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Colitis

WHAT IS COLITIS?

In brief "colitis" is inflammation of the colon. The colon is another term for the large or lower intestine. For those who do not know the lower intestine from the upper intestine, a short tour is in order:

Food is chewed in the mouth and swallowed. At this point the goal is to convert the food from what was in the bowl, to a liquid slurry that will flow evenly through the intestinal tract bathing the vast absorptive surfaces lower down. The first step is to liquefy the food and chewing begins this process. Adding saliva mixes in some enzymes to further begin the breakdown of food structure. The breakdown of food into the liquid slurry is called *DIGESTION*.

From the mouth and throat food travels through the chest via a tube called the esophagus. This is a well-coordinated muscular movement rather than just natural flow or gravity. The esophagus connects to the stomach where the food completes its breakdown process. The stomach is capable of not only serious grinding but also injects strong acid into the mixture. Gradually, the food mixture is pushed out of the stomach into the first portion of the small intestine. At the end of this process, only the most un-digestible material is left in the stomach. It is either vomited up or a single large stomach contraction (called a "house keeper contraction") moves this material into the small intestine as well.

The small intestine is divided into 3 parts: the duodenum, jejunum and ileum. The food at this point is in the duodenum where digestion completes. The duodenum is where the bile duct and pancreatic duct are located. As food enters the duodenum, bile flows into the mixture to neutralize the stomach acid and help dissolve the dietary fats in the mixture. Pancreatic enzymes are mixed in to digest the starches. From here on in, the name of the game switches from DIGESTION to *ABSORPTION*.

The food mixture flows along the small intestine where it is absorbed into the body. Bacteria live in the small intestine symbiotically, producing vitamins and assisting in food breakdown as the food passes by.

After the long journey (this usually takes many hours) through the small intestine, most of what is left in the tract is un-digestible fibers and any material that was not absorbed earlier. The material is still quite fluid-like at this point, and it now enters the colon.

THE FUNCTION OF THE COLON:

The colon has three functions: absorption of water, storage of stool, and further digestion of unabsorbed nutrients. The bacterial population in the colon is about 10 times higher than that of the small intestine.

These bacteria take un-digestible fibers and digest them into three biochemical compounds: acetate, propionate, and butyrate (in addition, they produce assorted gases and pigments to create stool as we know it). These biochemical compounds nourish the colon cells (which only live about a week) and control colon pH so that excreted toxins will not be reabsorbed.

WHAT ARE THE SYMPTOMS OF COLITIS?

In classifying diarrhea, it is important to determine whether the problem relates to the small intestine (diarrhea originating here is more serious) or large intestine. Diarrheas of the large intestine have the following common characteristics:

- They are not associated with weight loss
- They are associated with straining and sense of sudden urgency
- They often involve fresh blood in the stool
- They often involve slime or mucus in the stool
- They often involve a stool that starts normal and finishes loose
- They involve stool quality that is more gooey or slimy than watery

A diagnosis of colitis is generally straight forward given the above classic findings, although how one should proceed depends on the course of the signs. Is the problem acute (i.e. suddenly there) or chronic (been happening for several weeks regularly) or episodic (happens then goes away then happens again)?

COLITIS SUDDENLY (ACUTE COLITIS):

A pet that has symptoms of colitis suddenly probably has a "stress related" colitis (common after boarding, moving, severe weather or other change) or a "dietary indiscretion" related colitis (related to treats, a change in food or raiding the garbage). These cases are generally minor and can be cleared with a short course of and/or dietary therapy. Parasites can also cause colitis and may have to be ruled out as well (through fecal examination).

