Chronic Large Bowel Diarrheas
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The most commonly diagnosed chronic large bowel diseases causing diarrhea in dogs in our practice are so-called irritable bowel syndrome (IBS) (which is not the same as irritable bowel disease in people), fiber-responsive colonic dysfunction (which is probably a subset of irritable bowel syndrome), dietary intolerance (by which I am referring to allergic as well as non-allergic dietary problems), clostridial colitis (which might be better called “tylosin-responsive colitis”), parasites and fungal infections (i.e., histoplasmosis and pythiosis). The most commonly diagnosed large bowel diseases in cats in our practice are fiber-responsive disease, dietary intolerance, antibiotic-responsive colitis and inflammatory bowel disease (IBD), especially lymphocytic-plasmacytic infiltrates. Fortunately, colonic histoplasmosis is much less common in cats than it is in dogs.

The first concern is parasites. Whipworms can be very difficult to demonstrate on fecal flotation. Direct fecal examination will be more useful than fecal flotation if the flotation solution is not dense enough to ensure that the whipworm ova will float. Whipworms can be very easily missed by fecal flotation; therefore, it is appropriate to treat any dog with chronic large bowel disease with fenbendazole.

If the diarrhea persists after eliminating parasites from consideration, the next question is whether to try a therapeutic trial or perform tests. If the patient is hypoalbuminemic or has lost substantial weight, then extensive diagnostics aimed at infiltrative diseases, especially histoplasmosis, pythiosis, and cancer are indicated. Otherwise, a therapeutic trial (e.g., dietary therapy or empirical antibiotic therapy) plus modest diagnostics (e.g., fecal examination) may be particularly helpful. It is worth noting that many of the more common diseases affecting the colon are better diagnosed with a therapeutic trial than with an extensive diagnostic work up that includes blood tests and endoscopy/biopsy. The main therapeutic trials are usually a fiber-supplemented diet, an elimination diet, anthelmintics, and/or antibiotics (e.g., tylosin or amoxicillin). Good therapeutic trials are better at diagnosing some of the more common large bowel disorders of dogs than are endoscopic examinations and biopsies.

Clostridial Colitis
Clostridial colitis might better be called “antibiotic-responsive colitis”. It is a very important disease in the dog, but we are not sure how important or common it is in the cat. We think that it is caused by toxigenic strains of Clostridium perfringens. However, even when a toxigenic strain of Clostridium perfringens is established in the colon, it does not generally produce disease unless there is sufficient toxin being produced due to upregulation of toxin production in the bacteria. Toxigenic strains upregulate the amount of enterotoxin produced when they sporulate, and it is this toxin which damages the colonic epithelium and produces diarrhea.

Diagnosing clostridial colitis is not as “easy” as it was a few years ago. One cannot reliably diagnose clostridial colitis by finding spores in the feces on fecal cytology, performing quantitative cultures for Clostridium perfringens, or assaying for clostridial enterotoxin in the feces. Looking for fecal spores is an especially easy screening procedure, and the spores can be detected with a variety of stains. However, just as the disease can wax and wane unexpectedly, the presence and number of spores may likewise vary. Biopsy is not that helpful; there may or may not be histologic changes in the colonic mucosa in animals with clostridial colitis. Besides, the histologic lesions seen with clostridial colitis are nonspecific, and cannot be reliably differentiated from IBD or dietary allergy/intolerance. We used to think that the most definitive method of diagnosing clostridial colitis was to assay the feces for the presence of toxin; however, this is relatively expensive and is no more sensitive or specific than other tests. Many of us currently just treat for the disease and observe the clinical response. While this approach can cause a problem when there are two things happening concurrently (e.g., clostridial colitis plus dietary intolerance), it seems to currently be one of the better ways to diagnose clostridial colitis. Response to amoxicillin or tylosin may be one of the best ways to presumptively diagnose clostridial colitis. Many patients with clostridial colitis do not respond to metronidazole.
**Tylosin** is an antibiotic that seems to be consistently effective against *Clostridium perfringens*. This is a wettable powder that is used to treat poultry. Animals that respond to tylosin usually do so within 3–7 days. The dose is 10–40 mg/kg bid. Some patients will need treatment for the rest of their lives while others can be slowly weaned off the drug. Tylosin tends to have an unpleasant taste and needs to be mixed into the food, and sometimes it is better to put it into capsules and give it that way instead of putting it on the food. Amoxicillin is also effective in almost all animals with clostridial colitis. Many animals with chronic clostridial colitis that require antimicrobial therapy can be well controlled with one treatment of amoxicillin or tylosin every 2–3 days.

