

## First Case Report of *Diocophyme renale* (Goeze, 1782) in a Dog in İstanbul, Turkey

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**Abstract:** A female specimen of *Diocophyme renale* was recovered from the abdominal cavity of a stray dog necropsied in İstanbul, Turkey on 8 June, 1999. The nematode was 55.5 cm in length, with a diameter of 0.7 (0.6-0.8) cm. This is the first case report of *D. renale* from Turkey.

**Key Words:** *Diocophyme renale*, dog, İstanbul, Turkey

### İstanbul'da Bir Köpekte İlk *Diocophyme renale* (Goeze, 1782) Olgusu

**Özet:** Bu çalışmada Türkiye'de ilk kez rastlanan bir *Diocophyme renale* olgusu rapor edilmektedir. Parazite, Patoloji Anabilim Dalı'nda 8 Haziran 1999'da nekropsisi yapılan bir sokak köpeğinin karın boşluğunda serbest olarak rastlanmıştır. Sağ böbreğe yakın olarak bulunan parazitinin dişi, 55.5 cm uzunluğunda ve 0.7 (0.6-0.8) cm çapında olduğu saptanmıştır.

**Anahtar Sözcükler:** *Diocophyme renale*, köpek, İstanbul, Türkiye

### Introduction

*Diocophyme renale* has been reported from various countries (1-8) and is known as the largest parasitic nematode of domesticated animals (7,8). The predilection site of this nematode is the kidney parenchyma, but it is also found in the abdominal cavity (8), subcutaneous tissues (1,2), stomach (3), mammary gland (4) and other organs (8,9). Its larvae have also been reported from human subcutaneous tissues (2,8).

The worm has a blood-red colour; the male measures up to 35 cm by 0.3-0.4 cm and female up to 103 cm by 0.5-1.2 cm (8). Its size and predilection sites are sufficient for identification (7).

Females are oviparous; the eggs are passed in the urine and are ingested by the annelid intermediate host. The final host (fish-eating carnivores such as foxes, minks and dogs as abnormal hosts) is infected by the ingestion of an intermediate host or a paratenic host. In the final

host, the infective larvae migrate through the intestine wall, develop in the body cavity and penetrate the kidney (7,8). The prepatent period has been considered to be up to 2 years, though without certainty (7).

Urquhart et al. (7) reported that usually only one kidney is affected in domesticated animals and there may be up to four worms in a kidney. It was reported that a total of 26 specimens were recovered from various locations in a dog from Brazil (3).

The mature worm in the kidney destroys the kidney parenchyma. If it is located in the abdominal cavity, it causes chronic peritonitis, adhesions and damage on the surface of the liver (10). No clinical signs are usually seen but in some cases, depending on the localization of the worm, dysuria, haematuria and lumbar pain can be observed. The eggs of the nematode can be seen in the urine if the worm is located in the kidney. For treatment, the worm is surgically removed from confirmed cases (7-10).

### Case history

An adult female stray dog, which was hospitalized due to myopathy and euthanized because of failure to respond to treatment, was necropsied in the Pathology Department on 8 June, 1999. At necropsy, a nematode located freely in the abdominal cavity near the right kidney was seen. The nematode was female and 55.5 cm by 0.7 (0.6-0.8) cm in dimensions (Figures 1a and 1b). It was identified as *Diocotophyme renale* according to the literature (7-9). On the hepatic capsule of the right lobe of the liver, ruptures 1-1.5 cm in length were seen and there was no renal involvement.

### Discussion

Oytun (10) mentioned that the parasite was seen in a dog in İstanbul according to his personal communication with İ.H.Çelebi without any description or figure of the parasite. However, there was no report on the presence of *D. renale* in Turkey. Maxie (11) reported that the nematodes were found in the abdominal cavity in most cases. Erosions and ruptures on the hepatic capsule were recorded in *D. renale* infections (8,9,11). In the present case, the specimen was also found in the abdominal cavity and similar lesions were seen. The morphological peculiarities of the specimen were in line with the literature (7-9).



Figure 1a and 1b. *Diocotophyme renale* recovered from the dog.

## References

1. Mattos, D.G.Jr., Pinheiro, J.: *Diectophyme renale* (Goeze, 1782) in subcutaneous tissue in the inguinal region of a dog. *Arq. Bras. Med. Vet. Zootec.*, 1994; 46 (3): 301-302.
2. Gutierrez, Y., Cohen, M., Machicao, C.N.: *Diectophyme larva* in the subcutaneous tissues of a woman in Ohio. *Am. J. Surg. Pathol.*, 1989; 13 (9): 800-802.
3. Miranda, M.A., Benigno, R.N.M., Galvao, G.R., De Oliveira, S.A.L.: *Diectophyme renale* (Goeze, 1782): ectopic localization and high intensity of infection in *Canis familiaris* from the State of Para. *Arq. Bras. Med. Vet. Zoot.*, 1992; 44 (2): 151-153.
4. Saumell, C.A., Fuse, L.A., San Rome, C.A.: Case report of *Diectophyme renale* in the mammary gland of a bitch. *Rev. Med. Vet. B. Aires*, 1990; 71 (4): 162-164.
5. Pineda Lopez, R.: First report of *Diectophyme renale* (Nematoda: *Diectophymatidae*) in Tabasco, Mexico. *Anal. Inst. Biol., Zool., Univ. Nac. Aut. Mexico*, 1984; 55 (2): 307-310.
6. Le Riche, P.D., Soe, A.K., Alemzada, Q., Sharifi, L.: Parasites of dogs in Kabul, Afghanistan. *Br. Vet. J.*, 1988; 144 (4): 370-373.
7. Urquhart, G.M., Armour, J., Duncan, J.L., Dunn, A.M., Jennings, F.W.: *Veterinary Parasitology*. Longman Scientific and Technical, UK, pp. 96-97, 1987.
8. Soulsby, E.J.L.: *Helminths, Arthropods and Protozoa of Domesticated Animals*. Bailliere Tindall, UK, pp. 326-327, 1982.
9. Soulsby, E.J.L.: *Textbook of Veterinary Clinical Parasitology*, vol:1 Helminths. Blackwell Scientific Publications, UK, pp. 95-98, 1965, (vol 1).
10. Oytun, H.Ş.: *Tıbbi Parazitoloji*, A.Ü.Tıp Fak. yayını: 69, Kültür Matbaası, p.463,1958.
11. Maxie, M.G.: Urinary system. In K.V.F. Jubb, P.C. Kennedy, N. Palmer (ed), *Pathology of Domestic Animals*. 4<sup>th</sup> ed. Academic Press Inc., USA, pp. 517-518, 1993, (vol 2).