

Clinical Nutritional Management of Constipation in Cats

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Definition

Constipation is characterized by retention of hard feces within the colon and rectum with, infrequent, or difficult defecation. Constipation progresses to obstipation as feces become excessively hard and impacted within the colon. Megacolon refers to dilation and hypomotility of the colon, which results in severe constipation and may be caused by colonic smooth muscle or neurologic abnormalities.'

Pathophysiology

Constipation can occur with any clinical or subclinical condition that impairs the movement of feces through the large intestine especially colon. When feces are retained within the colon for an extended period of time, water continues to be absorbed, resulting in a progressively harder and drier fecal mass. Constipation can also occur secondary to rectocolonic obstruction (such as pelvic fracture, neoplasia, diverticulum), painful defecation (anal wounds, orthopedic disorders). environmental factors (dirty litter box, inactivity), medications (opioids, diuretics, others), neuromuscular dysfunction, fluid and electrolyte abnormalities, ingestion of hair or foreign material, or inadequate water intake.

Signalment

Constipation can occur at any age, and has not been reported to have a breed or sex predilection. Increased frequency of megacolon, has been reported in middle-aged male cats, with domestic short-haired, domestic long-haired, and Siamese being the most commonly affected breeds.'

Key Diagnostic Tools and Measures

Diagnosis of constipation is generally made during routine history collection and physical examination during the presentation to the clinics. Clinical signs may include tenesmus, anorexia, vomiting, weight loss, lethargy, and poor coat condition. Rectal and abdominal palpation will likely reveal firm stool within the rectum and colon. Abdominal radiographs can be used to further define the extent of the constipation, and to rule out megacolon, foreign bodies, and pelvic or spinal lesions that may be contributing to the constipation. Serum chemistry, thyroxine (T4), complete blood count, and urinalysis are also indicated to rule out underlying metabolic abnormalities.

Common Comorbidities

Common comorbidities are generally predisposing factors of constipation. Conditions that cause pain on defecation (such as anorectal and orthopedic disorders), rectocolonic obstruction (such

as pelvic fractures or neoplasia) or neuromuscular dysfunction (such as lumbosacral spinal cord disease, or dysautonomia), are commonly seen with constipation.

For disease conditions associated with colonic obstruction or partial obstruction, feeding a high-fiber, fecal bulking diet may be contraindicated. In these cases, feeding a highly digestible diet to decrease fecal mass is more appropriate. When constipation is seen with fluid or electrolyte abnormalities (such as hypokalemia or hypercalcemia) correction of the hydration status and electrolyte imbalances should take priority in the treatment plan.

Key Nutrient Modifications

Increased dietary fiber and moisture are the key nutrient modifications that can be made to address mild to moderate cases of constipation in cats. For cats with megacolon, feeding a highly digestible diet to decrease fecal mass is recommended. Megacolon and obstruction or partial obstruction of the colon should be ruled out prior to initiating a high-fiber diet or fiber supplementation.

Fiber is classified as soluble or insoluble. Soluble fiber has the ability to hold water, which helps to increase the moisture content of dry feces and normalize gastrointestinal transit time. Some soluble fibers are fermentable and support the growth of normal gastrointestinal flora and production of short chain fatty acids that provide energy to colonocytes and stimulate longitudinal colonic smooth muscle contractions. Insoluble fiber has a low ability to hold water and is not readily degraded by gastrointestinal bacteria. Insoluble fiber adds bulk to the feces which can help to stimulate colonic motility. Many cats with constipation are dehydrated; therefore, increasing moisture in the diet can help to maintain appropriate hydration and help to soften the stool.

Recommended Ranges of Key Nutrients

Nutrient	%DM	g/100kcal	% DM	g/100kcal
	Recommended dietary level		Minimum dietary requirement	
Crude fiber	5-8	1.3-5.5	n/a	n/a

Modified intake of these nutrients may help address metabolic alterations induced by disease states. The recommended dietary composition is shown as percent of dietary dry matter (DM) and as g or mg per 100 kcal metabolizable energy. All other essential nutrients should meet normal requirements adjusted for life stage, lifestyle and energy intake. "Nutrient requirement for adult animals as determined by the Association of American Feed Control Officials." The crude fiber analysis includes most insoluble fibers, but does not include so fibers. Therefore, crude fiber has limited usefulness when eval...Psyllium is a supplement that can be a good use to the diet in amounts of 1-4 teaspoons per day.

- If a source of soluble fiber is needed, Benefiber (guar gum) can be added to the diet in amounts of ½-2 teaspoons per day.
- If a source of insoluble fiber is needed, coarse wheat bran can be added to the diet in amounts of 1-4 teaspoons per day.

The amount of supplementation needed to correct constipation vary within individual patients; therefore, it is generally recommended to start at the low end of the dosage range, and titrate to effect. Adjustments to fiber dosage should be made every 5 to 7 days as needed until the desired affect is achieved. Some fiber supplements are sweetened with fructose sucrose (which contains fructose). Because fructose is poorly metabolized by cats, formulations containing fructose or sucrose should

be avoided. Supplements that contain xylitol should also be avoided.

Treats - Pumpkin is commonly recommended for fiber supplementation in cats. The amount of fiber provided by canned pumpkin (0.4g/tablespoon) is small compared with the levels that are provided by supplements such as psyllium (9 g/tablespoon). Therefore, pumpkin alone may not provide the amount of fiber needed to see a clinical response; but may serve as a good supplemental treat.

- Care should be taken to ensure that unbalanced treats are limited to 10% of the total daily calories. One tablespoon of canned pumpkin provides 5 kcal.

Diet Recommendations -

Slightly heat food to enhance food odor and texture. Add a low-sodium chicken or beef broth to the food to increase both moisture and palatability (limit to $\leq 10\%$ of the total daily calories, and avoid broths made with onion or garlic). If adding water to food to increase moisture, start by adding a small amount and then slowly increase over 1 to 2 weeks to allow the patient to become accustomed to the change in dietary moisture and texture. Canned foods and/or the addition of water to dry food are recommended. Foods should provide moderate dietary fiber with mixed soluble and insoluble fiber sources. Veterinary therapeutic foods designed for diabetes mellitus and weight loss may provide increased dietary fiber levels. In general, weight loss foods will provide a greater proportion of the fiber from an insoluble source. If megacolon is present, a low-fiber/highly digestible diet, such as those designed for gastrointestinal disease, is recommended.

Medical Management

Medical management should be aimed at eliminating or controlling any identified underlying conditions. If a large fecal mass is present, enema treatment and/or manual extraction may be required. If dehydration or electrolyte abnormalities are identified, proper fluid therapy is indicated. If dietary therapy alone is not successful in preventing

recurrence of constipation, oral laxative medications can be implemented. Generally, a mild emollient laxative such as docusate sodium, or osmotic laxative such as lactulose is recommended to help soften the stool. Pro-motility therapy, such as cisapride, may also be beneficial in cats with megacolon or decreased colonic motility. Intractable cases of megacolon may require colectomy.

Client Education Points

Proper hydration is important to the management of constipation. Free access to fresh water should be provided at all times. Water intake can also be enhanced by feeding canned foods or adding two to three parts water to one part of dry kibble.

Many cats will avoid using a dirty litter box, which can contribute to constipation; therefore, daily cleaning of the litter box (with thorough cleaning and replacement of litter weekly) is important in the management of constipation.

Transitioning to a higher-fiber diet or adding a fiber supplement should be done slowly over 4 days to one week.

- The level of fiber supplementation needed can vary from pet to pet, so adjustments may be required to achieve the desired response.