

Inflammatory Bowel Disease

ABOUT THE DIAGNOSIS

CAUSE: The gastrointestinal (GI) tract of dogs and cats is like that of humans: it is a continuous tube made up of the esophagus, stomach, and part of the small intestine (the upper GI tract) and the rest of the small intestine and all of the large intestine or colon (the lower GI tract). The GI tract functions to store, digest, and absorb food materials and liquids and to produce waste material to be passed out of the body.

Inflammatory bowel disease (IBD) is a group of disorders of the GI system that is characterized by an abnormal accumulation of inflammatory cells, typically various types of white blood cells, within the walls of the GI tract. As a result of this cellular infiltration within the structure of the stomach and intestine, the movement, digestion, and absorption of food and liquids becomes abnormal and incomplete. Both the upper and lower tracts are commonly affected in dogs, but cats more commonly suffer from IBD involving the upper GI tract. The various forms of IBD are classified by the location within the GI tract and the predominant types of white blood cells that are involved, a determination that is made from a biopsy of the intestinal tissue. Symptoms produced from the disease vary with the form and location of the IBD.

It is important to note that inflammatory bowel disease is a specific form of gastrointestinal disease in which the walls of the stomach and/or intestine are thickened due to the inappropriate infiltration of white blood cells. IBD is a long-standing problem—for example, one well-known type of IBD in humans is Crohn's disease. IBD is not a mild, self-resolving irritation of the intestine, such as from indigestion, even though the name "inflammatory bowel disease" might suggest some kind of transient stomach upset. Rather, IBD is a scientific name based on the characteristic microscopic appearance of affected intestinal tissue on biopsy (the inflammation is at the microscopic level).

IBD is the most common cause of persistent (chronic) vomiting and diarrhea in dogs and cats, meaning vomiting and/or diarrhea that has occurred at least twice per week for months or years. IBD is most often seen in middle-aged animals, but some rare forms occur in dogs and cats that are less than 2 years old. Breeds that may be at an increased risk for the development of IBD include the German shepherd, boxer, rottweiler, Yorkshire terrier, cocker spaniel, shar-pei, soft-coated wheaten terrier, basenji, lundehund, French bulldog, Irish setter, and purebred cats.

The cause of IBD is currently unknown but is most likely multifactorial. This means that several triggers may combine to cause IBD. Factors that are thought to be involved in triggering IBD include:

- Bacterial infections of the GI tract
- Parasites in the GI tract
- Dietary factors, including allergens (ingredients in food that dogs or cats do not tolerate)
- Individual genetic susceptibility
- Drug reactions
- Immune system abnormalities

In cats specifically, IBD has also been associated with inflammatory liver and pancreatic diseases. We also know that in rare cases in cats, severe long-standing IBD can progress to lymphoma, a type of cancer of the GI tract.

DIAGNOSIS: From the information presented above, one essential point stands out: IBD is a reactive process, and the surest

way to help a dog or cat that has IBD is to identify the trigger and eliminate it. Doing so involves a step-wise process based on diagnostic tests.

Symptoms of IBD can vary from patient to patient and are often common to several other diseases. The most common signs of IBD include chronic intermittent vomiting, diarrhea, and weight loss. Some animals will also develop changes in appetite (increase or decrease), sluggishness, increased gas, abdominal pain, straining to pass stool, dark or bloody stools, and mucus-coated stools.

If a suspicion exists for IBD based on your pet's symptoms, your veterinarian will begin by asking you several questions to try to determine if IBD or another type of problem altogether could be responsible for the symptoms. You should provide whatever information you have when you answer these questions, which often include: the types of symptoms you have observed, the length of time they have been occurring, effects on vital functions such as appetite and fecal elimination (soft, watery, dark, bloody, or mucus-like? How frequent? Abnormal since when?), current diet, recent changes in diet or treats, and any current medications or supplements you are giving your pet. This information can also help your veterinarian differentiate between IBD and other disorders and, furthermore, between upper and lower GI tract IBD. These determinations lead to the best-targeted treatment options.

