The management of suspected allergic airway disease

DO you think you have seen a dog with hay fever or asthma? It is well-accepted that allergic responses can trigger respiratory tract signs in humans and allergic triggers are suspected to underlie feline allergic bronchitis (Felis catus). In dogs, however, the potential for allergy as a trigger for respiratory signs is less generally accepted and gains little mention in standard veterinary textbooks, which understandably concentrate on the more readily-characterised disorders such as chronic bronchitis, neoplasia and infection. Since allergic disease is accepted as a cause of dermatological signs and gastro-intestinal signs, for example, there is no reason to suppose that allergy could not trigger airway signs in dogs, as it does in humans and other veterinary species. Published reports support this conclusion (Corcoran et al., 1991, Clerox et al., 2000).

Clinical signs associated with inflammation and irritation of the anatomic regions of the airways are outlined in Table 1. With all signs, of course, a wide differential diagnosis must be considered. Additional features that might indicate a possible allergic trigger include a seasonal or variabiltiy in clinical signs. As with hay fever in humans, pollen may be an aeroallergen for dogs and clinical signs may be worse only at certain times of the year. Similarly, signs may be triggered by exposure to allergen in certain areas of the normal environment.

Allergic disease is typically characterised by the presence of eosinophils in inflammatory infiltrates of tissue, representing an inappropriate acute response to begin antigens as a result of immune sensitisation. In nature these responses are typically directed at parasites such as intestinal helminths, and an important tenet of clinical management of all cases where allergy is suspected is to ensure that there is no associated parasitic disease through diagnostic testing, therapy or both.

Suspected and known causes of hypersensitivities in humans and animals include fungi, drugs, bacteria, food proteins, pollens, dust mite proteins and animal dander (Clerox et al., 2000). For allergic airway disease, there are no specific diagnostic tests available to identify any allergy or the triggering allergen, other than exposure: withdrawal-exposure regimes. Unfortunately, unlike the skin, the airways are not amenable to localised exposure testing, and this could, potentially, trigger serious and life-threatening responses.

It is unusual, therefore, to be able to definitively identify possible triggers. The suspicion of allergy, however, is increased upon identification of an eosinophilic component in diagnostic samples such as nasal flushes, pharyngeal swabs and bronchoalveolar lavage, although the presence of eosinophils should not be considered an absolute prerequisite.

Therapeutic options for suspected allergic airway diseases include allergen avoidance, irritant avoidance, anti-inflammatory therapy and glucocorticosteroids, such as bronchodilator. Allergic avoidance may be possible if a specific trigger can be recognised and a process of trial and error in exposing the patient to various regions of its normal environment may help. Similarly, a small proportion of cases appear to respond to avoidance diets, and there is a justification for an diet trial in most cases (Corcoran et al., 1991).

In all cases of inflammatory airway disease, additional irritants should be avoided if possible, including tobacco smoke, house dust and other noxious and irritating substances a dog might be exposed to through typical indiscriminate snifing. Anti-inflammatory drugs, particularly corticosteroids, are an important tool in managing allergic airway inflammation and can be administered orally or by inhalation. Similarly, bronchodilators (methyloxanthines, beta agonists) may be administered to relieve bronchospasm when there is small airway involvement and both oral and inhaled medications may be used.

**Case studies**

In this article, I will use some case examples to illustrate where allergy appeared to play a role in the generation of a variety of clinical signs related to the airway and a range of options for therapy.

*Jethro* a seven-year-old male English bull terrier. Jethro presented with a complicated history of chronic bronchitis and, in particular, airway collapse. The presenting complaint was of coughing on exertion, a possible allergic trigger was suspected and a process of trial and error in exposing the patient to various regions of its normal environment may help. Similarly, a small proportion of cases appear to respond to avoidance diets, and there is a justification for an diet trial in most cases (Corcoran et al., 1991).

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