



## **Pulmonary Edema**

### **Diagnostic Plan**

History  
Physical examination  
Chest auscultation  
Chest X-rays  
Electrocardiography  
Blood work  
Urinalysis

### **Therapeutic Plan**

Activity restriction  
Oxygen therapy  
Morphine  
Diuretics  
Corticosteroids  
Nebulization  
Bronchodilators  
Vasodilators  
Drugs to strengthen the heart

### **Nutritional Plan**

Nutrition based on individual patient evaluation including body condition and other organ system involvement or disease  
Also, consider sodium restriction

## **Pulmonary Edema**

Your pet has pulmonary edema. Pulmonary edema is an abnormal accumulation of fluid in the air spaces of the lung. This fluid interferes with breathing and, if severe, may cause death by suffocation. Pulmonary edema is treated with oxygen and medications to remove the fluid. This client education sheet will help you learn more about pulmonary edema and will review your veterinarian's instructions for your pet's care at home, as well as follow-up with the veterinary health care team.

### **What You Should Know About Pulmonary Edema**

The lungs are formed by tubes that transport air and by small sacs called alveoli. Oxygen enters the body and bloodstream through alveoli. This movement of oxygen is called respiration. Oxygen is taken by the blood and transported throughout the body, and carbon dioxide is carried by the blood to the alveoli where it moves out into the alveoli and is exhaled.

Pulmonary edema is an accumulation of fluid within the alveoli and air tubes. Pulmonary edema may develop slowly, causing breathing difficulties only when the animal exerts itself. When pulmonary edema develops rapidly, the animal suffers from acute respiratory distress within minutes or hours. A complete spectrum of disease, therefore, exists between the effects of slow and rapid accumulation of fluid.

#### **Causes**

One of the primary causes of pulmonary edema is heart failure. Other causes include: underlying lung disease; trauma; blood; electrical shock; smoke inhalation; allergic reaction; and drowning.

#### **Diagnosis**

The history that you give your veterinarian – including trauma such as a blow to the head, and the recent administration of drugs, new foods or vaccines – will often help your veterinarian recognize pulmonary edema.

Your veterinarian will perform some or all of the following diagnostic tests: a physical exam including auscultation (listening with a stethoscope) and palpation (examining by touching) of the chest; X-rays; ECGs; blood tests; and urinalyses.

### Treatment and Home Care

Mild pulmonary edema may respond to enforced rest such as hospitalization. More severe fluid accumulation is treated with medications that stimulate fluid absorption (diuretics), medications that widen the breathing tubes, sedatives and oxygen supplementation.

Treating the cause of pulmonary edema may include preventing your pet from chewing on electrical cords or giving antibiotics for chronic infections or corticosteroids and antihistamines for allergies.

Heart disease is one of the most common medical problems in dogs and cats and is a primary cause of pulmonary edema. Heart disease is treated with special low-sodium pet foods and with drugs to strengthen the heart.

When your pet goes home, you'll need to monitor its breathing. If your pet begins to have difficulty breathing, call your veterinarian at once. Also, make sure that your pet is eating its normal amount of food and that you follow your veterinarian's instructions for exercise restriction. Give all medications as directed and carefully follow your veterinarian's advice regarding follow-up appointments.

### Nutritional Plan

If your pet has pulmonary edema due to heart failure, your veterinarian may give you special feeding instructions. Many pets with heart failure benefit from foods low in sodium. These foods reduce the workload of the heart by reducing fluid accumulation in the body. Foods with moderate sodium restriction are useful for managing early heart failure. Such foods include Hill's® Prescription Diet® g/d® Canine and g/d® Feline Early Cardiac-Healthy Aging. If clinical signs of heart failure and pulmonary edema persist or develop when your pet is fed a special food with moderate sodium restriction, your veterinarian may recommend a very low-sodium food to help reduce fluid retention. Such special foods include Prescription Diet® h/d® Canine Cardiac Health.

### Transitioning Food

Unless recommended otherwise by your veterinarian, gradually introduce any new food over a seven-day period. Mix the new food with your pet's former food, gradually increasing its proportion until only the new food is fed.

If your pet is one of the few that doesn't readily accept a new food, try warming the canned food to body temperature, hand feeding for the first few days, or mixing the dry food with warm water (wait ten minutes before serving). Feed only the recommended food. Don't feed additional salt or any snacks that may contain sodium. Be patient but firm with your pet. This is important because the success or failure of treatment depends to a large degree on strict adherence to the new food.

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## Home Care Instructions

Client's Name: \_\_\_\_\_

Patient's Name: \_\_\_\_\_

Medication(s): \_\_\_\_\_

Nutritional Recommendation: \_\_\_\_\_

Follow-Up Appointment: \_\_\_\_\_

(Hospital Stamp Area Above)

REGULAR VISITS WILL HELP OUR VETERINARY HEALTH CARE TEAM PROVIDE FOR YOUR PET'S BEST INTEREST.