

# Improving Diagnosis of Pulmonary Fibrosis in W. Highland White Terriers

by Helma N. Weeks

Your middle-aged, small terrier, a Westie, Norwich, Cairn, or other short-legged breed, seems to not have as much stamina as it used to have. It pants and lags on longer walks, the tongue sometimes looks not as pink as it should, and the dog coughs intermittently. Otherwise, the dog seems fine. It eats, doesn't drink excessively, but you have a nagging feeling that all is not well.

When the vet checks the dog out, crackled sounds are heard in the lungs. The dog could have a chronic lung disease known as idiopathic pulmonary fibrosis. This disease has been identified in West Highland white terriers and to a lesser degree in other terrier breeds. It affects middle-aged and older dogs and is characterized by exercise intolerance, shortness of breath, difficulty in breathing, coughing, and crackled sounds on lung auscultation. The disease progresses slowly and is ultimately fatal. In the disease process, fibrous scar tissue gradually replaces functional lung tissue. Very little is known about the causes of the disease, but a genetic component is suspected, given the higher occurrence in certain breeds. There is a similarly devastating form of pulmonary fibrosis in people that has become a focus of intense research.

Recently, veterinary specialists in respiratory diseases and imaging from the U.K. and the U.S. have joined their efforts to improve the diagnosis of pulmonary fibrosis. The AKC

Canine Health Foundation and the West Highland White Terrier Foundation of America are funding a multicenter study at the veterinary schools of the Universities of Pennsylvania and California, Davis in the U.S., and the Universities of Edinburgh and Glasgow in the U.K. At Penn's School of Veterinary Medicine, this project is guided by **Dr. Lesley King**, professor of critical care, and **Dr. Tobias Schwarz**, assistant professor of radiology.

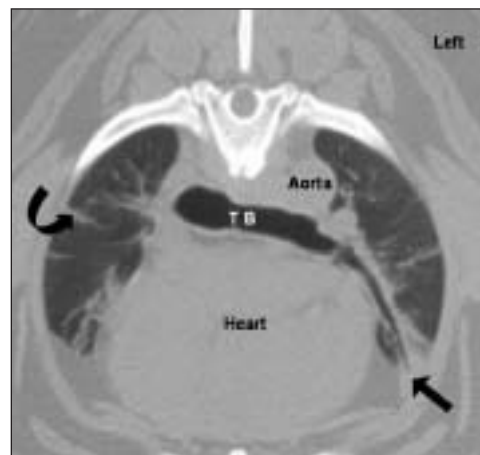
"Although pulmonary fibrosis in dogs, often referred to as 'Westie lung disease,' has been recognized by breeders and veterinarians in the U.S. and U.K. for many years, it remains a huge challenge for the patient, owner, veterinarian, and breeder of West Highland white terriers," says Dr. Schwarz. "Currently, accurate diagnosis requires a lung biopsy. Treatment options are limited to alleviation of clinical signs and control of concurrent pneumonia.

"The study hopes to establish pulmonary computed tomography as a specific diagnostic modality in dogs, which would allow the detection of disease in the early stage, when therapeutic approaches are most promising, decreasing the need of lung biopsies. High-resolution computed tomography of the lungs is the diagnostic modalities of choice for pulmonary fibrosis in people and showed already promising first results in dogs."

During the duration of the study, West Highland white terriers with suspected pulmonary fibrosis will receive an extensive clinical

work-up, including radiography, echocardiography, bronchoscopy, bronchial lavage, computed tomography, and a minimally invasive endoscopic lung biopsy. Genetic sample material will be collected for further analysis.

Veterinarians who wish to refer West Highland white terriers with suspected pulmonary fibrosis should call Dr. King or Dr. Schwarz directly at (215) 898-4680. The procedure is free of charge to the owner, and the completeness of the work-up offers an optimal basis for best treatment options and prognosis.



**Computed tomographic image of a dog with pulmonary fibrosis at the level of the tracheal bifurcation (TB). There is fibrosed lung tissue in the ventral parts of the lungs (straight arrow) and fibrin scars originating from the pleural surface (curved arrow). A main goal of the clinical study is to determine characteristic computed tomographic findings of pulmonary fibrosis.**

## Rabies in Pennsylvania

Last summer, alarmed by a surge in rabies cases reported in Pennsylvania in 2002 (especially among raccoons), officials at the Commonwealth's agriculture department decided they needed to take action. In mid-2003, the Oral Raccoon Rabies Vaccination (ORV) program was initiated in all or parts of 16 western Pennsylvania counties where rabid raccoons were most prevalent. Fixed-winged airplanes or helicopters dropped vaccine-laden fishmeal bait into sparsely populated areas, and trained employees targeted densely populated areas by hand.

Results reported in February 2004 were encouraging: the number of infected raccoons dropped from 288 in 2002 to 232 in 2003, a 20 percent decrease. A total of 428 animals tested positive for rabies in 2003, down from 492 animals in 2002—a 13 percent decline. (The 2003

results break down as follows: 232 raccoons, 80 skunks, 42 cats, 36 bats, 29 foxes, 3 cattle, 3 horses, 1 bobcat, 1 deer, and 1 groundhog.) In an effort to bring the numbers down even further, agriculture officials plan to extend the ORV program in 2004 to include the Westmoreland-Somerset county border.

Rabies, a viral disease affecting the central nervous system of mammals, causes a progressive inflammation of the brain—and is always fatal to both animals and humans once symptoms of the disease develop (unusual behavior, aggression, drooling, depression, partial paralysis). In the United States, wildlife is primarily affected; domestic animals usually are exposed by contact with infected wild animals. In recent years, raccoons in the eastern United States have been severely affected. Rabies can be spread

through saliva, bites or scratches, and abrasions. Humans can contract the virus through either domestic or wild animals.

Given these statistics, routine vaccinations for all dogs and cats are more important than ever. Of the 42 cats reported infected in Pennsylvania, the majority were most likely barn cats, who had regular daily exposure to wildlife in rural areas. Not a single case of rabies in a dog was reported, only proving how effective widespread canine vaccinations against the virus have been. Penn's School of Veterinary Medicine recommends vaccinating kittens against the virus at 12 to 13 weeks, again at 15 months, and every three years thereafter. For dogs, the School recommends rabies vaccinations at 13 to 16 weeks, at 15 months, and then, again, every three years.