Protein-Losing Enteropathy

ABOUT THE DIAGNOSIS

Protein-losing enteropathy (PLE) is the term used for describing any disease of the digestive system in which proteins from the blood plasma are lost into the intestinal tract and evacuated in the feces. When the protein losses exceed the body's capacity to replenish them, the concentrations of the proteins in the blood fall below normal. Blood proteins act to maintain the fluid balance between the blood and other body elements and are also important in tissue healing, immune defense, coagulation (blood clotting), and many other processes. When the protein levels in the blood are too low, fluid begins to shift from the blood into the tissues and spaces of the body. This fluid shift can cause edema (fluid accumulation in the tissues of the dependent parts of the body, such as under the skin of the feet and legs) or effusions (fluid accumulation in body spaces, such as the abdomen and chest). Furthermore, the loss of blood proteins can lead to emaciation (severe, unintentional weight loss), immune deficiencies, increased risk of blood clots, and other problems.

There are many causes of protein-losing enteropathy. These include inflammatory and infectious diseases of the intestines, such as inflammatory bowel disease, parasites (worms, *Giardia*, and many others), and certain fungal diseases such as histoplasmosis; immune-mediated diseases, such as food allergies and gluten intolerance; long-standing partial intestinal obstructions, including those caused by foreign bodies or tumors; and disruption of the intestinal lymphatic flow called *lymphangiectasia*. Some causes of protein-losing enteropathy have a genetic component, even if the signs don't become evident until the animal is middle aged.

Weight loss is a prominent symptom of protein-losing enteropathies, but it may not be recognized because the belly can become enlarged due to fluid accumulation. Most dogs with protein-losing enteropathy also have diarrhea. Vomiting may sometimes occur. The other signs are related to the low protein levels. These include swelling of the dependent areas of the body such as the legs and scrotum. If fluid accumulates in the chest, breathing difficulty develops because the lungs do not have enough space to expand. The presence of one or some of these symptoms in a dog or cat brings up the possibility of protein-losing enteropathy and can prompt your veterinarian to recommend some tests to evaluate or confirm this disorder.

Routine blood profiles will show low levels of blood proteins—usually both the albumin and globulin fractions—in protein-losing enteropathy. However, blood tests do not evaluate intestinal function specifically. First, further testing is needed to eliminate other causes of low blood protein levels, because there are many causes of low blood protein levels, and then to determine which of the many causes of protein-losing enteropathy is present. The other common causes of very low protein levels are liver disease and kidney disease. A urinalysis and liver function tests help rule out these problems. Common causes of similar fluid accumulations despite normal blood protein levels include tumors and heart disease, and x-rays may be used to look for preliminary evidence of such disorders, especially if the blood protein level is only slightly decreased. If no evidence is found of disease external to the gastrointestinal tract, several laboratory tests can be used for narrowing the possible gastrointestinal causes, including repeated fecal (stool) tests for intestinal parasites. Often, however, a final diagnosis can only be made by putting an animal under general anesthesia, taking intestinal biopsies, and submitting the tissues for microscopic examination. Often, the biopsy is taken using an endoscope, which is a minimally-invasive procedure, but if the biopsy results are inconclusive (since endoscopic biopsy specimens are small and superficial), it may be necessary to obtain a further set of biopsies at a later date through abdominal surgery. Patients with protein-losing enteropathy who undergo abdominal surgery usually need a plasma transfusion beforehand, since plasma contains a high concentration of blood proteins and therefore helps offset the body's shortage of proteins needed for postoperative healing. Overall, confirming protein-losing enteropathy is a step-wise process that can be time-consuming, but which determines the best course of treatment and the outlook (prognosis) for recovery.

LIVING WITH THE DIAGNOSIS

The outlook for protein-losing enteropathy varies widely depending upon the specific cause. Some conditions are curable, but others require lifelong daily treatment at home with periodic rechecks. Still others are severe diseases, such as some types of cancer, which threaten the life of the pet.

TREATMENT

Specific treatment depends upon the cause of the protein-losing enteropathy. Some causes are curable, such as intestinal parasitism or obstructions caused by foreign bodies. Others require long-term treatment of the underlying condition. Intestinal lymphangiectasia, for example, is managed by feeding a low-fat diet and sometimes with treatment using corticosteroids (cortisone-like drugs). Other causes of protein-losing enteropathy such as immune-mediated intestinal diseases are managed with hypoallergenic diets and corticosteroids.

Supportive care may be required, depending on your pet's symptoms. If fluid accumulation in the belly impairs breathing, it may need to be drained. Often, a low dose of aspirin or another drug is given to prevent blood clots from forming abnormally. In most cases, vitamin B supplementation is required at least temporarily. Dietary restrictions are often a crucial part of ongoing therapy.

DOs

- Give all medications exactly as directed.
- Follow dietary recommendations closely, with no treats or snacks that have not been okayed by your veterinarian.
- Understand that protein-losing enteropathy is an umbrella term for several intestinal diseases and that proper treatment requires determining the exact nature of the cause. In turn, this often requires advanced testing including an intestinal biopsy.
- Pay attention to your pet's stool characteristics. Is it watery, or softer than normal? Does it appear greasy? Is it covered in mucus? This can provide useful information for your veterinarian.
- Consider a second opinion with a veterinary internal medicine expert if the diagnosis is unclear, or for the latest treatment options. These specialists are known as Diplomates of the American (or European) College of Veterinary Internal Medicine (directories: www.acvim.org, www.vetspecialists.com, www.ecvim-ca.org). They can be recommended to you by your veterinarian and are found in most larger North American and European cities.

DON'Ts

- Do not give treats that are not consistent with dietary recommendations.
- Do not look at just the abdomen (belly) to determine whether lost weight is being regained because fluid accumulation in the

belly may look like gained weight even though it is only retained fluid. The prominence of the ribs and backbone (to the touch in any pet, and visibly in short-coated dogs and cats) are more accurate indicators of body condition.

WHEN TO CALL YOUR VETERINARIAN

- Breathing difficulty is an emergency situation that can occur if fluid retention compresses the lungs within the chest (pleural effusion), or if a blood clot forms in the lungs.
- If the ribs and spine of your pet are becoming more prominent, signaling weight loss even if the belly is big.
- Vomiting or diarrhea begin to occur, or increase in frequency.

SIGNS TO WATCH FOR

As indicators of the onset, or recurrence, of protein-losing enteropathy:

- Weight loss
- Diarrhea, sometimes with vomiting
- Swelling of the legs or scrotum
- Swelling of the abdomen
- Difficulty breathing

ROUTINE FOLLOW-UP

- Varies with the cause of the condition, and should be discussed at every visit.

Other information that may be useful: "How-To" Client Education Sheet:

- How to Collect a Fecal Sample

Practice Stamp or Name & Address

Also available in Spanish.