History

An 8-week-old 5-kg (11-lb) sexually intact male English Bulldog was evaluated by a referring veterinarian for dyspnea and weakness of 12 hours’ duration. The dog was treated with furosemide (2 mg/kg [0.9 mg/lb], IM) and oxygen supplementation, which resulted in mild improvement in signs of respiratory tract disease.

On physical examination, the dog had signs of depression with pale mucous membranes and weak femoral pulses. Inspiratory effort was increased with a marked abdominal component. Heart sounds were muffled, and jugular veins were distended and pulsatile. The abdomen was distended. Results of a CBC and serum biochemical analyses were within reference limits. Radiographs of the thorax were obtained (Figure 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page →

What Is Your Diagnosis?
Pericardial cysts have been described for dogs. Teratomatous, coelomic, lymphangiomatous, bronchiogenic, hematic, or serous pericardial cysts have been reported in humans. Congenital intrapericardial cysts in humans may be coelomic, lymphangiomatous, bronchiogenic, hematic, or teratomatous. Only 2 instances of true congenital intrapericardial cysts have been described for dogs. Clinical signs of affected dogs are similar to those associated with other pericardial diseases and include lethargy, abdominal distension, exercise intolerance, and labored breathing. Differential diagnoses for large, rounded cardiac silhouette enlargement include pericardial effusion, peritoneopericardial diaphragmatic hernia, or intestinal volvulus. Generalized enlargement of the cardiac silhouette most commonly occurs with dilated cardiomyopathy or mitral and tricuspid valve regurgitation but can also be seen with pericardial effusion (primary or secondary) and peritoneopericardial diaphragmatic hernias. Congenital causes of cardiac silhouette enlargement were considered more likely in this dog because of the dog’s age.

The dog was placed in an oxygen cage (with 40% oxygen) and stabilized by aspirating 80 mL of hemorrhagic fluid via ultrasound-guided pericardiocentesis. Subtotal pericardiectomy was performed via median sternotomy and the pericardial mass was removed. The mass was attached to a pedicle of fatty tissue that traversed a defect in the ventral aspect of the diaphragm. The dog recovered well and was discharged 3 days after surgery. Histologic analysis of the mass was consistent with an acquired cystic hematoma. Two weeks after surgery, the dog was clinically normal at follow-up examination. The dog was placed in an oxygen cage (with 40% oxygen) and stabilized by aspirating 80 mL of hemorrhagic fluid via ultrasound-guided pericardiocentesis. Subtotal pericardiectomy was performed via median sternotomy and the pericardial mass was removed. The mass was attached to a pedicle of fatty tissue that traversed a defect in the ventral aspect of the diaphragm. The dog recovered well and was discharged 3 days after surgery. Histologic analysis of the mass was consistent with an acquired cystic hematoma. Two weeks after surgery, the dog was clinically normal at follow-up examination.

Radiographic Findings and Interpretation

The cardiac silhouette is large and globoid, consistent with pericardial effusion (Figure 2). On the lateral view, the trachea is narrowed dorsoventrally, with a tracheal-thoracic inlet diameter ratio at the low end of the reference range (0.085; reference range, 0.07 to 0.21). The trachea is elevated, and the ventral portion of the diaphragm silhouettes with the heart. The left and right caudal lobar pulmonary arteries and veins are dilated. There is cranial displacement of a filled stomach or intestines within the abdomen, which is consistent with a peritoneopericardial diaphragmatic hernia.

Comments

Echocardiography confirmed the presence of a moderate volume of pericardial fluid and cardiac tamponade. A 6 × 6-cm multilocular intrapericardial cystic mass was visible on the right side of the heart causing compression of the right ventricle during diastole (Figure 3). Ultrasonographic findings were consistent with an intrapericardial cyst. Echocardiography is the most reliable noninvasive tool to aid in the diagnosis of pericardial disorders and was instrumental to the initial management of this dog.

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