# *Dioctophyma renale* IN A PATIENT LIVING IN MATO GROSSO DO SUL

*[Dioctophyma relane em um paciente residente de Mato Grosso do Sul]*

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**ABSTRACT –** This paper aims to report the presence of *Dioctophyma renale* in a rural region of Mato Grosso do Sul, as well as ways of diagnosis and treatment. The *Dioctophyma renale* is the largest known nematode and contamination to the host occurs after raw fish intake and oligochaetes harboring the infective larval form. The animals carrying the parasite do not have specific clinical signs, making it necessary to use other means of diagnosis such as an ultrasonography and urinalysis. A female dog was seen on a farm in Mato Grosso do Sul, with prostration, stiffness of the limbs and touch sensitivity in the abdominal area. After conducting laboratory tests it was possible to confirm the presence of parasite eggs in the urine and a cylindrical shape in the right kidney, visualized through the ultrasonography, suggesting the presence of adult worms. As a treatment the option chosen was the surgical removal of the parasite.

**Keywords**: nematode; canine; kidney.

**RESUMO –** O trabalho tem como objetivo relatar a presença da Dioctophyma renale, em região rural de Mato Grosso do Sul, bem como as formas de diagnóstico e tratamento. D. renale é o maior nematoide conhecido e a contaminação ao hospedeiro ocorre após a ingestão de carne crua de peixe e oligoquetas albergando a forma larval infectante. Os animais portadores do parasita não apresentam sinais clínicos específicos, sendo necessária a utilização de outros meios de diagnósticos, como ultrassonografia e urinálise. Foi atendido um cão, fêmea, proveniente de uma propriedade rural de Mato Grosso do Sul, apresentando prostração, enrijecimento dos membros e sensibilidade ao toque em região abdominal. Após a realização de urinálise foi constatada a presença de ovos do parasita na urina e através da ultrassonografia foi visualizada uma forma cilíndrica no rim direito, sugerindo a presença do verme adulto. Como tratamento optou-se pela remoção cirúrgica do parasita. é possível concluir que os métodos de diagnóstico e tratamento empregado são eficazes para sobrevida do paciente.

**Palavras-Chave:** nematoide; canino; rim.

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## INTRODUCTION

*D. renale* (Goeze, 1782) is the largest known nematode, popularly called the giant renal worm, it has a cosmopolitan occurrence. Its epidemiological chain is considered an indirect cycle because involves many species (Figueiredo et al., 2013).

The dogs are infected by D. *renale* after raw fish intake and the oligochaetes shelter the infecting larval form. After the contamination the parasite lodges itself, mainly, in the kidney. Although in can be found in the ectopic form in different places, for instance, in abdominal cavity. (Maia et al., 2012; Hermeto et al., 2012).

The animals carrying the parasite don't have specific clinical signs, however in many cases, dysuria and hematuria are presented. The most often used means of diagnosis are ultrasonography and the identification of eggs in the urine, this way is possible to assess the kidney anatomic structures and to confirm the presence of parasite (Cottar et al., 2012).

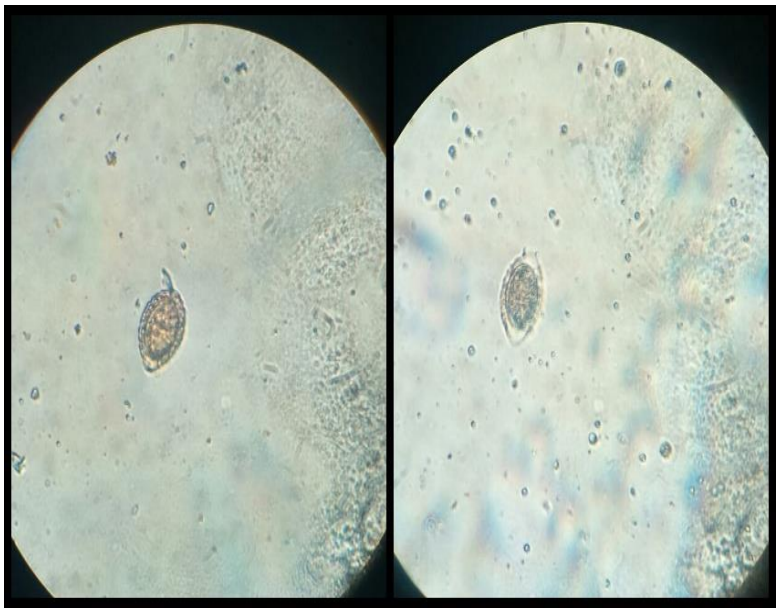
After the diagnosis confirmation, stricken kidney nephrectomy is the most indicated therapy, presenting excellent recovery. The clinical treatment doesn't show effective results (Secchi et al., 2010; Hermeto et al., 2012).

