

**DATE PRESENTING CLINICAL SIGNS**

8/25/22 For past 2-3 days has gotten progressively more lethargic and appetite has decreased; did not eat at all today. 2 days ago owner gave him a bath and noticed that skin inside ears as well as sclera was yellow. Went to rDVM today; bloodwork was highly suggestive of IMHA.

**PATIENT**

Pluto Almaguer

Current Medications: Ampicillin, Ondansetron, Cerenia, Metronidazole, Vitamin K.  
Lab Results: See attached.

**SPECIES**

Canine

Radiographs: cranial abdomen - stomach displaced caudal / dorsally. Concern for liver mass. Spleen enlarged  
Date of Previous IntraPet Ultrasound: No previous.  
Sedation: Not required to complete full diagnostic ultrasound.  
Stat Report: Not requested.

**BREED**

Labrador X

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****SEX**

Neutered Male

**Urinary System**

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

**AGE**

8/23/18

The visualized areas of prostate and surrounding tissue appear normal. Unfortunately, the prostate is not fully visualized likely due to its intrapelvic location. Correlate with rectal exam findings.

**WEIGHT**

54.8 Pounds

The left kidney has a normal shape and size (6.97 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**INTERPRETED BY**

Kathleen Sennello DVM,  
MS, Diplomate ACVIM  
(Small Animal Internal  
Medicine)

The right kidney has a normal shape and size (7.19 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**IMAGING PERFORMED BY**

Rachel Brilhart RDMS

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.57 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**HOSPITAL NAME**

Animal Emergency  
Hospital

The right adrenal gland is normal in size measuring 0.88 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**REFERRING VET**

Dr. Martinoli

**Spleen**

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

**INVOICE**

40754

**Liver**

The liver is large and slightly irregular with rounded margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. The parenchyma is diffusely mottled with some ill-defined hypoechoic regions consistent with hypoechoic nodules/lesions, varying in size from 1.0-2.5 cm. Additionally, there is a more discrete isoechoic mass effect on the right side of the right side of the liver, measuring 10.16 cm x 9.07 cm.

The gallbladder is not clearly visualized. The area of the gallbladder is normal.

### ***Gastrointestinal***

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

### ***Pancreas***

The pancreas is prominent and mottled compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### ***Free Abdomen***

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

## **ULTRASONOGRAPHIC FINDINGS**

- Large, heterogeneous, rounded liver with ill-defined hypoechoic nodules and a rounded isoechoic mass effect – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The mass effect is relatively isoechoic to the rest of the liver, so this could represent a true hepatic mass or an atypical lobe.
- Prominent, mottled pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis, or chronic pancreatitis.

## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

I'm concerned that with the changes observed on today's scan this pet could have a primary hepatopathy as a cause for its elevation in bilirubin and liver enzymes. Initial treatment can be aimed at acute liver injury (IV fluids, antibiotics, Denamarin, Ursodiol, etc.). A fine needle aspirate can be performed provided coagulation parameters permit to rule out round cell neoplasia, etc., but I'm concerned that a liver biopsy would be necessary to truly get a better idea of what is going on. Additionally, a contrast CT scan could be helpful in trying to determine if the abnormal rounded area of liver is a true mass effect. Recommend screening for Leptospirosis, but the appearance of the liver would be atypical for this disease process.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.





The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)  
kathleen.sennello@sonopath.com