Canine Lungworm in the UK: Angiostrongylus vasorum and beyond

National media campaigns, increased geographic distribution and number of clinical cases has put Angiostrongylus vasorum at the forefront of the minds of veterinary professionals. This is essential, given the potential severity of disease in infected dogs and its spread to parts of the country where it has not previously been routinely diagnosed. The effects of other nematodes on the respiratory systems of UK dogs however, should also be considered. Crenosoma vulpis, Eucoleus aerophilus and Oslerus osleri are canine lungworms endemic in the UK and capable of causing respiratory disease. This article considers the epidemiology, diagnosis, treatment and prevention of lung disease caused by A. vasorum and other canine lungworms endemic in the UK.

Key words: Lungworm, Angiostrongylus vasorum, Crenosoma vulpis, Oslerus osleri, Eucoleus aerophilus, dogs

Introduction

The spread of Angiostrongylus vasorum across the UK in recent years alongside drug companies having products licensed for its treatment and prevention, has led to raised awareness of this parasite among veterinarians and the public alike. This raised profile has been beneficial in reducing canine morbidity and mortality associated with infection, especially in parts of the country where it has not previously been endemic or routinely diagnosed. When considering differentials for respiratory disease in dogs however, other lungworms endemic in the UK should also be considered. These include Crenosoma vulpis, Eucoleus aerophilus and Oslerus osleri. Relatively little attention has been paid to the epidemiology and control of these infections. This article considers the relative risks to dogs posed by these lungworms, their diagnosis, treatment and prevention.

Angiostrongylus vasorum

The life cycle of A. vasorum is summarised in Figure 1. First stage larvae (L1) pass out in the faeces and require gastropod molluscs (slugs and snails) as intermediate hosts for further development. Infection occurs in canids when infective third stage larvae (L3) are ingested. This occurs most commonly through deliberate or accidental consumption of infected slugs or snails, or through infected amphibian paratenic hosts such as frogs (Morgan et al. 2005). Infection has also been demonstrated under experimental conditions to occur from ingestion of larvae present in slime trails, but the significance of this in natural transmission is unclear (Conboy et al. 2015).

The most common clinical presentation in dogs is mild to moderate pulmonary signs. The most significant of these are coughs (either productive or unproductive), and dyspnoea, with or without tachypnoea. A less common but more severe consequence of infection is a varying degree of coagulopathy (Morgan et al. 2005). The mechanism of this aspect of infection is still poorly understood but can lead to potentially life threatening signs including anaemia, haematomas, neuropathies, increased and prolonged post-operative bleeding and post traumatic haemorrhage. Although clinical signs associated with pulmonary hypertension have been reported in up to 15% of dogs with A. vasorum in a referral hospital (Borgeat et al. 2015), the prevalence is likely to be lower in primary care practice, estimated at below 5% (Koch and Willeson 2009). Although less common, these more severe signs can occur even if the parasite is present in low numbers. A. vasorum has spread rapidly over the past 10 years from endemic foci in Wales, the South East and South West of England, across the whole of the UK. Increased reporting of cases has been seen in domestic dogs, with 20% of practices across the country having seen at least one case over a 12 month period (Kirk et al. 2014). This increase in range and number of cases had occurred in the face of increased