Actinomyces & Pulmonary Neoplasia

A 7-year-old spayed German shepherd crossbreed with a history of coughing and pyrexia of 3-months duration was examined. Previous antibiotic therapy had yielded little response. A marked increase in opacity of the right hemithorax in thoracic radiographs was noted, and other radiographic changes included a large focal mass with a cavitary center, consolidation of the right middle lung lobe, and partial consolidation of the right cranial lobe. The left lung lobes had a moderate diffuse, unstructured interstitial pattern with peribronchial cuffing. There was evidence of pleural effusion or pleural thickening.

Cytologic evaluation of bronchial lavage and transthoracic needle aspirates showed large numbers of degenerate neutrophils, occasional macrophages, and lymphocytes with a background of erythrocytes and rare squamous epithelium. Some of the neutrophils contained thin filamentous intracytoplasmic bacilli. Actinomyces species were isolated from both samples by aerobic culture. The dog was placed on clindamycin and amoxicillin. The cough was still present after 4 weeks. Radiographs suggested progression of disease, and exploratory thoracotomy revealed diffuse consolidation of all right lung lobes and enlarged sternal and cranial mediastinal lymph nodes. The dog was euthanized when surgical cure was considered unfeasible. The postmortem diagnosis was peribronchiolar adenocarcinoma.

The presence of Actinomyces species in humans with pulmonary neoplasia has frequently been reported. Physicians are advised that the presence of Actinomyces in bronchopulmonary secretions and tissue specimens may mask underlying disease, possibly because of the tendency for Actinomyces to colonize devitalized or injured tissue with low oxygen tension and oxidation-reduction potential. Thoracic actinomycosis is commonly reported in dogs. Veterinarians should also be aware that it may be associated with serious underlying disease. If the patient does not respond to appropriate therapy, it should be tested further.