When examining your pet, your veterinarian will look for some of the changes that can occur with IBD, which may include poor body condition, dehydration, and poor hair coat. Be sure to point out if you know whether these are recent changes or simply the way your pet has always been. When your veterinarian feels the abdomen or belly of your pet, abdominal pain, thickened intestinal loops, and enlarged lymph nodes may be apparent to the vet's fingertips. If IBD is still suspected by your veterinarian, further testing will be recommended.

Preliminary tests that screen for disorders that mimic—but are not—IBD are essential. Finding these IBD impostors may allow for definitive elimination of symptoms without resorting to intestinal biopsies. Preliminary tests include at least 3 stool (feces, excrement) samples each taken at least 1 day apart, and analyzed for parasites such as *Giardia*. A urinalysis and standard blood profile are necessary in all patients suspected of possibly having IBD: this includes a complete blood count, serum biochemistry profile, thyroid profile in dogs and cats older than 6 years of age, and testing for feline leukemia virus (FeLV) and feline immunodeficiency virus (FIV). A food trial (switching to a different food or a hypoallergenic diet for several weeks), bacterial cultures of feces, specialized tests to assess the production of digestive enzymes (trypsin-like immunoreactivity), and imaging techniques (x-rays and ultrasound) are some of the more commonly performed tests, and your veterinarian will select among these based on the particulars of your pet's case. IBD cannot be detected on a blood test. The purpose of these tests is to identify other diseases that could otherwise be mistaken for IBD; to track the effects of IBD if it is present (and determine the severity of the case); and to assess organ function in anticipation of medications, to be sure there aren't any reasons for withholding certain treatments.

The only way to confirm IBD is to obtain a biopsy of the intestinal tract. As in people, biopsies can be obtained via endoscopy (a long, flexible tube with a tiny camera on the end is directed into the GI tract through the mouth [upper GI endoscopy] or anus [lower GI endoscopy]), laparoscopy (minimally-invasive surgery in

which an instrument with a camera on the end enters into the abdomen through a small incision through the body wall), or surgery (an operation allows the surgeon to see the entire intestine inside the abdomen and obtain tissue samples). Samples taken via an endoscope are smaller and do not include all of the layers of the GI tract segment being sampled, but the procedure is minimally invasive. On the other hand, full-thickness samples taken during a surgical operation can be larger, they include all of the layers of the GI tract segment, and the full length of the intestine can be seen, but an operation is much more invasive than the scoping types of procedures. Therefore, given the particulars of your pet and your own feelings regarding these advantages and drawbacks, you and your veterinarian should discuss whether a scoping type of procedure or surgery is best for your pet. Note that unlike humans, animals require general anesthesia for scoping procedures (the same anesthesia as for surgery).

It is important to keep in mind that taking a biopsy, whether via endoscope or surgery, is not itself curative for IBD. The biopsy only identifies IBD, and this presents a list of possible triggers (see above) but often does not pinpoint a single cause that can be eradicated. Therefore, empirical treatment (medications given based on the veterinarian's analysis to date) are almost always given, and well warranted, for days to weeks *prior* to any type of biopsy procedure. These should be medications that do not interfere with future biopsy results (for example, cortisone-like medications such as prednisone should not be given before a biopsy). If medications such as deworming treatments (fenbendazole, for example), probiotics (such as FortiFlora), antibiotics to eliminate bacterial overgrowth (such as tylosin or metronidazole), or prescription diets fail to work, then endoscopy or surgery is performed for intestinal biopsies. The biopsies either confirm IBD or identify another, different intestinal illness ranging from certain types of persistent intestinal infections to intestinal cancer. When IBD is confirmed by the laboratory analyzing the biopsy, the search for the trigger resumes. In other words, much progress can be made trying treatment approaches (without cortisone) for 1-4 weeks prior to proceeding to a biopsy, and the purpose of the biopsy is to make sure that nothing other than IBD is present that would explain the lack of improvement with treatments to date. After IBD has been confirmed by the laboratory analysis of the intestinal biopsies, the next step is to continue to search for the combination of diet and medications that best controls or eliminates the symptoms.

