

Feline Constipation: Getting Crap Out of a Cat

Learning Objectives

1. Provide clinicians with an appreciation for the scope and severity of constipation in cats.
2. Outline differentials and present a logical work-up for constipation in cats.
3. Discuss a variety of therapies, historical, translational, and recently published, for these cases.

Introduction

Constipation is not usually thought of as a terminal disease...unless you are a cat. In that case, constipation, and its potential progression to obstipation and megacolon, can eventually result in euthanasia in a tragic number of cases. The list of causes of feline constipation is far longer than the list of cures, or even effective treatments. Gastrointestinal motility is impacted (no pun intended) by a myriad of conditions external to the GI tract as well as within the GI tract itself. To make matters even more complicated – we are, after all, talking about cats – the clinical manifestation of feline constipation can show itself far away from the source, with vomiting a common clinical presentation. This presentation addresses the common problem of feline constipation and the potential progression to obstipation and megacolon. Early recognition and effective intervention will be emphasized. Therapeutic considerations will include both anecdotal reports and evidence-based medicine.

Clinical Presentation

History and Physical Examination

A bit of constipation, acute in onset and short in duration, can afflict any cat, may not be recognized by the owner, or may not progress to the point where clinical signs motivate the owner to seek out veterinary care. Although diarrhea usually makes itself relatively obvious, whether in the litter box or on the living room floor, the dry, hard feces that makes its way out of a constipated cat may appear quite normal, or at least potentially normal, having likely dried out after-the-fact, especially when coated with litter. The other clinical manifestations of constipation are the ones that more often prompt an owner to seek veterinary care: vomiting, decreased appetite and/or water intake, decreased social interactions, and vocalization when attempting to defecate would all be consistent with feline constipation.

Evaluation of the cat begins with signalment and presenting complaint – which as mentioned, may or may not involve the area, or even the “end” of interest. As our profession is becoming more and more aware of the subtleties and complexities of our feline patients, our history-taking is becoming more sophisticated and complete. Onset, duration, progression, other associated clinical signs, history of disease or surgery, medication use and response, a complete dietary history including supplements, probiotics, nutraceuticals, water intake, potential stressors or changes, perceived or known changes in weight or body condition, activity level, normal ambulation and activity/interactions, indoor/outdoor and environmental conditions are all important aspects of the case. Also of particular interest will be a historical assessment of the litter box arrangement (number and actual structure of the box, location, type of litter), litter box behavior if witnessed (ease of entry, any vocalization, straining, number of unproductive attempts) and the character of the stool (a sample would help, keeping in mind that there

may be some degree of desiccation with storage). It will be important to try and discern between descriptions of unproductive attempts at defecation and straining to urinate, the two problems may look quite similar to many owners. Again, this is not meant to be an exhaustive list of historical questions as the client's answers may well lead the clinician down important and productive tangents or expansions.

A complete physical examination should be given for any cat presented for veterinary care. Avoid the temptation to focus on the presumed source of the problem, but instead, examine the patient for every normal aspect of any feline physical exam, and the abnormalities should then make themselves obvious. As with the history taking for feline patients, the appropriate physical examination has become more thorough and complex, including a fundic exam (ex. evidence of granulomatous lesions in FIP cats), hydration status and blood pressure, hair coat and cervical palpation, body weight, body condition score, and muscle condition, and of course assessment of both neurologic status and orthopedic condition are no longer the realm of the canine. Obviously a careful examination of the perianal area, anal sacs, hip joints, and colonic palpation is critical. It is rare that we perform a rectal examination on an awake cat, although some tolerate a lubricated and gentle pinky-finger for assessment of anal tone. With sedation or anesthesia a more complete rectal examination can reveal masses, strictures, or other causes of mechanical obstruction, as well as more complete evaluation of anal sacs.

Manx cats appear over-represented for megacolon, due in large part to a condition of sacrocaudal dysgenesis. These cats may demonstrate a number of neurologic or neuromuscular abnormalities, with colonic dysfunction being just one manifestation. Similar circumstances are present in cats with dysautonomia, where the GI tract is just one of many systems impacted by a generalized dysfunction of a portion of the nervous system.

