

# Feline Megacolon and Colonic Neoplasia

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## Megacolon

This occurs more frequently in cats than dogs and is usually seen in middle-aged to geriatric cats. The ascending, transverse, and descending colon are chronically large in diameter and filled with dry stool. A congenital form of the disease has been seen especially in Manx cats with rectal/anal atresia and a sacral spinal deformity. An acquired form of the disease has been seen secondary to mechanical obstruction caused by malunion of pelvic fractures that have not had surgical treatment. Mechanical obstructions such as those caused by pelvic fractures may be relieved by removal of the cause of the obstruction if the abnormality is corrected within approximately 6 months; beyond that time frame irreversible changes apparently occur within the myoneural structure of the colon and obstruction persists even if the cause is treated effectively. Another unusual cause of acquired megacolon reported on several occasions is obstruction caused by uterine horn remnants following ovariohysterectomy in the female. Constipation has also been reported as a presenting sign in animals that are hypercalcemic with primary hyperparathyroidism.

Idiopathic megacolon is the most common form of the disease seen in cats. This disease is thought to be caused by an abnormality in the smooth muscle of the colon. Investigators at the University of Pennsylvania have shown that the colon of affected cats does NOT have normal motility as a result of a muscular rather than nervous abnormality. Some have suggested that anything causing pain or discomfort that may inhibit the animal from defecating may be a predisposing cause. Such causes could be spinal, pelvic, or rear limb related. Whatever the cause, as the dry stool continues to accumulate, colonic distension causes irreversible change in colonic smooth muscle and nerves and colonic inertia results. Medical management is variably (charitable word) effective in my experience. Surgical treatment with subtotal colectomy has been a very rewarding procedure for owners AND their cats for this disease over the past 15 years.

### Clinical signs

Usually develop over a period of time. Males are apparently more commonly affected than females.

1. Constipation
2. Tenesmus
3. Obstipation
4. Anorexia, weight loss
5. Dehydration, weakness, vomiting (Electrolytes!!)
6. Combination of dry stool/diarrhea in some cases

Abdominal palpation, digital rectal examination, neurologic examination, and abdominal radiographs are performed to rule out concurrent disease such as neoplasia, strictures, or perineal hernias. Abdominal radiographs may help in identifying pelvic or spinal lesions. I recently performed colectomy in a 6 month old cat with apparent rectal stricture. IF you do find a perineal hernia on rectal exam which should be fixed first?? Probably depends on duration of signs, if relatively acute, I would fix the hernia first; if chronic I would perform colectomy and possibly later do perineal herniorrhaphy if needed. BE SURE THE ANIMAL HAS A PERINEAL REFLEX and normal anal tone before doing surgery. Since many of these cats are geriatric be sure to palpate their neck well and/or consider T4 levels to make sure the animal is not also hyperthyroid.

Interestingly, several female cats have been reported with megacolon caused by extramural obstruction as a result of stricture formation following ovariohysterectomy 4-6 weeks previously. The stricture in all cases has been reported to be caused by uterine horns remaining after incomplete ovariohysterectomy.

### Conservative/medical management

1. Minimum data base, Rule out Hypercalcemia as cause(Hyperparathyroidism)
2. Anesthesia/heavy sedation and empty colon with warm water or saline enemas. Colace or Surfak in the enema may be helpful as well as digital breakdown and removal of feces. Sponge forceps are very useful in severe cases to remove feces. Had one astute practitioner report that he successfully uses a "poole" suction tip (abdominal suction instrument) to effectively evacuate liquefied stool from the colon.
  - o High fiber diets such as W/D or R/D, R/D higher in insoluble fiber
7. Psyllium or canned pumpkin (1-3 tablespoons per meal) has been recommended
8. Petroleum jelly used by some clinicians as a laxative
9. Lactulose favored by some clinicians (but not cats!) 1 ml per cat q8-12h
10. Cisapride (0.5 mg/kg) or a total of 2.5-10 mg q8h or q12h may be successful and should be used concurrently with Lactulose. Available through compounding pharmacies.

Inevitably, many animals with megacolon begin to have episodes of obstipation closer and closer together and the owner, cat, and veterinarian tire of anesthetic episodes etc. If you sense the case headed this way and MOST do, consider saving the owner, cat, and you from further episodes and recommend surgery.

