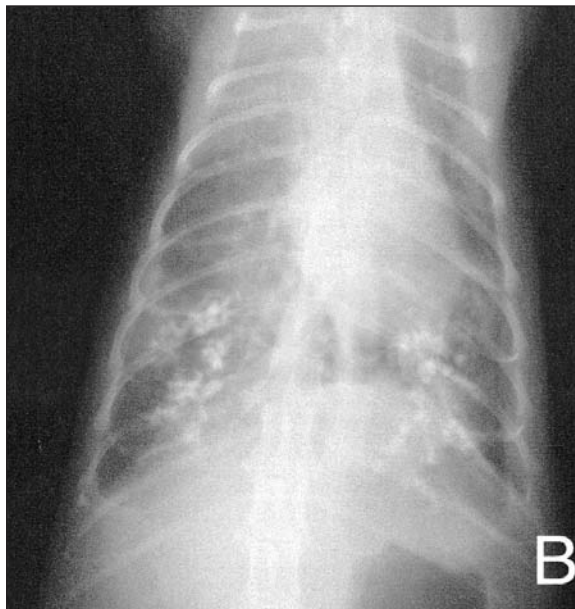


What Is Your Diagnosis?



Figure 1—Right lateral (A) and ventrodorsal (B) radiographic views of a 9-year-old male domestic shorthair cat evaluated for coughing, weight loss, and dyspnea.



History

A 9-year-old castrated male domestic shorthair cat was evaluated because of a nonproductive, retching-like cough of 6 days' duration. The cat had also lost 1.36 kg (3 lb) during the past 4 months. The cat was housed indoors. On physical examination, the cat was obtunded and had tachycardia, tachypnea, cachexia, and dyspnea. Thoracic radiographs were obtained (Fig 1).

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

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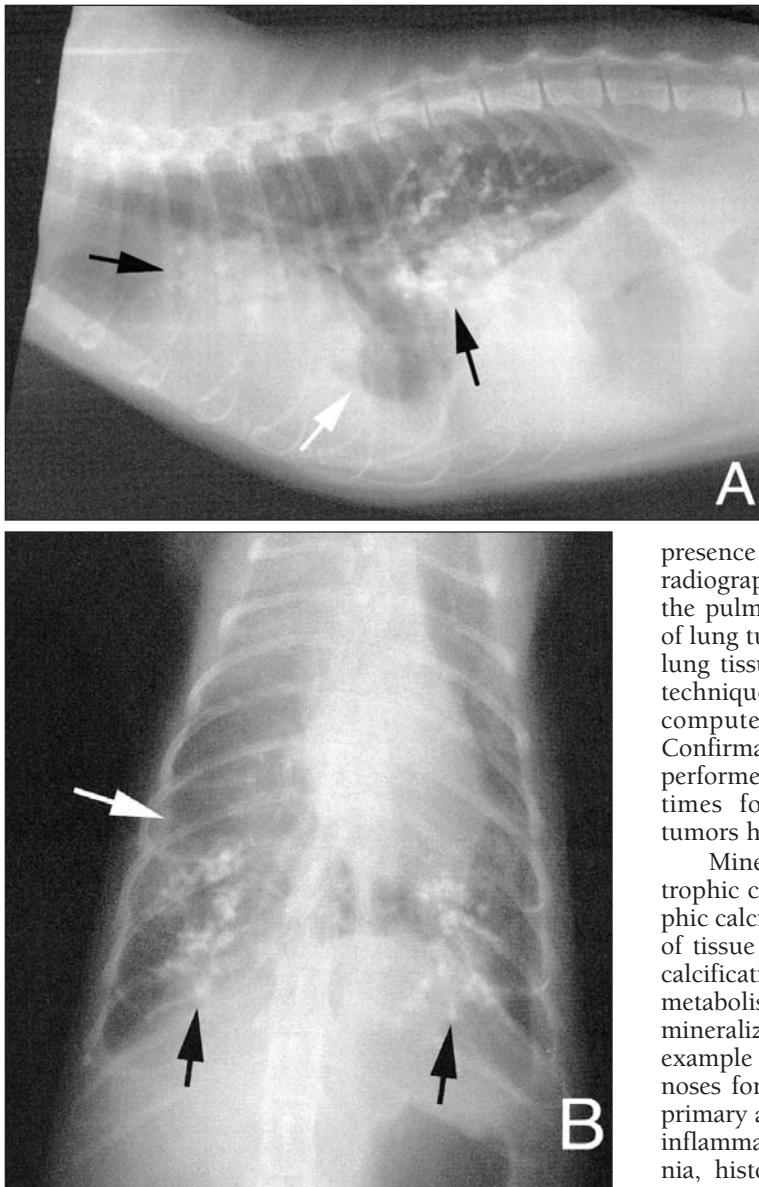


