**FOCUS** Surgical Treatment for *Aspergillus* Infection

*Aspergillus* spp are known to infect dogs, causing local or systemic disease. Sino-nasal aspergillosis is more common than systemic disease and usually occurs in healthy middle-aged mesocephalic and dolichocephalic canine breeds. This case study described a dog with spontaneous pneumothorax following pulmonary aspergillosis.

A previously healthy 3-year-old neutered mixed-breed dog in eastern Oregon presented for spontaneous pneumothorax. The dog had no prior history of coughing, nasal discharge, or travel. Initial treatment involved multiple thoracenteses and removal of air from the pleural space. A thoracotomy tube was placed, broad-spectrum antibiotics started, and the dog transferred to a specialty center. CT revealed right-sided pneumothorax with atelectasis of the entire right lung. One large bulla and multiple smaller bullae were identified in the right caudal lung lobe. Thoracotomy revealed multiple emphysematous areas in the right middle lung lobe; a lobectomy was performed. Lung lobe histology showed severe diffuse bronchopneumonia with necrotizing pleuritis. There was marked fungal proliferation with morphology resembling *Aspergillus* spp; however, the owners declined culture.

After diagnosis of aspergillosis, antibiotics were discontinued and the dog was started on itraconazole for 4 months. At follow-up appointment 18 months after diagnosis, the dog had fully recovered. This case study was the first to describe successful medical and surgical management of *Aspergillus* spp pulmonary infection and associated pneumothorax.

**Commentary**

This case report served as a useful reminder that spontaneous pneumothorax (nontraumatic) in dogs is typically a surgical disease (ie, underlying pulmonary pathology results in air leakage). Medical management, such as periodic thoracentesis, is rarely curative. The report also highlighted the growing usefulness of CT in identification of pulmonary disease and for preoperative surgical planning. Finally, the report illustrated that uncommon infections may play an emerging role in canine disease. The source of this dog’s suspected aspergillosis was not found. The owners declined pulmonary culture, which may have impacted long-term prognosis or, at minimum, the ability to provide a final diagnosis. While financial constraints are common in veterinary medicine, limiting diagnostics may influence a clinician’s ability to accurately prognosticate and treat individual patients.—Elizabeth A. Rozanski, DVM, DACVIM, DACVECC

**Source**


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**RESEARCH NOTE: Islet Transplant in Dogs**

Type 1 diabetes mellitus is one of the commonly diagnosed endocrinopathies in dogs. Exogenous insulin administration addresses clinical signs, but when normal glucose homeostasis is not restored, complications (eg, cataract formation, pancreatitis, diabetic ketoacidosis) can persist. Pancreatic islet transplantation in humans restores glucose homeostasis, reducing risks for complications. Islet yield in human pancreatic islet transplants improved with use of a temperature-controlled perfusion circuit, enzymatic digestion, and Ricordi chamber for mechanical agitation. This is the standard method for humans and is examined in this study on deceased canine donors to evaluate islet yield and purity.

Initial anatomic studies demonstrated that infusion via cannulation of both the accessory pancreatic duct and distal right limb of the pancreas enabled complete perfusion of the pancreas. Islet isolation was then performed in 6 dogs, and yield and viability were calculated using dual fluorescent staining techniques. A high degree of islet purity (endocrine tissue, 87.5%) and viability (87.4%) were achieved. Islet yield using this technique required about 1 pancreas per 5 kg body weight of recipient dog. Purity and viability levels were comparable with those seen in human pancreatic islet isolation.

According to this study, it is clinically feasible to obtain acceptable islet yield and quality from deceased canine patients using standard laboratory equipment. Further studies are needed to evaluate new isolation techniques, implantation sites, immunosolation, and immunotherapeutic strategies.

**Source**