



## A Case of Ascites Associated with Ancylostomiasis in A 2 ½-Year-old Hungarian Sheepdog (Komondor)

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### Abstract

Ascites is the accumulation of excess fluid in the peritoneal cavity and it occurs in response to various pathological processes [1]. A patient can either be presented to veterinarians for clinical signs secondary to fluid accumulation or simply due to a change in appearance because of fluid buildup [2]. Ascites is always a sign of disease; therefore, the investigation should identify the primary underlying problem [3,4]. Ancylostomiasis (hookworm disease) is a disease of worldwide distribution. The most widespread and pathogenic of all hookworm species is *Ancylostoma caninum*, and it parasitizes dogs throughout the tropics and subtropics [5]. A 2 ½-year-old Hungarian Shepard Dog was presented with a distended abdomen, anorexia, and weakness to the Area Veterinary Clinic Gonin Gora, Kaduna State, Nigeria. The dog was diagnosed with transudate ascites. Abdomino-centesis was performed to relieve the ascitic fluid. Fecal analysis revealed endoparasitic infestation of *Ancylostoma* sp. The dog was diagnosed with ascites due to hookworm infestation and was treated with antihelminthic (pyrantel pamoate, Fabentel, and praziquantel) enrofloxacin, iron dextran, and furosemide. The dog recovered after 14 days of treatment.

**Keywords:** *Ancylostoma caninum*; Ascites; Hungarian Sheepdog

### Background

Parasitic nematodes *Ancylostoma* affect dogs and have great medical and veterinary importance for their high prevalence, zoonotic potential, cosmopolitan characteristic and soil contamination by eggs and larvae which can lead to human infection. *Ancylostoma* spp. are reported to be a significant public health problem, especially in developing countries and communities that are socioeconomically disadvantaged. In these communities, poor levels of hygiene and overcrowding, together with the lack of veterinary attention and zoonotic awareness, exacerbate the risk of disease transmission [6].

### Case Presentation

A 2 ½-year-old Hungarian Sheepdog was presented to the Area Veterinary Clinic Gonin Gora, Kaduna State, Nigeria as an outdoor patient with a history of a distended abdomen, anorexia, and lethargy for two weeks, there was no history of vaccination and deworming.

Signalment Species - Canine

Breed - Hungarian Sheep Dog (Komondor)

Age - 2 ½ years

Sex - Female

Body Weight - 32kg

**Clinical findings**

- Marked dyspnea and discomfort
- Weakness and distended abdomen
- Extremely sluggish and fatigued easily on walking
- Pale mucous membrane
- Undulating movements of fluid on tapping the abdomen
- The temperature of the animal was within normal range.

**Samples taken**

- The blood sample was taken from the cephalic vein for hematological and sero biological analysis
- A fecal sample was collected per rectum to check for endoparasitic infestation
- Abdominal paracentesis to obtain fluid for the biochemical and cytological analyses.

**Laboratory results**

- Ultrasonography shows hypoechoicity of the abdominal cavity with floating structures in the abdominal cavity.
- Fecal Examination revealed the presence of *Ancylostoma* spp Eggs.
- Abdomino-centesis revealed transudate (Figure 1).
- Blood biochemistry showed hypoglycemia, hypoproteinemia, hypoalbuminemia, and Low AST (Table 1).
- Hematological examination revealed anemia and Lymphocytosis (Table 1).

**Treatment and Discussion**

Abdominal fluid drained for immediate relief thoracic pressure followed by dextrose saline administration intravenously to compensate for the fluid loss from abdominocentesis.

- Antibiotic - Enrofloxacin Inj. 1ml/ 20 kg I.M for 5 days.
- Diuretic - Furosemide (tab) 4mg/kg B.i.d Per .os for 14 days.
- Anthelmintic - Combination of Febantel, Pyrantel pamoate, and praziquantel @ one tablet/10kg body weight and repeated after 14days.

- Iron Dextran Injection 1ml intramuscularly and repeated after 14 days.
- Neutosec syrup for one month.

Parameters	Ascites Dog	Reference Range
PCV (%)	26.2	35-57
Hb (g/dl)	8.6	11.9- 18.9
Glucose (mg/dl)	46.2	76-119
Neutrophils (%)	85.2	58-85
Lymphocytes (%)	31.5	8-21
Eosinophils (%)	5.7	2-10
Basophils (%)	0.25	0-1
Platelets Count (103/ $\mu$ L)	226	211-621
(AST) SGOT (U/L)	11	13-15
(ALT) SGPT (U/L)	13	10-109
Alkaline Phosphatase (U/L)	30.50	0-45
Bilirubin (umol/L)	4.3	0-5.1
Total protein (g/dl)	3.35	5.4-7.5
Globulins (g/dl)	2.24	2.7-4.4
Albumin (g/dl)	1.4	2.3-3.1
Creatinine (mg/dl)	0.74	0.5- 1.7
Ascitic fluid Albumin (g/dl)	0.4	--

**Table 1:** Hematological and Biochemical Parameters of the dog.



**Figure 1:** Abdominocentesis.

The owner was advised to feed the dog with high protein food daily with restriction in salt. Case history revealed that the dog was not dewormed therefore harbored hookworms leading to ascites. *Ancylostoma* was found to cause anemia and protein loss. The predilection site of Adult *A. caninum* is the small intestine of their

canine host, where they attach themselves with their buccal capsules containing three pairs of ventral teeth and one pair of dorsal teeth. They feed on the dog's blood, secrete anticoagulants, and ingest blood from multiple bite sites. The dog was anemic because *A. caninum* is a voracious, bloodsucker and consumes blood in the range of 0.01 to 0.09 ml per worm per day [7]. This case report showed the dog was hypoproteinemic and hypoalbuminemic. Hypoalbuminemia decreased the oncotic pressure and increased the hydrostatic pressure causing fluid to escape from the vasculature into the body cavity [8] and thus ascites.

### Conclusion

This case report shows that infestation of dogs by *ancylostoma* can result to ascites and death if not properly treated. This finding necessitates the inclusion of dogs in any interventions to combat hookworms.

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### Source of Support

Nil.

### Conflict of Interest

None.

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