History

A 19-year-old castrated male domestic shorthair cat was examined because of open-mouth breathing. The cat had a poor appetite, difficulty breathing, and intermittent gagging episodes during the preceding 2 weeks. Eight months before examination, hyperthyroidism was diagnosed elsewhere. Treatment with methimazole had been initiated but was discontinued after a few weeks. Physical examination revealed pronounced abdominal respiratory effort, a compressible thoracic cavity, heart rate of 240 beats/min with arrhythmia, and dull lung sounds that were more apparent on the left. Severe dental disease and a rough coat were also noticed. Thoracocentesis yielded 120 ml of serosanguineous fluid from the left side and 135 ml of straw-colored fluid from the right side of the thoracic cavity. A right lateral thoracic radiographic view was obtained (Fig 1).

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

Radiographic diagnosis—Chronic fibrosing pleuritis, pleural effusion, and lobar consolidation (Fig 2).

Comments

Radiographic differential diagnoses of lung lobe consolidation include pneumonia, hemorrhage, atelectasis, neoplasia, edema, and lobar torsion. Other diagnostic procedures (e.g., thoracocentesis, ultrasonography, and bronchoscopy) may help differentiate among these conditions, but definitive diagnosis of lobar torsion requires thoracotomy or thoracoscopy. Because of the age and poor condition of this cat, it was euthanized. Necropsy revealed torsion of the cranial left lung lobe, moderate hydrothorax, and severe fibrosing pleuritis with nodular contraction of all right lung lobes and the caudal left lobe. Severe fibrosing pericarditis, cardiomegaly attributable to hypertrophy of the left and right ventricles, and adenomatous hyperplasia of the thyroid gland were additional gross findings.

Lung lobe torsion is rarely reported in cats. Most affected cats have an associated condition, such as chylothorax, pyothorax, mediastinal lymphoma, a combination of cardiac and renal disease, or chronic feline asthma. Typical radiographic findings in cats and dogs are lobar consolidation and pleural effusion. In acutely affected animals, air bronchograms, which may highlight airways in abnormal orientation, may be seen but disappear within 2 to 3 days as the air is absorbed and replaced by fluid. In some cases, radiographic findings may be nondiagnostic.

Hyperthyroidism had previously been diagnosed in the cat of this report, but was essentially left untreated. Evidence of hyperthyroidism, including a rough coat, adenomatous hyperplasia of the thyroid glands, and hypertrophic cardiomyopathy, detected during physical examination and necropsy suggested that this cat had hyperthyroidism. Although some of the pleural effusion, especially the serosanguineous fluid on the left side, was likely attributable to the lobar torsion, some probably reflected preexisting cardiac dysfunction. A relationship between chylothorax and fibrosing pleuritis has been reported in cats; however, the relationship between pleural effusion and fibrosing pleuritis in the cat of this report is unclear. Both conditions may have served as predisposing factors for the development of lobar torsion.


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