What is Your Diagnosis

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Signalment

A 4-year-old spayed female Domestic Short Hair cat.

History

The cat showed signs of respiratory distress including dyspnea and abdominal breathing. Nasal discharge was absent. Neither traumatic nor accidental history was noticed. Thoracocentesis was performed to relieve large amount of fluid (250 ml of serosanguineous type) after severe pleural effusion was detected by previous radiographs.

Clinical Examination

Mucous membrane was mildly pale appearance. Lung sound was dull via thoracic auscultation. Peripheral lymph nodes were mildly enlarged. The result from feline leukemia virus (FeLV) infection test was positive.

Radiographic Examination

Plain right lateral and ventrodorsal thoracic radiographs were taken to assess volume of pleural fluid and abnormalities of cardio respiratory organs.

Figure 1. Right lateral thoracic radiograph.

Figure 2. Ventrodorsal thoracic radiograph.

Give your diagnosis and turn to the next page.

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Radiographic findings

Plain lateral thoracic radiograph (Figure 1) revealed caudal displacement of the cardiac silhouette which was mimicked cardiomegaly. The trachea was compressed and displaced dorsally. Both radiographs (Figure 1, 2) showed a large mass which was located in the cranial-mediastinal area cranial to the heart. In addition, an interlobar fissure or pleural fissure line could be detected between the right middle and right diaphragmatic lung lobes (Figure 2, 3).

Radiographic diagnosis

Mediastinal lymphoma with small amount of retained pleural fluid.

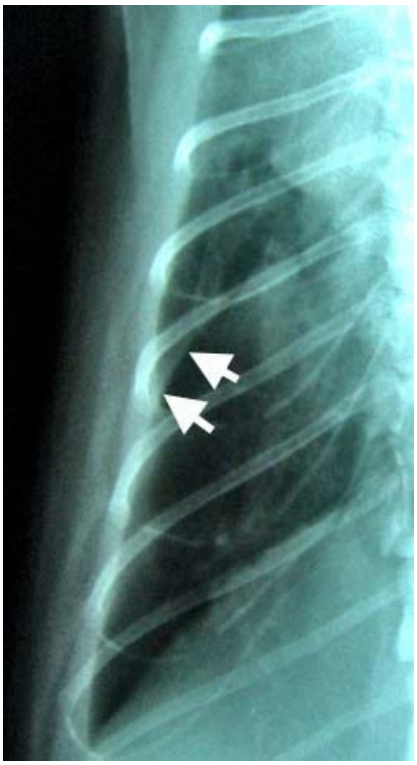

Figure 3. Interlobar fissure or pleural fissure line (double arrows) represents the abnormal fluid accumulation in pleural space which can occur as a result of one or more of the following causes; 1) an increase in hydrostatic pressure in systemic circulation, 2) a decrease in colloid osmotic pressure of plasma, 3) an increase in pleural capillary permeability, 4) an increase in lymphatic pressure.

Discussion

Most of mediastinal lymphomas in cats (80%) are associated with FeLV infection. Lesion at cranial mediastinal region may produce marked caudal displacement of the heart and dorsal displacement of the trachea. Very large mass may occupy both cranial mediastinum and cardiac field, entirely obscuring the heart and thereby mimicking massive cardiomegaly or pericardial effusion. In some cases, mediastinal lymphoma may increase lymphatic pressure which results in pleural effusion. In order to quantitatively assess the amount of pleural fluid on conventional plain radiograph is difficult. Approximately 50 ml of pleural fluid is a minimal volume that is adequate to be detected in plain radiographs as pleural effusion. Radiographic findings of pleural effusion that may vary on amounts of fluid are an interlobar fissure line, a retracted lung border from sternum and chest wall, a round lung margin, or disappearance of cardiac and diaphragmatic silhouette.

References

Farrow, C.S. 1993. Mediastinal disorders. The Thorax. In: Radiology of the Cat. St. Louis, Missouri: Mosby. 114- 119.

Thrall, D.E. 2002. The mediastinum. In: Textbook of Veterinary Diagnostic Radiology. 4th ed. D.E.Thrall (ed.). Pennsylvania: W.B. Saunders Company. 376- 389.