



## Canine Protothecosis in the North of Italy: 4 Cases (2009–2011)

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Protothecosis is an uncommon disease of people and animals caused by *Prototheca* spp., an unicellular aerobic algae. To date, about 30 cases have been described in dogs in North America and Australia. In Europe, only 4 cases have been documented in the last 2 decades (Poland, Italy, Greece and Spain). Affected dogs show signs referable to the gastro-intestinal tract, particularly the colon, but ocular and neurologic signs are also reported. The disease has an insidious onset, a slow progression and fatal course. The aim of the present study is to describe clinical and laboratory findings in 4 cases of canine protothecosis from the north of Italy, diagnosed between 2009–2011. Medical records were retrieved and information pertaining to history, clinical and instrumental data, as well as follow-up, were collected. The median age of the 4 dogs was 8 years (range: 5–11), 3 of them were female and 2 were Boxers. Major complaints were chronic large bowel diarrhea with hematochezia and weight loss observed since a median time of 3 months (range: 1 to 7). Previous treatment with gastrointestinal diets, antiparasitic drugs and antibiotics yielded no improvement. Additionally, 2 dogs developed uveitis during the disease course. In all dogs, a complete blood count, a serum biochemical profile, including protein electrophoresis, and abdominal ultrasound were performed; serum cTLI, folate and cobalamin were available in 3 dogs and urinalysis in one. The results of the above laboratory tests were normal. Ultrasonography was unremarkable in 2 dogs and showed increased colon wall thickness in the other 2. Definitive diagnosis was obtained from endoscopic biopsies of the colon and/or rectal scrapings in 3 dogs and from biopsies of the colon at necropsy in one. In each case, spheroid, ovoid or irregularly-shaped organisms suggestive of *Prototheca* spp. were observed. Different treatments were attempted without benefit in 3 dogs. In one dog, transient improvement was obtained with itraconazole. The median survival time was 5 months (range: 2–12). The present work indicates that protothecosis should be included in the list of differential diagnoses in dogs with large bowel diarrhea, especially in those with chronic refractory colitis or developing ocular signs. Dogs infected with *Prototheca* spp. have a guarded prognosis. Diagnosing protothecosis in 4 dogs over a 2-year period may suggest that the disease is emerging in some southern European countries.

**Conflicts of interest:** No conflicts of interest reported

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