

## A Rare Microfilaruria Case in a Dog Caused by *Dirofilaria immitis* <sup>[1]</sup>

(Bir Köpekte *Dirofilaria immitis*'in Neden Olduğu Nadir Bir Mikrofilariüri Olgusu)

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### Dear Editor,

Dirofilariasis is a vector borne disease "inexorable dreaded threadworm" accepted as the most important parasitic disease of canids caused by *Dirofilaria immitis* <sup>[1]</sup> with zoonotic potential and endemic in many parts of Europe, including Turkey <sup>[2-4]</sup>. The clinical symptoms and onset of the disease depend on of the adult worm burden, host-pathogen response, the duration of infection, and level of exercise <sup>[1]</sup>. Most of the cases have a history of weight loss, lethargy, diminished exercise tolerance, cough, dyspnea, syncope, poor condition, and abdominal distension <sup>[5]</sup>. Due to the right heart failure jugular venous distension and pulsation typically accompany hepato-splenomegaly, and ascites commonly seen in dogs with dirofilariasis <sup>[6]</sup>. However, to date presence of microfilariae in the urine has presented as a rare condition in two cases from dogs <sup>[7,8]</sup>. Thus, it is aimed to present this third case report of canine microfilaruria in the world within this lettering.

A male, 10-year-old, 20 kg, mix breed dog was brought to the Veterinary Teaching Hospital on November 2018 with the chief clinical signs of stranguria, hematuria, and constipation.

Besides the aforementioned symptoms the dog was in a good condition and any other abnormalities were seen in the physical examination. However, urinary bladder carcinoma was suspicioned because of the severe hematuria. Blood and urine samples were collected for routine analysis. The patient checked for hematological and biochemical analyzes. Same as thoracic and abdominal x-rays with echocardiography were performed. Laboratory findings

both whole blood count and serum biochemical profile with revealed as normal. Only enlarged caudal lobar arteries with tortuous in appearance were seen in the lateral thoracic x-ray. The echocardiography of the dog assessed any right heart enlargement or abnormalities in the right ventricular end-diastolic dimension and septal or right ventricular free wall thickness.

On gross clinical examination, the urine was detected as brownish-red (Fig. 1-a). During the microscopic examination live microfilariae were seen in the voided urine sediment (Fig. 1-b). Later peripheral blood smears stained with Giemsa were examined for microfilaremia. Same as microfilariae were also seen in the stained blood smear (Fig. 1-c). Finally, our diagnosis was serologically confirmed within the positive rapid heartworm antigen test (Fig. 1-d) and immediately a treatment protocol according to the "American Heartworm Society Guidelines for the Current Heartworm Infection Management in Dogs" was started to the patient <sup>[9]</sup>. The dog was being well after the second week of treatment and the urine sediment turned back to normal (Fig. 1-e).

Contrary other cases of microfilaruria in dogs <sup>[7,8]</sup> our patient was not represented renal failure or lower urinary tract infection. Glomerulonephritis caused by antigen-antibody complex deposition in the kidneys is common in heartworm-infected dogs <sup>[1]</sup> and progression to renal failure, however, is uncommon <sup>[1,10]</sup>. This situation results in a measurable proteinuria (albuminuria), and heartworm antigen can be detected in the urine of infected dogs <sup>[1]</sup>. Therefore, microfilaruria could be expected as in the case herein due to this condition.



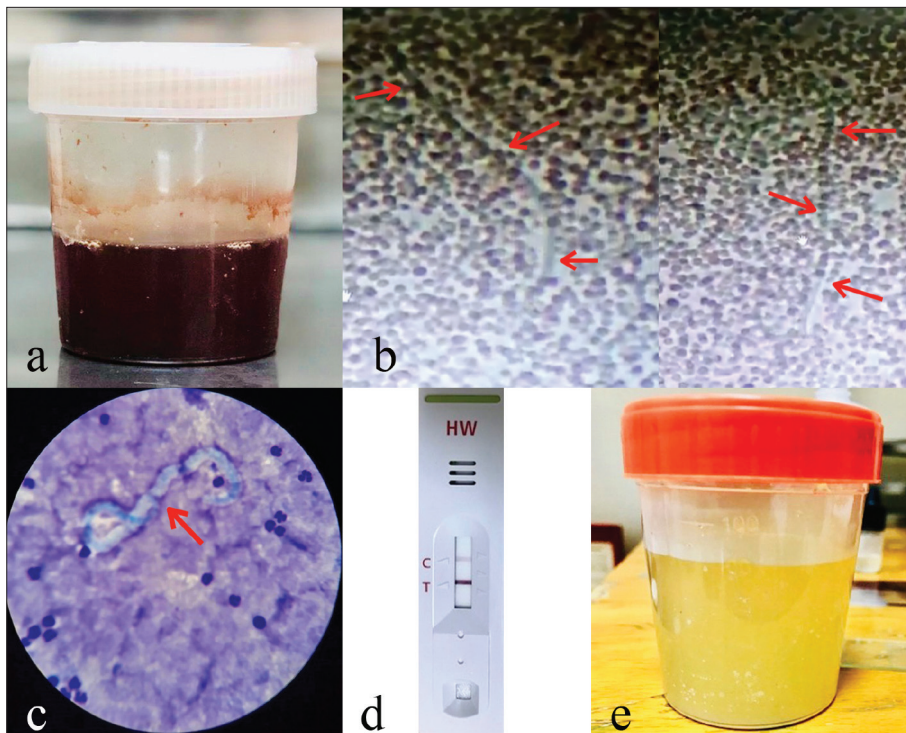
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**Fig 1.** Severe hematuria of the patient (a), live microfilariae (red arrows) in the voided urine sediment (b), microfilariae in the stained blood smear (c), view of the result of rapid heartworm antigen test (d), post-treatment urine (e)

In conclusion, prevention with controlling strategies of dirofilariasis is quite important to reduce their diffusion in animals and humans. But at most, making the true diagnosis makes these controlling strategies vitally important. Therefore, we wanted to draw extra attention on urine analyzes in dogs suspected with dirofilariasis within this third canine microfilaruria case in the world.

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