What Is Your Diagnosis?

A 9-year-old spayed female Italian Greyhound was evaluated for shallow breathing and a dry cough of 2 days’ duration. Three weeks prior to evaluation, the dog completed a 4-month multidrug chemotherapy protocol for completely excised T-cell jejunal lymphoma. Tachypnea and marked abdominal expiratory effort were noted. Increased expiratory lung sounds were found in all quadrants during auscultation of the thorax. Findings on abdominal palpation were normal. Results of a CBC and serum biochemical analyses were within reference limits. Thoracic radiographs were obtained (Figure 1).

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

Figure 1—Right lateral (A) and ventrodorsal (B) radiographic views of the thorax of a 9-year-old spayed female dog evaluated for shallow breathing and a dry cough of 2 days’ duration.
There is a smooth, lobulated, and broad-based soft tissue mass within the middle and right caudal aspect of the thoracic cavity that silhouettes with the diaphragm and caudal vena cava (Figure 2). The right mainstem bronchus is collapsed. A round-to-oval soft tissue opacity dorsal to the second sternebra is consistent with sternal lymphadenopathy. Differential diagnoses for the soft tissue mass include a diaphragmatic mass, lung lobe mass, and diaphragmatic hernia. Differential diagnoses for sternal lymphadenopathy include neoplasia and reactive lymphadenopathy.

Abdominal ultrasonography revealed an avascular, smooth, triangular region of homogeneous tissue along the right craniodorsal portion of the body wall, hypoechoic to the liver.

Computed tomography of the thorax and cranial aspect of the abdomen revealed a 1.0-cm-diameter, irregularly marginated, contrast-enhancing soft tissue nodule within the right caudal lung lobe. A large attenuating, non–contrast-enhancing, sickle-shaped soft tissue mass was also present within the right diaphragmatic crus. The mass compressed the caudal vena cava at the hiatus and protruded through the hiatus, compressed and displaced the right liver lobes toward midline, and wrapped around the liver dorsally and ventrally (Figure 3). Cytologic evaluation of the mass revealed probable lymphoma.

Abdominal exploratory surgery was performed with the intent of mass resection for diagnosis and palliation of progressive dyspnea and tachypnea. A large (5 × 10-cm) opaque soft tissue mass was found to be intimately associated with the diaphragm but also involved the caudal vena cava, caval hiatus, and right thoracic body wall. Complete removal of the mass was not possible; histologic examination of multiple full-thickness diaphragmatic biopsy specimens revealed T-cell lymphoma. The pulmonary nodule was not removed. Despite various chemotherapy protocols, the dog died approximately 90 days after surgery.

Diaphragmatic masses are rare in dogs, with only 2 reports of primary diaphragmatic masses, both of which were histologically classified as peripheral nerve sheath tumors. Multiple imaging modalities, including computed tomography and magnetic resonance imaging, may aid in diagnosis.