COLITIS CHRONICALLY OR EPISODICALLY (CHRONIC COLITIS):

If your pet has had symptoms of colitis for one month or more, a search for the actual cause of the colitis should be sought. The first move is to run a basic "database". This should include blood chemistry, a white and red cell profile (a CBC), and at least one fecal test for parasites. Cats should have their viral status (feline leukemia virus and feline immunodeficiency virus) confirmed. A test for pancreatic ability to produce digestive enzymes may also be in order. A fecal "smear" or "cytology" test where the bacteria of the stool sample (as

opposed to worm content) is examined microscopically can help rule out pathogenic bacteria that can cause colitis (Clostridial organisms especially).
In the dog, whipworms are difficult to confirm by fecal test (the test detects worm eggs and whipworms only periodically release their eggs). Because of this, it may be prudent to de-worm the dog for whipworms and see if the problem resolves. If response to a short course of simple treatment is short-lived and if blood testing (the blood chemistry and CBC) is normal, then a colonoscopy with biopsies will probably be necessary to reach a diagnosis. It is very important to rule out IRRITABLE BOWEL SYNDROME at this point, which will mimic colitis but be related to psychological stress and tissue sampling is the only way to do this.

TREATMENT OR MANAGEMENT OF COLITIS

Colitis is best managed when its cause is known and specific therapy can be instituted. When this is not possible, symptomatic management is often attempted. The following are therapeutic medications and strategies that can be helpful in the treatment of colitis.

Tylosin Tartrate: This medication has anti-bacterial properties in the colon and helps to eliminate infections that cause large amount of toxins to be produced, damaging and irritating the colon.

Metronidazole: This medication has anti-inflammatory properties in the large intestine as well as ability to kill harmful organisms such as Clostridia and giardia.

Sulfasalazine: This medication consists of a sulfa antibiotic bound to a salicylate anti-inflammatory. The sulfa bond protects the anti-inflammatory medication until it gets to the large intestine thus saving the anti-inflammatory effect for the disease of the large intestine. This is a very effective medication but is typically given three times a day, which can be an inconvenience. Cats are sensitive to salicylates, thus this medication is primarily used in dogs.

Dietary Fiber: The role of fiber in colitis is confusing, as there is an assortment of fiber preparations (soluble fibers, insoluble fibers, and mixtures). In general, colitis is felt to be a "fiber-responsive" disease. Fibers are broken down into nutrients for colon cells and also for food for beneficial colon bacteria.

Elimination Diet: Colitis can result from a "food intolerance" (an example would be lactose intolerance, which many people suffer). Intolerances can result from dyes, preservatives, contaminants or even natural proteins in the food. Similarly, colitis can result from an actual food allergy. The solution for these intolerances is the feeding a "pure" diet, ideally a home cooked food. These are made with carbohydrates and proteins that are novel or new to the patient. An 8-10 week diet course trial is typically needed and no other chews or treats can be offered during the time of the trial. Food allergy cannot be diagnosed by blood test or skin test. At this time, response to an elimination diet is the only test for food allergy or intolerance. Itchy skin is another common manifestation of food allergy or intolerance.

Treating for Clostridium: Clostridial organisms are a group of anaerobic bacteria responsible for such unpleasant conditions as tetanus, botulism, and gangrene. There are Clostridial organisms that normally live in the large intestine but they do not cause any trouble unless some stressful event or diet change allows them to over grow. Once they are present in large numbers, the toxins that they produce become significant and can cause colitis. The diagnosis of Clostridial disease is complicated. A fecal smear may show the presence of Clostridial organisms but that does not mean they are producing toxin. Further tests (such as the "reverse passive latex antigen test" and the "ELISA" test) are available, but the accuracy of these tests is in dispute. Often a course of a Clostridium-killing antibiotic is used as a test. Such antibiotics include: amoxicillin, tylosin, metronidazole (which has other colitis-helping properties as well), and clindamycin.

Prednisone: Prednisone is the cornerstone of treatment for Inflammatory Bowel Disease and inflammatory bowel disease must be diagnosed by colonic biopsy. Sometimes a trial course of this medication is suggested for colitis.

Information adapted from "Answering Questions About Colitis" by Wendy C. Brooks, DVM, DABVP