Case 042788

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Signalment & History

- 10-yr-old FS Mixed Breed

- Early 2015 owner noticed increased respiratory rate
- Decreased heart and lung sounds ventrally
- No other clinical signs
Physical Exam

• BAR

• Heart rate and temperature WNL

• Increased respiratory rate
Other tests

• Radiographs
  – Severe bilateral pleural effusion

• Ultrasound
  – Thickening of mediastinum
  – Rounded lung lobes with areas of collapse
  – Anechoic fluid in left and right pleural space

• Pleural fluid analysis
  – 2.86 L of pale pink fluid removed
  – ~1.5 mL’s sent in for fluid analysis
    • TNCC 3936 cells per microliter
    • TP: 2.9 g/dL
Direct Preparation 40x Oil
Interpretation

• Chronic Chylous Effusion
Pathogenesis

• Obstruction or rupture of lymphatic vessel

• Acute: small lymphocytes predominate

• Chronic: neutrophils and macrophages

• No fat ingestion -> no chylomicrons -> no chyle
Lymphatic System

• Intestinal cells break fat down to chylomicrons
• Intestinal lymphatics drain to cisterna chili
• Moves through the chest via thoracic duct
• Empties into cranial vena cava
Causes of Chylous Effusion In Dogs

- Idiopathic
- Cardiomyopathy
- Right Sided heart failure
- Diaphragmatic hernia
- Traumatic rupture of thoracic duct

- Thoracic Masses
  - Granuloma
  - Thymoma
  - Lymphoma
- Dirofilariasis
- Lung lobe torsion
Clinical Signs

- Increased respiratory rate and/or effort
- Anorexia
- Lethargy
- Typically no other physical abnormalities
- Draining of fluid can cause electrolyte imbalances, hypoproteinemia, and lymphopenia
Diagnosis

• May be suspicious based on history & presentation

• Fluid analysis w/ cytologic evaluation

• Fluid cholesterol to triglyceride ratio <1

• Fluid triglycerides > serum triglycerides at 3:1 or greater

• Cholesterol higher in serum than fluid
Prognosis and Treatment

• Prognosis
  – Some resolve spontaneously
  – Depends on resolution of inciting causes

• Treatment
  – Treat the inciting cause if known
  – Ligation of thoracic ducts
  – Chest tube placement
  – Removal of pericardial sac
Case Outcome

• Serial draining of pleural fluid
  – 2-3L of chylosus fluid every 2 weeks

• Recommendation
  – Ligation of thoracic ducts
  – Removal of pericardial sac
  – Chest tube placement
References


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