cat

- **Idiopathiopathic megacolon:** is probably the most common form of acquired megacolon seen in the cat and occurs most often in the middle to older aged male patients.

CLINICAL SIGNS

Most patients with obstipation will demonstrate signs of defaecatory tenesmus of varying duration and intensity; additional side effects of obstipation in some cases may include lethargy, anorexia, dehydration and occasionally emesis.

DIAGNOSIS

A thorough history, physical exam including neurological assessment and diagnostic imaging are usually essential to determine the underlying cause of the obstipation.

MEDICAL STRATEGIES

Initial therapy is directed toward re-establishing normal fluid and electrolyte abnormalities.

1. Enemas: Symptomatic relief can be given to relieve constipation by use of warm water enemas with water soluble jelly lubrication included or with manual breakdown of faeces with the finger or an instrument. An attempt to empty the faeces-filled colon can be made using soapy solutions or proprietary enemas including:

- sodium citrate
- lactulose
- dioctyl sodium sulphosuccinate
- phosphate enemas (not cats)

2. Laxatives: Following this, stool softeners are sometimes beneficial as is dietary fibre supplementation; a low residue diet may be attempted.

Bulking agents

- Psyllium
- Bran
- Ispaghula Husk
- Sterculia

- w/d & r/d

Lubricating agents

- Mineral oil

Hyperosmotic

- Lactulose
- (Magnesium sulphate)

3. Prokinetics: Prokinetics such as cisapride may be useful although are rarely a long term solution to the problem.

- Cisapride
- Bethanechol
- Ranitidine

SURGICAL TREATMENT

1. Obstructive Diseases

- **Stenosis of the pelvic canal:** injuries to the pelvis may result in stenosis of the pelvic canal and ultimately to the development of megacolon. Correction of these changes within 3 months will permit resolution of the colonic dilation however more chronic injuries may dictate subtotal colectomy.
- **Neoplastic disease:** tumour masses within the posterior abdomen or pelvis can cause severe colorectal compression and require surgical removal via either a posterior laparotomy or perineal approach.
- **Colorectal disease:** intrinsic lesions of the lower bowel (e.g. colonic torsion, rectal neoplasia) are managed by resection of the affected bowel (e.g. posterior laparotomy, rectal pull out, dorsal approach etc)

2. Megacolon - subtotal colectomy:

95-98% of the colon may be removed with or without the removal of the ileocolic valve; this is the procedure of choice for management of congenital, mechanical and idiopathic megacolon in cats.

- **Preparation** of the bowel (oral antibiotics, multiple enemas) is not necessary but perioperative administration of a broad spectrum antibiotic such as clavulanate or a second or third generation cephalosporin (parenteral form) is

used prophylactically. Metronidazole or cephalosporin is given i.v. at a dosage rate for each route of 20 mg/kg and 15 mg/kg respectively.

- **Approach** - a ventral midline caudal abdominal incision allows exploration of the abdominal cavity and exteriorization of the colon. The appropriate (left and middle) colic vessels are isolated, ligated and transected to free the segment of colon to be removed. The removal of the ileocolic valve is at the discretion of the surgeon. If it is removed, a 0.5 - 1.0 cm segment of descending colon just cranial to the colorectal junction is saved to anastomose to the ileum (ileocolostomy). When the ileocolic valve is retained, a short 1-2 cm segment of ascending colon is preserved to accommodate a colocolostomy. An end-to-end anastomosis is used to re-establish bowel continuity using 4-0 suture in a simple interrupted appositional suture pattern. Luminal disparity (more commonly seen with an ileocolostomy) is addressed without partial closure. When leaving the ileocolic valve, it can be more difficult to pull the proximal segment of colon down to the distal piece of descending colon for anastomosis. An omental patch is placed over the anastomotic line followed by irrigation of the abdominal cavity with copious amounts of warm saline. Leaving the ileocolic valve intact is strongly preferred by the author.
- **Postoperative care** - following subtotal colectomy some degree of tenesmus may be present during the immediate postoperative period (3-5 days). A semi-solid stool will form over a period of a few days. Colonic surgery carries a greater risk of postoperative infections but perioperative prophylactic antimicrobial therapy is sufficient to minimize this problem if care is taken to minimize intra-operative contamination. Monitoring closely for any signs of postoperative leakage peritonitis is mandatory especially during the first 24 - 72 hours postoperatively.
- **Prognosis** – although frequency may be slightly increased most cats will defaecate normally formed stools postoperatively; water intake is usually normal.

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