

DILATION OF LYMPHATIC VESSELS IN THE GASTROINTESTINAL TRACT (LYMPHANGIECTASIA)

BASICS

OVERVIEW

- “Lymphatic vessels” are vascular channels (similar to veins) that transport lymph; “lymph” is a clear to slightly colored fluid that contains white-blood cells—it circulates through the lymphatic vessels removing bacteria and other materials from body tissues and it also transports fat from the small intestines; it eventually empties into the blood, returning tissue fluids into the general body circulation
- “Lymphangiectasia” is defined as the dilation of the lymphatic vessels in the gastrointestinal tract; the “gastrointestinal tract” includes the stomach, small intestines, and large intestines
- Lymphangiectasia is an obstructive disorder of the lymphatic system of the gastrointestinal tract, resulting in the loss of body proteins through the intestines (known as “protein-losing enteropathy”)

GENETICS

- A familial tendency for the condition in which proteins are lost from the body through the intestines (protein-losing enteropathy) has been reported for soft-coated wheaten terriers, basenjis, and Norwegian lundehunds; “familial” indicates a condition that runs in certain families or lines of dogs

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Dogs

Breed Predispositions

- Increased likelihood of lymphangiectasia seen in soft-coated wheaten terriers, basenjis, Norwegian lundehunds, and Yorkshire terriers as compared to other dog breeds

Age

- Dogs of any age can be affected
- Most common in middle-aged dogs

Predominant Sex

- Increased likelihood of lymphangiectasia seen in female soft-coated wheaten terriers as compared to males
- No sex has been reported to be more likely to develop lymphangiectasia in other breeds

SIGNS/OBSERVED CHANGES in the ANIMAL

- Clinical signs are variable
- Diarrhea—long-term (chronic), intermittent or continuous, watery to semisolid consistency; however, not all patients have diarrhea
- Build-up of fluid in the abdomen (known as “ascites”)
- Build-up of fluid under the skin (known as “subcutaneous edema”)
- Difficulty breathing (known as “dyspnea”) from build-up of fluid in the space between the chest wall and the lungs (known as “pleural effusion”)
- Weight loss
- Excessive gas formation in the stomach or intestines (known as “flatulence”)
- Vomiting

CAUSES

Primary or Congenital (present at birth) Lymphangiectasia

- Localized—intestinal lymphatic vessels only
- Diffuse lymphatic abnormalities (such as accumulation of milky fluid in the space between the chest wall and lungs [known as “chylothorax”]; swelling due to the accumulation of lymph caused by blockage of the lymphatic vessels and/or lymph nodes [known as “lymphedema”]; accumulation of milky fluid in the abdomen [known as “chyloabdomen”]; or blockage of the thoracic duct, through which lymph is emptied into the general circulation)

Secondary Lymphangiectasia

- Right-sided congestive heart failure; congestive heart failure is a condition in which the heart cannot pump an adequate volume of blood to meet the body’s needs
- Inflammation of the sac (known as the “pericardium”) around the heart, characterized by thickening of the sac (condition known as “constrictive pericarditis”)
- Budd-Chiari syndrome (condition in which blood flow is blocked in the veins of the liver)
- Cancer (lymphosarcoma)

TREATMENT

HEALTH CARE

- Mostly treated as outpatients
- May need hospitalization if complications due to low levels of albumin, a type of protein, in the blood (known as “hypoalbuminemia”) develop

ACTIVITY

- Normal

DIET

- Low-fat diet with high-quality protein
- Long-chain triglycerides stimulate intestinal lymph flow and may lead to increased intestinal protein loss
- Diets fortified with medium-chain triglycerides (MCTs) may be beneficial
- May feed medium-chain triglycerides (MCTs) to supplement fat and increase calorie intake
- Commercial sources of medium-chain triglycerides (MCTs)—**MCT oil** or Portagen® (Mead Johnson, Evansville, IN)
- Supplement with fat-soluble vitamins—A, D, E, and K
- Elemental diets also can be used; “elemental diets” are liquid diets that contain amino acids, carbohydrates, low levels of fats, vitamins, and minerals that can be absorbed without the need for digestion

SURGERY

- When intestinal lymphangiectasia is secondary to an identifiable lymphatic blockage or obstruction, consider surgery to relieve the obstruction
- Surgery to remove part of the sac (pericardium) around the heart (known as a “pericardiectomy”) may be indicated in cases of inflammation of the sac, characterized by thickening of the sac (constrictive pericarditis)
- Patients that benefit from surgical intervention are rare

MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Try steroids, if dietary therapy alone is unsuccessful (steroid treatment is not intended to treat lymphangiectasia, but rather to treat coexistent inflammation of the stomach and/or intestines); prednisone can be administered, after remission of the disease, dosage slowly can be decreased to the lowest dose effective at controlling the disease
- If the patient is cobalamin (vitamin B12) deficient, cobalamin must be supplemented to achieve therapeutic response
- If secondary small intestinal bacterial overgrowth is suspected, the patient should be treated with antibiotics (tylosin); small intestinal bacterial overgrowth (“SIBO”) is a condition in which a high number of bacteria are found in the upper small intestine

FOLLOW-UP CARE

PATIENT MONITORING

- Monitor body weight, serum protein concentration, and evidence of recurrent clinical signs (such as fluid build-up in the space between the lungs and chest wall [pleural effusion], in the abdomen [ascites], and/or under the skin [edema])
- Patients need to be re-evaluated dependent on severity of the disease process

POSSIBLE COMPLICATIONS

- Breathing difficulty from fluid build-up in the space between the lungs and chest wall (pleural effusion)
- Severe protein-calorie depletion
- Diarrhea that is resistant to medical treatment

EXPECTED COURSE AND PROGNOSIS

- Prognosis is guarded
- Some animals fail to respond to treatment
- Remissions of several months to more than 2 years can be achieved in some patients

KEY POINTS

- Unpredictable disease progression and response to treatment