Differentials

A common cause of constipation in the cat is dehydration: secondary to a disease process (CKD, DM, hyperthyroidism); a result of vomiting and/or diarrhea; diuretic drug use; restricted access to water; voluntarily decreased intake (stress, behavioral, environmental); pain (inflammation, trauma, disease within the oral cavity, abdominal disease, colitis, anal sac or rectal disease); decreased mobility or painful ambulation (musculoskeletal); dysfunctional thirst mechanism (CNS disease). Any physical obstruction (tumor or mass, stricture, foreign body, fracture, intussusception, herniation) or functional obstruction (motility disorder, either secondary to GI inflammation, spinal cord disease, electrolyte imbalance, or primary, such as with megacolon or dysautonomia) will result in constipation. Colonic motility is also negatively impacted by a variety of drugs and medications. Obese cats appear at risk for constipation, probably for multiple reasons.

Pathophysiology and Diagnostics

The progression from constipation to megacolon occurs as normal colonic function is lost. The loss may be secondary to a persistent inability to move stool (obstruction) and includes secondary colonic hypertrophy, but in many cases an actual cause cannot be identified, hence the term, idiopathic megacolon. If there is an identifiable inciting cause for a cat's constipation, such as a pelvic fracture, or metabolic electrolyte abnormality, it appears that time is of the essence and early intervention/correction gives the cat the best prognosis for resolution.

Because the list of differentials for a constipated cat is extensive, the appropriate diagnostic work-up could be equally lengthy and involved. After a complete history and physical examination the obvious starting point is a biochemical profile, CBC, urinalysis, total T4, and abdominal radiographs. Follow-up diagnostic steps will depend largely on the clinical and diagnostic picture that is formed up to this point: colonic contrast with barium or air for suspected stricture; colonoscopy for infiltrative mucosal disease;

CT or MRI for suspected neurologic disease; skeletal radiographs for fractures or arthritic conditions, abdominal ultrasound for extra-luminal masses, enlarged lymph nodes, or other systemic diseases, etc.

Non-Specific Therapy

Since dehydration is almost always a component of the presentation with a constipated cat it is one of the most important aspects of non-specific therapy to be addressed. Depending on how the fluid therapy is going to be administered (IV, Subcutaneous, orally, feeding tube) it also represents an opportunity to address electrolyte balance, with potassium being critical for normal neuromuscular function. Various physical exam parameters are used to estimate percent dehydration, and then a variety of formulas exist to calculate the necessary volume of fluid administration to both correct dehydration and meet maintenance requirements. Different types of fluids are appropriate for rehydration, maintenance, and the make-up and degree of electrolyte balance. Clinicians are referred to the recent Davis et al. publication (JAAHA 2013) for a complete discussion of these various parameters. One of the simplest ways to increase fluid intake by cats is to encourage the feeding of canned foods, which are composed of 70% or more of water.

Specific Therapy

Rehydration is the first priority. Once the cat is well on the way to a normal hydration status, with correction of electrolytes and acid-base status, steps can be taken to remove the feces from the colon – remembering that early intervention is an important step towards avoiding significant long-term consequences. At Colorado State University many cases of mild to moderate constipation have been addressed with warm-water retention enemas (2-3 over the course of 12-24 hours, 5-10 ml/kg) followed by gentle manual extraction. In some cases this can be accomplished with gentle "milking" of the initial fecal ball followed by successful voluntary defecation. If not successful, brief general anesthesia and more persistent effort, combined with rectal lubrication and assistance is needed. In the worst cases, sponge forceps have been required.

More recently, manual de-obstipation is avoided if at all possible, and a variety of other interventions should be considered.

