Symptoms associated with intestinal ascaridida and strongylida infections in dogs

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SUMMARY

This study recorded the clinical signs found in 130 dogs infected with ascarids (T. canis and T. leonina) and 114 dogs infected with hookworms (A. caninum and U. stenocephala) from the Thessaloniki area. The majority (71.72%) of the 244 infected dogs showed no clinical signs. Anaemia, weakness and diarrhoea were evident in 16.80%, 11.40%, and 10.25%, of dogs respectively.

Keywords : Toxocara canis - Toxascaris leonina - Ancylostoma caninum - Uncinaria stenocephala.

INTRODUCTION

Adult ascarids live in the small intestine of dogs and feed on the intestinal content. They interfere with the absorption of nutrients and use nutrients, which are needed by the host. Fat absorption, villous heights and villous goblet cells numbers are all reduced. Light or mild infections produce no clinical signs, but in more severe infections the animals may show weight loss, dull hair coat and some may become anaemic, with a pot-bellied appearance, vomiting, diarrhoea and/or constipation may be apparent (ETTINGER 2000, BIRCHARRD and SHERDING 2000, SCHAER, 2003).

Hookworms produce anaemia, the severity of which depends on the intensity of the parasitic infection and age of the infected animal. Clinical signs like diarrhoea, weight loss, weakness, and poor growth are present in heavy infections. Light infections are usually asymptomatic (ETTINGER 2000, BIRCHARRD and SHERDING 2000, SCHAER 2003).

MATERIALS AND METHODS

In this study, 244 dogs infected with intestinal nematode parasites were examined for clinical symptoms. In order to investigate the presence of ascarids and hookworms in these dogs that were examined clinically, faecal samples were collected directly from the rectum of each dog, or were gathered by the dog’s owner and were handed over in fresh for the study. The samples were analysed before any anthelmintic therapy was administered.

Here, 116 cases of infected animals with Toxocara canis were investigated (110 dogs were under six months of age, six dogs were over six months of age, 57 dogs were male and 59 dogs were female), 14 cases of infected animals with Toxascaris leonina were noted (two dogs were under six months of age, 12 dogs were over six months of age, nine dogs were male and five dogs were female), there were 21 cases of animals infected with Ancylostoma caninum (19 dogs were under six months of age, two dogs were over six months of age, ten dogs were male and 11 dogs were female), and there were 93 cases of infected animals with Uncinaria stenocephala (50 dogs were under six months of age, 43 dogs were over six months of age, 49 dogs were male and 44 dogs were female).

All of these dogs had one internal parasite only.

In this study, all dogs were from the city of Thessaloniki. The presence of monospecific intestinal nematode parasites was made by a flotation method on the faeces, using a 1.2 gravity sodium nitrate solution. The dogs (table I) were evaluated for clinical signs.

RESULTS

In a total of 116 dogs infected with Toxocara canis, 78 (67.24%) cases of which had no symptoms, the following clinical signs were observed: In 20 (17.24%) cases there was weakness. In 17 (14.66%) cases there was pot-bellied appearance. In 9 (7.66%) there was dull, hair coat. None had skin lesions, In 17 (14.66%) cases there was anaemia. In 18 (15.52%) cases vomiting was observed, while in 9 (7.66%) cases diarrhoea was found. In one case there was constipation (0.88%), while in 3 (2.59%) there were respiratory problems.

In a total of 14 infected dogs by Toxascaris leonina, 13 (92.86%) of which had no signs, the follow clinical signs were observed :- In one dog (7.19%) a dull, hair coat was observed, while in another one (7.19%) diarrhoea was seen.

In a total of 21 infected dogs by Ancylostoma caninum nine (42.86%) had no signs while in nine dogs (42.86%) there was weakness. Two dogs had skin lesions (9.52%). In 13 (61.90%) cases anaemia was found, and in five (23.81%) diarrhoea occurred.

In a total of 93 infected dogs by Uncinaria stenocephala, of which 75 (80.65%) showed no signs, in four (4.30%) dogs there was weakness. In six (6.45%) there was a dull, hair coat. Eight had skin lesions (9.52%). In 11 (11.83%) cases there was anaemia, while in ten (10.75%) diarrhoea was found.

The results of clinical evaluation of dogs infected with ascarids and hookworms are shown in table II.
**SYMPTOMS ASSOCIATED WITH INTESTINAL ASCARIDIDA AND STRONGYLIDA INFECTIONS IN DOGS**

**Discussion**

The majority of all infected dogs were asymptomatic (71.72%). The most frequent symptoms associated with overall infections with ascarids and hookworms were pale colour mucosa (16.80%), weakness (13.52%) and diarrhoea (10.25%).

In dogs infested with *T. canis*, the majority were asymptomatic. The most frequent clinical signs in dogs infected with ascarids were weakness (15.38%), vomiting (13.85%), pot-belly (13.08%) and pale mucosa (13.08%). In dogs infected with hookworms, the most frequent symptoms were pale mucosa (21.05%), diarrhoea (13.16%) and weakness (11.40%).

Intestinal nematode parasites can cause a wide variety of clinical symptoms, depending on species of parasite, infection intensity and immune response of the host.

The first indication of *T. canis* infection in young animals is retarded growth and weight loss, a dull coat and often a pot-bellied appearance, vomiting, diarrhoea, abdominal pain due to visceral larval migration, anaemia, coughing, nasal discharge, and less commonly pneumonia. Immature worms may be present in the vomit of young infected animals (GEORGI et al. 1985, GEORGI et al. 1992; HENDRIX 1998; SPRENT 1956, SPRENT 1958; SYMONS 1989; GEORGI et al. 1985, 1992; HENDRIX 1998; SPRENT 1956, SPRENT 1958; SYMONS 1989; CHANDLER et al. 1991; TIBOR KASSSAI, 1999; ANDERSON 2000).

It is remarkable that pot-bellied appearance, vomiting, respiratory clinical signs and constipation appear only in *T. canis* infection while there are no skin lesions. In *T. leonina* infection one dog was symptomatic showing diarrhoea and dull hair-coat, while the remaining eight were asymptomatic.

As other authors have noted, a large number of *Anglystoma caninum* infections in pups or young dogs can cause acute or peracute disease, with bloody or black diarrhoea, anaemia and depression (GEORGI et al. 1990). Generally, *Uncinaria stenocephala* is less pathogenic than *Anglystoma caninum* as the latter engorge more blood (GEORGI et al. 1985).

**Conclusions**

Most of the dogs infected with *T. canis, T. leonina, A. caninum* and *U. stenocephala* were asymptomatic. The most frequently encountered clinical sign in toxocarosis was weakness, followed by anaemia, pot-bellied appearance and vomiting. Clinical signs in dogs infected with hookworms included anaemia, which was the most prevalent clinical sign, followed by diarrhoea and weakness. It should be noted that in ascarid infections, the most frequently observed clinical sign of the digestive tract was vomiting while in hookworm it was diarrhoea.

**References**