### **Subtotal colectomy**

We do not recommend enemas preoperatively, it's easier to control solid feces than watery feces at the time of surgery.

1. Plan on systemic antibiotic usage (cephalosporins and metronidazole) in the perioperative period as this is a contaminated procedure. 25-30 mg/kg of Kefzole IV during abdominal preparation immediately prior to surgery. We typically repeat administration 2x then stop unless contamination during surgery has been more than normal or NOT well controlled.
2. Anesthetize the cat and digitally clean out the rectum as much as possible.
3. A caudal ventral midline incision is made from the umbilicus to the pubis.
4. Placement of "Baby" Balfour abdominal retractors aids in exposure.
5. Empty the urinary bladder by expression or cystocentesis.
6. Ligate the Caudal mesenteric, Left and Middle colic, and Ileocecolic vessels. DO NOT make the mistake of trying to preserve the Caudal mesenteric vessels, this is likely to result in recurrence of disease because of failure to excise enough descending colon.
7. Stay close to the colon (between the mesenteric lymph nodes and ileocolic junction).
8. Milk feces away from the sites of proposed resection and apply "Baby" Doyen forceps to decrease contamination when the bowel is resected. PLACE at least 1 (2 are better) stay sutures in the caudal (distal) colon. The colon has a way of slipping out of the Doyen clamps and "stay" sutures are an added safety feature for retaining control of the distal colon; without them, if the colon retracts into the pelvic canal life gets difficult.
9. I remove the ileocecolic junction in all cases and perform an ileocolic anastomosis. Trying to preserve the ileocecolic junction seems ill-advised to me as the tension on the anastomosis increases and seemingly there is little benefit to preserving the junction. Some surgeons prefer to leave the cecum and perform a colocolic anastomosis; in those cases you leave approximately 2 cms of proximal colon to anastomose with the distal colon.
10. If you remove the ileocolic junction as I do, you may partially close the colon with one or two sutures OR cut the ileum on its antimesenteric border to make the two pieces of bowel (ileum and colon) more equal in size.
  - o Doing this allows accurate apposition of the ileum and colon. A one-layer approximating suture pattern using 4-0 on a tapered needle with polydioxanone is used for the anastomosis. Some surgeons now use a continuous closure for intestinal anastomosis.
11. Leak test the anastomosis with normal saline and a needle and syringe. Lavage the abdomen well with warm saline and close routinely.
12. Do another digital rectal exam and remove any residual feces from the rectum while the cat is still under anesthesia.

Monitor postoperatively for fever and successful passage of stools. Expect multiple bowel movements (4-6) initially as the cat has lost its reservoir capacity. Some cats lose weight for the first 2-4 weeks postoperatively but usually regain afterwards.

The consistency of the stool is usually watery to mucoid for the first 3-6 weeks and it gradually becomes more solid over weeks and numbers of bowel movements decrease over weeks to months.; over-all the net result is a happy owner and happy cat.

If recurrence of constipation occurs after surgery I would initially revert to the same medical management techniques mentioned above (Lactulose). If a colocolic anastomosis has been performed I would plan on reoperating and removing the ileocolic junction. Finally, excessive colon rostral to the pubis can also cause recurrent signs.

### **Feline colonic neoplasia**

An uncommon occurring disease in cats when compared to dogs. Most information is from an AMC review article published in JAVMA in 1997 (Slawienski et al) where 46 cases were reviewed.

- Weight loss, anorexia, hematochezia
- Mean age of cats= 12.5 years
- 52% had a palpable abdominal mass at presentation
- Ultrasound localized mass to the intestine in 84% of cases, hard to differentiate large from small intestine
- No characteristic blood findings
- Pathology
  - o Adenocarcinoma (21), usually focal and obstructive
  - o Lymphosarcoma, (19) infiltrative
  - o Mast cell (4)
- Metastasis to local and distal areas common however prolonged survival seen in some patients, nodes, liver, colonic lymphatics
- I would use prophylactic antibiotic therapy given immediately preoperatively in these animals such as cephalosporin at 22mg/kg and metronidazole Discontinue after 2nd dose unless the animal becomes febrile
- Subtotal colectomy or colonic resection and anastomosis with 3-5 cm margins indicated
- Incisional/excisional biopsy of nodes
- Doxorubicin showed a "good" response in some animals following surgery (limited number)