

# DETECTION OF ANCYLOSTOMA INFECTION IN APPARENTLY NORMAL POLICE DOGS

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## ABSTRACT

*Coprological examination of the dogs of Chennai Police squad brought for routine health check up at the Madras Veterinary College Teaching Hospital, was done using flotation technique. Out of 59 samples screened for the presence of parasitic ova, 21 samples revealed the presence of Ancylostoma eggs. The positive samples were subjected to EPG studies using McMaster technique. High egg counts were evident in a few dogs while others showed medium level of infection. Eggs were subjected to morphometric studies. The hematological findings were correlated with EPG and the results were analyzed. The area where the dogs were housed was surveyed and the environmental factors which contributed to the recurrence of Ancylostoma infection in these dogs were assessed. A corrective measure to prevent further infection from the soil such as treatment of soil with sodium hypochlorite was advocated to the police. The response of the dogs after treatment was also evaluated.*

**Keywords:** Ancylostomosis, Egg Morphometry, Harada Mori technique

## INTRODUCTION

Parasites possess exemplary potency in executing their survival process within the host. They elicit varying degrees of disease ranging from acute to chronic and sub-clinical which is an attribute due to the aforementioned

competency. The disease condition in a host depends upon sex, season, nutritional status, age and other host related factors. Often in a well-nourished and healthy animal the parasitic diseases are overlooked and not differentially diagnosed with their bacterial and viral counterparts producing similar signs. This case

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study throws light on one such scenario wherein heavy parasitic loads were encountered in apparently normal dogs.

## MATERIALS AND METHODS

Dogs of the Chennai Police squad undergo routine health check up at the Madras Veterinary College Teaching hospital. During such visits faecal examinations are carried out as a part of complete health check-up. Physical examination of the faeces was done before subjecting it to the simple flotation technique. The positive samples alone were subjected to McMaster's egg counting using triple chamber slide and Harada Mori's faecal culture techniques.

The eggs recovered by the flotation technique and larvae from faecal culture were then subjected to morphometric studies. Haematological parameters were also analyzed in positive cases. Epidemiological survey of the area was undertaken to elucidate the factors that contributed to the recurrence of infection and to initiate the control measures. Soil was also examined for the presence of infective larval stages. The efficacy of treatment and control were assessed by analyzing the egg counts post-treatment.

## RESULTS AND DISCUSSION

Physical examination of fecal samples revealed that few samples were tarry coloured with foul odour. Of the 59 dogs that were screened, 21 (36%) were found positive for

*Ancylostoma ova* by flotation technique. The egg per gram of positive samples ranged from 200 to as high as 1, 40,000.

Haematological parameters also correlated with the parasitological findings. The haematological parameter of the dog with the highest epg (1,40,000) is as follows: Hb- 9.7 mg/dl, Packed cell volume-23.7%, RBC count-  $3.06 \times 10^6$  / cu.mm, WBC count -  $8.2 \times 10^3$  / cu.mm, DC : Neutrophil 69%, Lymphocyte 30% Eosinophil- 1%.

The third stage larvae obtained by Harada Mori technique of faecal culture were identified morphometrically as *Ancylostoma sp.* Soil examination also revealed the presence of *Ancylostoma sp* larvae. Though the parasitological findings and haematological parameters suggested of heavy worm burden the animals were clinically normal. This condition is an attribute of the compensatory form of hookworm disease which occurs in well-nourished and managed dogs (Bowman, 1999).

Survey of the dog unit revealed an isolated area that was demarcated as "the stool area" for dogs. This area was prone to flooding during rains and since the faecal disposal was done only once in two days, there was eminent danger of the dogs being reinfected with *Ancylostoma* larvae. The warmth and moisture proved appropriate for the development of eggs to larvae as pointed by Soulsby, 1965. Hence initially, the soil in and around the pen and run was treated with one percent Sodium

hypochlorite (Lefkaditis, 2001). All the animals (both infected and non-infected for parasitic eggs) were immediately dewormed with PRAZITAL PLUS™, a combination of pyrantel, fenbendazole and praziquantel. Periodic deworming of the animals was advised. Further it was advised to dig a pit in the area where the dogs defecated to pile up the faeces and keep it covered until disposal. This was to avoid contamination of the run and pen area of dogs during rainy season with the infective larvae. Faecal samples were examined fourteen days post-treatment and the animals were found free of infection as shown in the following table.

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**TABLE - 1**  
**Egg counts and level of control of infection after implementation of suggested measures**

S.No	Case details	Pre-treatment egg counts(EPG)	Post-treatment egg counts(EPG)
1	Golden Retriever/4years/ Female	1,40,000	0
2	Rottweiler/12 years/ Female	2800	0
3	Labrador / 7 months/ Male	300	0
4	German shepherd/ 7 months/ Female	520	0
5	Labrador/ 10 months/ Male	200	0
6	German shepherd/ 10 years/ Female	0	160
7	Labrador/ 1 year/ Male	400	0
8	Labrador/ 8 years / Male	500	0
9	Doberman/ 8 years/ Female	920	0
10	Labrador/ 4 years/ Male	320	0
11	Doberman/ 4 years/ Female	400	0
12	Labrador/ 6 years/ Male	800	0