Laxatives are a potentially useful tool, and classified as lubricating (mineral oil), emollient (Colace [™], Surfax [™]), stimulating (Dulcolax [™]) or bulk-forming (cellulose), although most are considered only mildly efficacious, stimulating fluid transport and thereby improving the hydration and passage of feces. At CSU we administer most of these as part of an enema, frequently pre-treating with Cerenia [™], instead of attempting to get them into the cat orally. Cathartics are used to increase colonic motility and generally believed to be more effective than laxatives. Lactulose is the most frequently used cathartic at CSU, and frequently is administered orally.

The reader is referred to Scherk et al. Vet Focus 2013 p.36-37 for an excellent summary table of the available products and dosing instructions, briefly summarized below (adapted from Dr. Susan Little, Atlantic Coast Veterinary Conference 2012).

Pediatric rectal suppositories

- DSS (dioctyl sodium sulfosuccinate, Colace [™])
- Dulcolax [™] (bisacodyl)

Enema solutions [10-12 Fr red rubber catheter]

- Warm tap water (5-10 ml/kg)
- DSS (5-10 ml/cat)

Mineral oil (5-10 ml/cat, do not administer with DSS)
Lactulose (5-10 ml/cat); Kristlose (lactulose crystals mixed with food or water)

Fleet (sodium phosphate) is CONTRAINDICATED!

GoLYTELY™, Colyte™ Miralax PG3350 (polyethylene glycol); NE tube, 6-10 ml/kg/hr

Most recently, thanks to the efforts of Dr. Anthony Carr, we employ polyethylene glycol (Miralax, PG3350), trickled through an NE tube (6-10 ml/kg/hr). Although it may take up to 12-18 hours (Carr AP & Gaunt MC, ACVIM 2010), the success rate with this minimally invasive protocol makes it well worth the attempt and the patience.

Once the immediate problem has been resolved, follow-up care may include dietary intervention, oral lactulose to effect, and pharmaceutical manipulation.

Dietary fiber is characterized as soluble-easily fermentable and insoluble-poorly fermentable, although sources of fiber are rarely only one or the other, but a combination of both properties. Insoluble fiber adds bulk, distends the colon, and in that way, increases colonic water content and stimulates colonic motility. Soluble fiber is metabolized (fermentable) by colonic bacteria into short-chain fatty acids, a preferred nutrient for gastrointestinal mucosal cells. Metamcil (psyllium; 1-4 tsp mixed with food q12-24hr)

Canned pumpkin is a popular choice for insoluble fiber and it is not unusual for cats to ingest it voluntarily, but it does not actually provide as much fiber content as either of the other 2 choices. Royal Canin Fiber Response is a psyllium-enriched dry extruded diet that has shown promise as a dietary therapy for constipation in cats (Freiche V et al. ECVIM 2010).

Pharmacologic intervention is best achieved with Cisapride (Propulsid™; 5 mg/cat PO q8-12hr). In a number of cats we have had anecdotal success with ranitidine.

Acupuncture can be considered if an experienced clinician is available to administer the treatment.

Summary

1. Recognition and active intervention should be early and effortful.
2. Hydration is the single most important ingredient in the therapeutic plan.
3. Consider options (e.g. E-tube) and alternatives (e.g. CRI Golytely) and for addressing the problem.

Suggested Reading

Scherk M, Boothe D, Halling K, et al. Constipation in the Cat: Thinking Outside the Gut. Vet Focus Special Edition, Royal Canin, <http://vetfocus.royalcanin.com/en/>

Freiche V, Houston D, Weese H, et al. Uncontrolled study assessing the impact of a psyllium-enriched extruded dry diet on faecal consistency in cats with constipation. J Fel Med Surg 13:903-11, 2011.

Trevail T, Gunn-Moore D, Carrera I, et al. Radiographic diameter of the colon in normal and constipated cats and in cats with megacolon. Vet Radiol Ultrasound 52:516-20, 2011.

Bertoy RW. Megacolon in the cat. *Vet Clin North Am Small Anim Pract* 32:901-15, 2002.

Washabau RJ, Holt D. Pathogenesis, diagnosis, and therapy of feline idiopathic megacolon. *Vet Clin North Am Small Anim Pract* 29:589-603, 1999.