This study aims to report the presence of *D. renale*, in the rural region of Mato Grosso do Sul, demonstrating means of diagnosis and treatment used on the maintenance of the patient health

## CASE REPORT

It was assisted at the Veterinary Hospital of Centro Universitário da Grande Dourados (HV, UNIGRAN), Dourados, MS, a mongrel uncastrated 3-years-old female dog, weighing 15 kilograms, fed with feed and rests of homemade food. The patient was resident of a rural property and had free access to all extension of it. The animal was sent to assistance having prostration and hematuria. During physical exam it was observed dyspnea, prostration, mydriasis, stiffness of the limbs, touching sensibility at the abdominal region, right-ocular region swelling and rectal temperature of 38,1ºC.

A CBC was done and revealed thrombocytopenia valuing 85.000 µL (200.000 a 500.000 µL. For determining the hepatic function, alanine aminotransferase (ALT) was dosed, and showed increased in the values of Ul (10 a 88 Ul. Still in the urinalysis, from sediment, were found eggs of the parasite (Picture 1).



Picture 1. Eggs of adult parasite of D. *renale* in a dog urine sediment, having brown color, elliptical form, thick and wavy shell and bipolar caps. (Objetcve de 40 x).

After the eggs were found on the sediment, an abdominal ultrasonography was done, and hepatomegaly was observed, cystitis and a cylindrical form in a topographic position on the right kidney, suggesting the presence of the adult worm.

As treatment, it was chosen the parasite surgical removal (Picture 2) through nephrectomy technique on the right kidney, removing a *D. renale* with about 50 cm (Picture 3).

Picture 2. Right Kidney after nephrectomy presenting renal parenchyma loss replaced by the nematode.

Picture 3. *D. renale*, removed from inside the renal capsule, measuring about 50cm length.

After the surgery, was prescribed fluidotherapy (Ringer with Lactate, 250 ml, IV, BID), Tramadol (Tramal® 2 mg/kg, IV, TID) Dipyrone (D500®, 25 mg/kg, IV,TID), Ampicillin (Ampicilina Vetnil® 20 mg/kg IV TID), Enrofloxacin 10% (Zelotril®, 5 mg/kg, IV, BID), Ketosteril® 1 pill VO SID, Homeopatic (RimSigo® 2 sprayed, VO, TID), meloxican 2% (Maxican 2%, 0,1 mg/kg IV SID), Omeprazole (0,7 mg/kg, SID), Maxitrol Colírio® (one drop on the right eye, BID).

After fifteen days from the surgery, the animal returned to the removal of surgery points and evaluation, where it was possible to observe clinical improvement. It was done a biochemist exam from the renal function, in which the numbers were

within the reference range, the animal was discharged.

## DISCUSSION

The animal stricken by this parasite live close to watery, necessary factor to the evolution of the parasite, this way affirm stray dogs and with low selective eating habits are the most frequently stricken (Alves et al., 2007). In a retrospective study it was conclude that 57,14% of dogs, in a total of 7 dogs had street access (Cottar et al., 2012).

After doing the study of 16 cases in dogs with disctofimose, it was obtained the result referring itself that the age stricken is between 1 and 9 years, wherein 62,5% were female, 87,5% were mongrel and 75% were stray animals. In this report, the patient lives in a rural property, having access to all property, including rivers and lakes, together with the fact of being fed with raw fish by the owner (Kommers et al., 1999).

The parasite found in this female dog measured 50 cm, being possible to conclude that it was a female specie, since que male parasites are smaller, measuring about 35 cm length (Taylor et al., 2010).

This illness don't have specific clinical signals (Silveira et al., 2009), however, some animals can show hematuria, dysuria and abdominal pain(Cottar et al., 2012). The prostration and stiffness of the limbs can be considered pain signals. Parasites found in the kidney, may cause arching of the back and severe pain to the host (Colpo et al., 2007).

The trombocitopenia and the increase of ALT were found not suggestive to the presence of D. *renale.* Parasitized animals with this nematode don't have significant changes on CBC, hepatic and renal function, making clear that urea and creatinine keep within its normal parameter, in face of the stricken being unilateral, mainly on the right kidney, occurring the balance by the non-affected kidney (Kano et al., 2003).

The diagnosis is obtained, most of the time, occasionally in surgeries or necropsy (Sousa, et al., 2011). It's possible to observe the eggs in patients subjected to (Alves et al., 2007). However, ultrasonography is considered the final examination, cause it's possible to find the imaging signals of the parasite (Cottar et al., 2012).

The treatment for parasitized animals by this nematode is the stricken kidney nephrectomy, since clinical treatments are not effectives, after all the parenchyma of ill kidney is destroyed, leaving just the capsule as a distended bag with the worm, losing its functional part (Taylor et al., 2010; Secchi et al., 2010).

## CONCLUSION

The urinalysis associated to ultrasonography shows to be an effective method presumptive diagnosis of D. *renale.* Unilateral Nephrectomy makes possible that the patient have a favorable prognosis, once one kidney keeps the functional compensation homeostatic

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