



# Microfilariasis in dogs

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Dogs are much prone to parasitic infection. Although most of the parasites do not produce an acute fatal disease, the growth, work and breeding efficiency of the dog is adversely affected. Hence parasitic diseases in dogs warrant maximum attention in their rearing and management aspects.

Of the several parasitic diseases of dogs, filariases caused by *Dirofilaria immitis*, *D. repens*, *Dipetalonema draconculoides*, *D. reconditum* and *D. grassii* are of considerable importance. The larval stages shed by these filarial worms into the circulation are called microfilarias. Instances of infection with microfilaria of filarial worms are assuming an increasingly major role in the health-care of dogs. Microfilarias of filarial worms are normally transmitted to dogs through the bites of infected mosquitoes of the genera *Culex*, *Anopheles* and *Aedes*.

The adult filarial worms have different predilection sites and specific diagnosis of the adult filaria and thus the pathogenesis of infection can only be made after the death or slaughter of the host. The study on microfilaria in the peripheral circulations helps to identify the adult filarid even though they have very little morphological differences.

A study was conducted by the author on the prevalence, diagnosis, clinical pathology and treatment of microfilariasis in dogs in Thrissur and was able to conclude the following facts on the microfilaria that could be isolated from dogs.

Microfilariasis was prevalent in dogs throughout the year and its incidence happened to be

high during the summer months.

For diagnosis of microfilariasis, the Modified Knott's Technique was more reliable and accurate even though the wet film examination was very much useful for preliminary screening.

The specific diagnosis of the type of microfilaria was based on morphology and was confirmed by the histochemical study. Microfilaria of *D. repens* was the only microfilaria encountered in this study.

Histochemical differentiation was found to be the most accurate, specific and reliable staining technique which revealed that the microfilaria undoubtedly belonged to *D. repens*. The acid phosphatase activity was localised at the anal pore region in microfilaria having wriggling motion. While in those with progressively forward types the activity was localised at the anal pore regions as well as diffusely stained at the central body region of microfilaria.

The filarids are classified as pathogenic and non pathogenic to your pet. The microfilaria of *D. repens*, even though it is non pathogenic to your dog, it poses a zoonotic threat to the human population. Hence it has to be controlled.

Haematological studies showed that the infection caused marked increase in Erythrocyte sedimentation rate, Total leucocyte count, Eosinophils and lymphocytes. Haemoglobin, Packed cell volume, TEC and Neutrophils were reduced.

Biochemical studies revealed that there were marked increase in serum total protein and Globulin levels in microfilaraemic dogs, while Albumin fractions and A/G ratio were greater in non microfilaraemic.

Dogs. There were also significant increase in AST and ALT values in microfilariasis. BUN and Serum urea also showed slight elevations.

Treatment trials with Ivermectin at 200 mg/kg b.w and 333 mg/kg by b.w. was found to be equally effective and there were total clearance of microfilaria within 24 hours in majority of cases. The treatment also resulted in marked reduction in body temperature, increased appetite and reduced respiratory distress (cough).

Chewable tablets of Milbemycin Oxime at the dose rate of 0.5 mg/kg b.w was found to be the most effective drug against microfilaria of *D. repens*. Clinical Signs like increased body temperature and deprived appetite got corrected with a single treatment within 24 hours.

Levamisole injection given at the dose rate of 7.5 mg/kg b.w as single dose was found to be least effective. Moreover, clinical signs persisted even after treatment, while Levamisole at 7.5 mg/kg b.w daily for 7 days was found to be more effective than the single dose. Maximum microfilarial clearance was attained on the 7th day treatment. The efficacy was almost similar to those of Ivermectin and milbemycin oxime.

