

Capillaria* sp. in a cat*Marciélen Pagnoncelli, Raqueli Teresinha França, Danieli Brolo Martins, Flávia Howes, Sonia Teresinha dos Anjos Lopes & Cinthia Melazzo Mazzanti****ABSTRACT**

Background: The family Capillariidae includes several species that parasitize a wide variety of domestic and wild animals. Species such as *Capillaria plica* and *Capillaria feliscati* are found in the bladder, kidneys and ureters of domestic and wild carnivores. These nematodes are not still well known in Brazil, but have a great importance for studies of urinary tract diseases in domestic animals, mainly cats. The parasite's life cycle is still unclear, may be direct or involve a paratenic host, such as the earthworm. Eggs are laid in the bladder and thus are discarded to the environment, where the larvae develop and are ingested by hosts. It is believed that the ingestion of soil and material contaminated with infective larvae derived from the decomposition of dead earthworms may be an alternative pathway for infection of animals. It has been reported in dogs a pre-patent period between 61 and 88 days. In Germany, the prevalence of *C. plica* in domestic cats was about 6%, with higher incidence in males, whereas in wild cats the prevalence of *C. plica* and *C. feliscati* was 7%, also with higher incidence in males. In Brazil, the first report of *Capillaria* sp. in a domestic cat was only done in 2008. Thus, the purpose of this report is to describe the importance of urinalysis in cases of suspected capillariasis and alert small animals clinicians on the occurrence of this disease as a cause of lower urinary tract disease feline (LUTDF) in the country.

Case: It was attended at the Veterinary Hospital of the Universidade Federal de Santa Maria (HVU-UFSM), a male adult feline, mixed breed, presenting urinary incontinence and dysuria. We requested additional tests, including urinalysis, which was observed during the examination of sediment, eggs similar to *Capillaria* sp. The species was not determined due to the morphological similarity between the eggs of *Capillaria plica* and *Capillaria feliscati*. The results of the serum biochemistry were adequate for the feline species, while the CBC showed only eosinophilia. The animal was treated with a single dose of ivermectin (0.2 mg / kg SC), but the animal died 21 days after initial treatment.

Discussion: Cases of *Capillaria* sp. in the bladder of dogs and cats are rarely reported because, in most cases, clinical signs are not observed due to low parasite load that they show. However, when there are clinical signs can be observed polyuria, dysuria, cystitis, and inappropriate urination. Infections are usually self limiting, however, in the presence of clinical signs, treatment should be instituted. In the present case, the animal had only urinary incontinence and dysuria. The collection of the urine sample through cystocentesis is indicated in suspected cases of capillariasis, to avoid contamination of urine with feces and eggs of *Trichuris* sp. what may lead to a misdiagnosis. The urinary sediment is a qualitative test for diagnosis of this infection. Although the infection by the different species of *Capillaria* be uncommon, it is important that clinicians be alert for refractory cases of LUTDF that don't answer to the conventional treatment, performing urinalysis for possible occurrence of *Capillaria* sp. eggs in the urinary sediment.

Keywords: feline, urine, urinalysis, parasite, capillariasis, *Capillaria* sp.

INTRODUCTION

Capillaria have been found parasitizing the urinary tract of several carnivorous species [5]. Its life cycle is unclear. It can be direct or involve a paratenic host as the earthworm. Females lay eggs in the bladder and these are passed through the urine, and after that they become larvae in the environment and infect new animals by the oral route [4]. Thus, the purpose of this report is to describe the importance of urinalysis in cases of suspected capillariasis and alert small animals clinicians on the occurrence of this disease as a cause of lower urinary tract disease feline (LUTDF).

CASE REPORT

A male adult feline, mixed breed was attended, presenting urinary incontinence and dysuria. The owner reported that he found the animal on the street one month ago and had no further information on it. The animal showed good nutritional status. Initially, the urine was collect by spontaneous form. In the sediment of the sample was possible to observe oval structures, colorless cap and operculated. There was suspicion of possible fecal contamination at the time of sample collection; new collection was requested by cystocentesis. In addition, it was also carried out blood sampling for CBC and serum biochemical tests.

After confirming the diagnosis, the animal remained hospitalized. The cat received a single dose of ivermectina¹ (0.2 mg/kg subcutaneously) as soon

as it confirmed the compatibility of the eggs with *Capillaria* sp. Fifteen days after this treatment, the animal showed no longer structures compatible with parasite eggs.

DISCUSSION

In cats the cases of *Capillaria* sp. in the bladder are rarely reported because, in most cases, the clinical signs are not observed due to low parasite load that they show [1]. The animal reported showed urinary incontinence and dysuria, which were the only clinical signs observed [8].

Capillaria plica infection may aggravate a pre-existing renal disease [6]. In this feline patient, however, the renal biochemical profile revealed values within the normal established for the species.

Dantas *et al.* [3] reported a case of cat capillariasis in which the urine sample showed moderate changes. In the present report, urinalysis also showed cytologic and chemical changes, the density was above 1040, pH of 7.0, and traces of protein. It is also observed triple phosphate crystals (+++) and the presence of eggs characterized as *Capillaria* sp. (Figure 1). The eggs had 58.38 μm of length and 29.19 μm of width [2]. In addition, the CBC revealed eosinophilia. The other parameters were within normal reference values for the feline species.

The urinary sediment is the only diagnostic tool that allows identification of *C. plica* [6]. However, cystocentesis should be used in suspected cases of



Figure 1. Urinary sediment (40x), eggs of *Capillaria* sp. (58.38 μm of length and 29.19 μm of width). Male adult feline, mixed breed.

capillariasis to avoid fecal contamination with eggs of *Trichuris* sp., what may lead to a misdiagnosis [3]. Therefore, we requested a second urine sample, at this moment collected by cystocentesis. Still, the release of eggs of *Capillaria plica* can vary from day to day. So, in suspected cases, more than one sediment examination should be performed [6]. The infections are usually self-limiting, but in the presence of clinical treatment is necessary and may be composed of a single dose of ivermectin (0.2 mg/kg) subcutaneously or fenbendazole (50 mg/kg), orally [9].

Although the infection by the different species of *Capillaria* be uncommon in Brazil, it is important

that clinicians be alert for refractory cases of LUTDF that don't answer to the conventional treatment, performing urinalysis for possible occurrence of *Capillaria* sp. eggs in the urinary sediment.

INFORMATIVE NOTES

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Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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