Figure 2—Same radiographic views as in Figure 1. Notice the regions of nonconsolidating alveolar patterns with mineralized foci (black arrows) and pleural effusion (white arrow).

Diagnosis

Radiographic diagnosis—Multifocal nonconsolidating alveolar pattern with mineralized foci in multiple lung fields and moderate pleural effusion (Fig 2).

Comments

Results of a CBC indicated a nonregenerative anemia and lymphopenia. Serum biochemical abnormalities included a low BUN concentration and low alanine transaminase activity. Serum concentrations of calcium, phosphorus, and thyroxine were within reference ranges. Results of ELISAs for FeLV, FIV, and *Dirofilaria immitis* were negative. Results of urinalysis were unremarkable. Because of the poor prognosis, the cat was euthanized at the request of the owner.

Necropsy revealed multiple, firm, 0.3- to 2.0-cm, irregular-shaped confluent masses with a gritty texture

in all lung fields and on pleural surfaces. Moderate, blood-tinged pleural effusion and mild tracheobronchial lymphadenopathy were observed. Histologic examination of lung tissue confirmed adenocarcinoma.

Primary lung tumors in cats are uncommon.¹ Radiography of the thorax may reveal solitary or multiple well-circumscribed interstitial masses, a solitary consolidating or multifocal nonconsolidating alveolar pattern, or a diffuse bronchointerstitial pattern.² A wide range of prevalence has been reported for dystrophic mineralization in primary lung neoplasia.^{1,2} Primary lung tumors often metastasize to intrathoracic sites including the tracheobronchial lymph nodes, lung, and pleura, as well as to distant sites such as the digit and eye.¹ Malignant pleural effusion is frequently observed and may obscure the presence of a lung tumor. Thoracocentesis followed by radiography of the thorax may help to accurately define the pulmonary distribution of lung tumors. Diagnosis of lung tumors is often made by cytologic evaluation of lung tissue or pleural fluid. Aspiration or core biopsy techniques guided by ultrasonography, fluoroscopy, or computed tomography have been advocated.¹ Confirmation and staging of lung tumors is frequently performed during thoracotomy, and prolonged survival times for moderately differentiated solitary lobar tumors have been reported following lobectomy.³

Mineralization of soft tissues is classified as dystrophic calcification or metastatic calcification. Dystrophic calcification is the accumulation of calcium at sites of tissue degeneration or necrosis, whereas metastatic calcification develops when a disturbance of calcium metabolism leads to hypercalcemia.⁴ The pulmonary mineralization observed in the cat in this report is an example of dystrophic calcification. Differential diagnoses for cats with pulmonary mineralization include primary and secondary neoplasia; chronic infectious or inflammatory diseases such as mycoplasmal pneumonia, histoplasmosis, and tuberculosis; and idiopathic conditions such as pulmonary microlithiasis.^{2,4} Foci of dystrophic calcification in necrotic neoplastic tissue are found at necropsy in cats with primary lung neoplasia; however, they are often too small to be recognizable on radiographs.⁴ Concurrent pleural effusion in the cat in this report makes a neoplastic condition more likely than mycoplasmal pneumonia. Primary lung neoplasia in cats may appear radiographically as a nonconsolidating alveolar pattern with dystrophic mineralization in multiple lung lobes.²

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