LIVING WITH THE DIAGNOSIS

In its most severe forms, IBD is a potentially serious, life-threatening illness, but in milder forms it may only produce intermittent symptoms of vomiting or diarrhea and otherwise not affect a pet's quality of life. The long-term outlook for recovery (prognosis) varies dramatically with the underlying cause of the disease, the presence of secondary complications, the administration of appropriate medications and treatments, and response to medications. Some cases will completely resolve if treated appropriately, whereas other cases do poorly despite all of the appropriate measures. With a pet that has IBD, it is very important to keep all recommended follow-up appointments and tests with your veterinarian in order to monitor the progression of disease and make any needed medication or treatment adjustments. At home, by monitoring your pet's weight, as well as changes in appetite, behavior, and frequency of symptoms (vomiting and diarrhea), you will learn helpful information to bring to your next appointment.

It is important to realize that IBD can be a permanent disorder. Some exceptions exist, including IBD caused by parasites or by food allergy, where the trigger can be eliminated and a medication-free, normal asymptomatic lifestyle is the result. Therefore, the

tests that are recommended in order to identify any triggers of IBD are extremely important. Without them, a reversible problem may be overlooked, and symptoms could persist needlessly. If no underlying triggers are found, which is often the case, the condition is considered "idiopathic" or "without identifiable cause." In such cases, treatment is symptomatic, meaning that medications are given in order to make an animal feel better and to try to slow the disease process over time (see below).

Give all prescribed medications as directed by your veterinarian. These medications are essential in controlling the disease as well as improving the quality of your pet's life. Some of these medications may be required for the rest of a pet's life.

An appropriate diet is essential in the treatment of IBD. Sometimes it is necessary to try several diets, one at a time for several weeks each, to find one that is both palatable (acceptable) and effective at reducing symptoms. You should discuss an ideal diet for your pet with your veterinarian and feed only the recommended foods. If your pet is no longer willing to eat the special diet, contact your veterinarian prior to changing foods. An adequate level of nutrition is extremely important in the well-being of all pets, but especially so for those who have IBD.

If immunosuppressive drugs are being used in your pet's treatment plan, there can be an increased risk for the development of secondary infections. Signs to watch for are described below.

TREATMENT

The goals of treating an animal with IBD are to minimize the frequency of symptoms (vomiting and/or diarrhea), find a food source that is well tolerated, maintain a good level of nutrition, prevent or rapidly identify and treat complications (i.e., esophageal irritation from vomiting, rectal prolapse from straining to pass stool), and improve the overall quality of the pet's life.

Treatment of IBD must be based on the individual patient, the severity of the symptoms, the underlying cause, and the secondary diseases that may be involved. In every patient, however, all drugs and foods that can precipitate IBD should be identified and removed, and all concurrent or underlying diseases should be diagnosed and treated.

Patients with severe symptoms of IBD will likely need to be hospitalized initially while intravenous (IV) fluids are given to correct dehydration and electrolyte abnormalities and medications are initiated. If hospitalization is not required, your veterinarian will start your pet on medications and treatments that can be given at home.

An appropriate diet is essential in the management of IBD. Depending on your pet's needs, diets that are easy to digest, hypoallergenic, or that have altered fiber contents may be recommended. In most hypoallergenic diets, a highly digestible protein source that the animal has never been exposed to before is the base of the diet (rabbit, venison, whitefish, duck, or kangaroo are commonly used), and additives and preservatives are avoided as much as possible. Some diets use the theory of hydrolyzed proteins (protein molecules within the diet ingredients are broken down into very small particles), which are thought to be too small for the immune system to recognize and react against. There are several veterinary prescription diets available that can be chosen specifically for your pet. Home-made diets can also be used and personalized to your pet's needs with the aid of a veterinary nutritionist (Diplomate of the American College of Veterinary Nutrition; directory at www.acvn.org).

Note that with all diet trials, it is essential that the chosen diet be the only food source given to your pet during the trial period (usually 6 to 8 weeks). All treats of any kind must be avoided during the trial (meaning no milkbones, rawhides, chew sticks, flavored vitamins and heartworm medications, or foods used for hiding medications). Otherwise, even one nibble can trigger an allergic reaction that is a

common component of IBD, and the food trial becomes unhelpful. It is a similar situation to children or adults who are allergic to gluten or lactose or other food ingredients: anything that can trigger the allergic response must not be consumed.

