# DIAGNOSTIC EXERCISE

## From The Davis-Thompson Foundation*

Case #:**233**; Month: **March**; Year: **2024**

*Question Sheet*

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**Clinical History**: A 7-month-old female Boxer dog was referred to a veterinary hospital 4 days after showing increased abdominal volume and diarrhea, despite normal appetite. The dog lived in a semi-rural area on the outskirts of the town. On physical examination, there was dehydration of 8%, pale mucous membranes, a rectal temperature of 32º C, heart rate of 90 beats per minute, weak femoral pulse, capillary reperfusion time greater than 2 seconds, dyspnea, subcutaneous edema in the limbs, increased abdominal volume, and feces adhered to the hair in the perianal region. Results for blood counts and serum biochemistry are summarized in Table 1. There was hypochromic normocytic anemia, subnormal plasma proteins (5.6g/dL), and an unremarkable leukogram except for some hypersegmented neutrophils. Serum biochemistry showed azotemia, hypoalbuminemia, and a slight alanine aminotransferase (ALT) increase. Radiological examinations of the chest and abdomen confirmed pleural and abdominal effusion and cardiac dilation.

**Table 1** Serum biochemistry values of the dog from this case

| Parameter | Value | Reference range |
|---|---|---|
| Albumin | 1.21 g/dL | 2.6-3.3 g/dL |
| Alanine aminotransferase | 138 IU/L | 21-86 IU/L |
| Alkaline phosphatase | 116 IU/L | 20-156 IU/L |
| Creatinine | 2.1 mg/dL | 0.5-1.5 mg/dL |
| Blood urea nitrogen | 230 mg/dL | 21.4-59.92 mg/dL |

An abdominocentesis was performed, and approximately 500ml of serosanguinous fluid with a density of 1022 and characteristics of modified transudate was removed (Fig.1). Treatment with furosemide (4 mg/kg IV) was instituted, but the dog died 36 hours after admission.

**Gross Findings**: At gross examination, the heart was enlarged and globose (Figs 2A and 2B), the ventricular walls were thinned (Fig.2C), and multifocal irregular white or yellow pale areas were seen in the myocardium. There was an accumulation of approximately 200 ml of slightly cloudy fluid free in the pericardial cavity and 500 ml with the same characteristic in the thoracic cavity. The abdominal cavity was markedly distended by 2.3 L of serosanguinous, turbid fluid. There were free fibrin filaments adhered to the capsular surface of the liver (Fig. 3A), which was markedly congested oozing a large amount of blood at the cut surface. The liver parenchyma had clear areas interspersed with red areas (nutmeg liver), which could be better appreciated at the cut surface (Fig. 3B).

**Gross Images**:

**Figure 1**. Abdominocentesis

**Figure 2A**. Heart and thorax cavity

**Figure 2B**. Heart

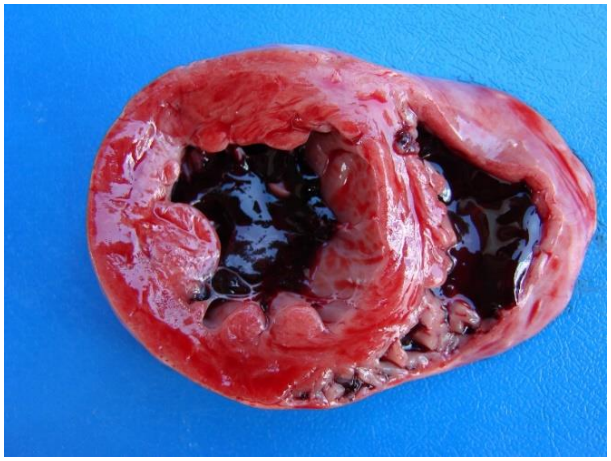

**Figure 2C**. Heart, cross section

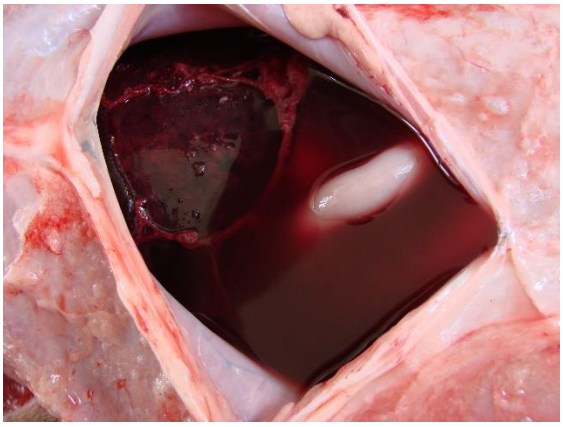

**Figure 3A.** Abdominal cavity

**Figure 3B.** Liver, cut surface

**Follow-up questions**:
- *Morphologic diagnoses?*
- *Cause?*
- *Name of the condition?*

*The Diagnostic Exercises are an initiative of the Latin Comparative Pathology Group (LCPG), the Latin American subdivision of The Davis-Thompson Foundation (DTF). These exercises are contributed by members and non-members from any country of residence. Consider submitting an exercise! A final document containing this material with answers and a brief discussion will be posted on the DTF website (https://davisthompsonfoundation.org/diagnostic-exercise/).

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