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CHRONIC COUGH – A SIMPLE DIAGNOSTIC ALGORITHM WILL SOLVE YOUR CHALLENGING CASES

During the presentation the problem-oriented diagnostic approach will be demonstrated on a couple of patients with chronic cough. The importance and the limitations of thoracic radiography will also be discussed.

Chronic cough is a common problem why owners seek veterinary assistance both in dogs and cats. Chronic cough is seldom life-threatening, but it can have a very severe impact on the quality of life both the pet and the owner, especially at night and during exercise.

Localization of the problem is relatively simple, because cough can only be caused by the respiratory system, somewhere between the throat and the last rib. Based on the age and breed of the animal certain diseases become more likely. For example, elderly Yorkshire terriers have a high chance of suffering from a tracheal collapse, whereas Siamese cats often cough from non-infectious chronic bronchitis.

Though a thorough history taking and physical examination are important steps in a coughing pet, additional diagnostic tests are always necessary for establishing a diagnosis. The principles of my diagnostic algorithm is: I always start with the least invasive (but logical!) diagnostic test and only go to the next, more invasive one, if this has not provided a diagnosis. The least invasive diagnostic tests are generally also the cheapest ones.

The first diagnostic test in my hands is thoracic (and in especially in small breed dogs cervical) radiography. X-rays can be performed (at least in the most countries) with manual restraint, i.e. without sedation, of the animal. A number of diseases can be diagnosed based on radiographs, but the majority cannot. In the latter case the next diagnostic test is a parasitological examination of the feces. The test is most sensitive for detecting endoparasites if both flotation and Baermann larva isolation are performed

from a fecal sample of at least 3 different (consecutive) days. In endemic regions of certain parasites (such as in North America *Paragonimus kellicotti*) sedimentation technique is also necessary. Another easy test to perform is blood tests (antigen) for detecting heart worm (*Dirofilaria immitis*) and French heart worm (*Angiostrongylus vasorum*) infections in endemic areas. Other blood tests (such as hematology or biochemistry) would not be able to provide the cause of cough, however a severe eosinophilia can be a helpful hint.

Fluoroscopy is the last test that can be performed in an awake, non-sedated animal, and can give the diagnosis in dogs with dynamic problems of the large airways, such as tracheal collapse and bronchomalacia. Unfortunately, this technique is often only in a referral center available. As airway collapse in cats is extremely rare, fluoroscopy of the trachea and mainstem bronchi is only useful in dogs. The examination is performed during normal respiration and during induced cough (after a short manual compression of the trachea).

If all these tests have failed to identify the cause of cough, then we proceed to tests that require general anesthesia. The most useful technique is bronchoscopy followed by broncho-alveolar lavage under the same anesthesia. The broncho-alveolar lavage fluid should always be submitted for both cytological and bacteriological examination. During sedation detailed inspection of the throat is important, among others for evaluation of the laryngeal function, especially in elderly large-breed dogs that are predisposed to laryngeal paralysis (such as the Labrador retriever).

Recommended reading

- Scrivani PV. Nontraditional interpretation of lung patterns. Vet Clin Small Anim. 2009;39:719-732.
- Szatmári V. Feline lungworm infection. In: Little S, editor. August's Consultations in Feline Internal Medicine Consultations, Volume 7. Elsevier; 2015.