There are several different types of medications available that can help improve or control the symptoms of IBD. Antibiotics or probiotics can be used for normalizing the GI tract flora (bacterial population). Antiparasitics are often used for removing unwanted GI protozoal organisms. Antiinflammatory and immunosuppressive drugs can inhibit the immune system's abnormal response on the GI tract and to help control the influx of white blood cells and the inflammation they cause within the GI tract. These drugs can be used solely or in combination depending on the severity of the case and response to therapy.

DOs

- Realize that the proper management of a pet with IBD requires significant commitment on your part—time, emotional, and financial. This is true both initially, when trying to determine whether any of the multiple possible underlying triggers for IBD is present or not, and in the long term, when giving medications at home and returning for recheck appointments.
- Realize that serious and life-threatening complications can arise if IBD is severe, left untreated, or treated inappropriately.
- Keep all recommended follow-up appointments with your veterinarian since they are essential in monitoring your pet's response to medications and treatments.
- Contact your veterinarian if your pet's symptoms change, worsen, or any new problems arise.
- Have your veterinarian or veterinary technician show you how to handle, give, and recognize the possible side effects of, all medications.
- Handle and give all medications exactly as directed by your veterinarian. If you believe your pet is having side effects from any medications or you are finding it very difficult to medicate your animal, contact your veterinarian for advice before discontinuing the treatment.
- If you are making a homemade diet for your pet, always consult with a veterinary nutritionist in order to properly balance the diet for your pet's needs.
- Ask your veterinarian questions about information you do not understand.
- A second opinion from a veterinary internal medicine specialist (Diplomate of the American College of Veterinary Internal Medicine; directories at www.acvim.org and www.ecvim-ca.org) can be helpful for additional information and the latest treatment options.
- Realize that in its worst forms, IBD may be a precancerous condition, and that this likelihood increases when cats with IBD have a positive test result for feline leukemia virus (FeLV), or when cats or dogs have worsening weight loss and increasingly severe vomiting and diarrhea despite treatment.
- Consider humane euthanasia if your pet has a biopsy-confirmed diagnosis of severe IBD and is not responding to all possible treatments, especially if you feel he or she is suffering or has a poor quality of life. However, jumping to the conclusion that IBD "is not responding to treatment" when a biopsy has not been performed and other tests and treatments have not been attempted is premature.

DON'Ts

- Do not postpone a visit to your veterinarian if you observe any symptoms of illness or of IBD since early diagnosis and treatment can aid in preventing serious and life-threatening

complications and improving the quality of your pet's life. The initial screening tests can often be performed on an outpatient basis.

- Do not give any medications that are not prescribed by your veterinarian for the specific animal in question and for this exact condition.
- Do not stop any treatments or medications if your animal is feeling better without consulting with your veterinarian first. The improvement may be due to the medication and require ongoing treatment.
- Do not assume that all sources of information are accurate or complete (e.g., Internet sites, outdated pamphlets or books, pet store workers, and friends). Ask your veterinarian for recommended sources of information.

WHEN TO CALL YOUR VETERINARIAN

- If you are unable to give medications as prescribed or if you require a prescription refill.
- When you have any questions or concerns related to your pet's continual treatment plan or current status.

SIGNS TO WATCH FOR

- General signs and symptoms of illness, which can include changes in appetite (increase or decrease), weight loss, decrease in activity, depression, dull or poorly kept coat, and changes in behavior such as hiding, may indicate additional or different disorders, or sometimes adverse reactions to medications. In all instances, it is worth contacting your veterinarian to review these symptoms and determine whether a treatment change, and/or recheck visit, could be warranted.
- Symptoms of IBD, which can include frequent vomiting and diarrhea and weight loss.
- Signs of secondary infections. If you notice any straining to urinate or blood in the urine, red or irritated skin, or coughing and nasal discharge, your pet could be developing a secondary infection in the urinary tract, skin, or respiratory tract, respectively. Any of these symptoms mean that a recheck visit should be scheduled in the next 24-48 hours.

ROUTINE FOLLOW-UP

- Since IBD is a serious disease that can deteriorate over time, it is very important to keep all recommended follow up appointments and tests with your veterinarian in order to monitor the progression of disease, document and treat any new problems that may arise, and make any needed medication adjustments. The interval of follow-up depends on severity of the IBD and response to treatment, and an approximate time interval until future recheck should be discussed at each visit.



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