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THE FIRST CLINICAL CASE OF HEPATOZOONOSIS IN A DOMESTIC CAT IN ITALY

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INTRODUCTION: *Hepatozoon* spp. is a vector-borne protozoa affecting several animal species all over the world. Hepatozoonosis in felids is almost unknown, but recently three species (i.e. *Hepatozoon felis*, *Hepatozoon canis* and *Hepatozoon silvestris*) were molecularly isolated from European domestic and wild felids (Giannelli et al., 2017. Ticks Tick Borne Dis, 8:721–24; Hodžić et al., 2017. Parasitology, 144:650-61). Infected felids are usually asymptomatic, and some clinical cases have been newly reported in domestic cats from Central Europe (Kegler et al., 2018. Parasit Vectors, 11: 428; Basso et al., 2019. Parasitol Int, 72:101945). We describe the first clinical case in Italy of hepatozoonosis in a domestic cat with a peculiar clinical picture.

MATERIALS AND METHODS: An 11-years old European short-hair cat, living in a hilly area of the Piedmont region, was hospitalized for a severe intestinal intussusception caused by a sessile endoluminal nodule in the jejunum. Blood samples were collected for haematology and clinical biochemistry; the intestinal nodule was surgically removed and histologically evaluated. In addition, molecular investigations targeting *Hepatozoon* SSU-rDNA were performed on surgical samples. Haematology was normal and the biochemical profile showed increased creatine phosphokinase (CPK: 2371 U/L; reference range: 52-542 U/L). Rare *Hepatozoon* gamonts were observed in granulocytes in the blood smear, then molecularly confirmed. Histological sections of the intestinal nodule revealed a severe inflammatory reaction characterized by chronic ulcerative enteritis with a polypoid proliferation and severe lymphangiectasia. Many inclusions similar to protozoan replicative forms were observed in enterocytes near the lumen with a high burden of infection in all histological sections. Molecular investigations in tissue samples confirmed *Hepatozoon silvestris* infection. After surgery, the patient was treated with doxycycline at 5 mg/kg/q24h for 30 days. The cat progressively improved and was fully recovered after two weeks with normalization of CPK.

RESULTS AND CONCLUSIONS: This is the first case of hepatozoonosis in a domestic cat in Italy. The unique manifestation of the infection makes this cat particularly interesting. Clinical signs are usually related to the tropism of *H. silvestris* for skeletal muscles and myocardium. In this case, the intestinal nodule was probably due to the inflammatory local reaction of the host around the site of protozoa penetration; the increased CPK might suggest subclinical myositis. Excision of the intestinal nodule and resolution of the intussusception was life-saving in this cat. Doxycycline treatment might have contributed to clearing the *Hepatozoon* infection.