Metronidazole is very effective against anaerobic bacteria in general, but metronidazole is inconsistently effective in animals with clostridial colitis, possibly because metronidazole does not reliably achieve therapeutic levels throughout the feces. Some dogs with clostridial colitis respond to **fiber supplementation**, which makes sense because fiber will usually remain relatively intact until it reaches the colon where it may have profound effects on the microenvironment of the colonic bacterial flora. The goal is not necessarily to eradicate *Clostridium perfringens* from the animal (you probably can’t do that even if you wanted to); rather, it is to prevent the bacteria from elaborating and releasing its toxins. The preferred long term therapy of clostridial colitis is to maintain the animal on a high fiber diet which controls signs and not have to give antibiotics; however, not all animals can achieve this level of control.

We will use the term “dietary-responsive” to include both dietary allergy (an immune process) and dietary intolerance (a non-immune process). **Dietary-responsive disease** is more common than many suspect, especially in cats with chronic large bowel disease. You cannot count on finding eosinophils in the colonic mucosa of animals with dietary allergies; most patients with dietary intolerance have minimal histologic changes or have nonspecific lymphocytic and/or plasmacytic and/or eosinophilic infiltrates. Because the histologic findings are nonspecific, it is often preferable to try elimination diets prior to performing colonoscopy. The biggest problem in these patients is finding an effective diet. We often see cases in which the right thing was done (i.e., an elimination diet was used), but was so poorly planned or implemented that the effort was wasted. Most of the time, all that is needed is to carefully investigate the history and see what the patient has eaten in the past. However, sometimes it is difficult to find a diet that is “right” for a particular patient. This might be because you do not know if the problem is an allergy or a non-allergic intolerance. In some cases, all of our well-planned hypoallergenic diets failed but a chance try at some commercial brand works. It is easy to do a poor job of feeding a “hypoallergenic” diet and thereby make the client so discouraged with dietary therapy that they end up requesting costly work ups when a good dietary trial done at the beginning would have worked. Also, if you do a thorough work up and do not find a reasonable cause of the diarrhea, it is probably a dietary intolerance or allergy, and you will have to simply try diet after diet until you finally find the right one.

**Histiocytic ulcerative colitis**, also known as “Boxer colitis” is being seen more commonly now than it was 5–10 years ago. First described about 30 years ago, it was a horrible, progressive disease of young Boxers (and sometimes related breeds, such as the French Bulldog) that invariably had a terrible prognosis. The signs are those of severe large bowel disease (lots of hematochezia and fecal mucus) plus weight loss. Diagnosis is made histologically by finding PAS-filled macrophages in the mucosa. Recently, it has been discovered that this is an antibiotic-responsive disease. Enrofloxacin seems to be particularly effective but any number of antibiotics will work. The biggest problems are that 1) many people (clients and veterinarians) are reluctant to biopsy the dogs because they assume that any disease so severe must have a bad prognosis, and 2) many pathologists have never seen it and miss it, even when it is fairly obvious to the experienced eye. It is best to biopsy the dog instead of giving empirical enrofloxacin therapy since other treatable diseases may be present (e.g., histoplasmosis) that also can be successfully treated if therapy is begun in a timely fashion. If antibiotics are given, it is important to treat for several weeks to ensure eradication of the bacteria lest resistant strains be selected for and allowed to cause a relapse that is more difficult to control than the initial presentation.