

**DATE PRESENTING CLINICAL SIGNS**

8.18.2023 History: saw RDVM on 8/16- poor appetite; lethargy

**PATIENT**Honeybooboo  
Munker**SPECIES**

Canine

**BREED**

Pomeranian

**SEX**

Female Spayed

**AGE**

10/15/2012

**WEIGHT**

12.9 lbs

**INTERPRETED BY**Kathleen Sennello  
DVM, MS, Diplomate  
ACVIM (Small Animal  
Internal Medicine)**HOSPITAL NAME**

Animal EH

**REFERRING VET**

Dr. Willer

**INVOICE**

14170

X-rays taken - Thorax:

Orthogonal views of the thorax are provided. The patient is moderately overweight. Moderate generalized cardiomegaly is present. This is indicated by dorsal elevation of the trachea with straightening of the caudal cardiac waist. The heart is widened occupying 5 intercostal spaces with an increase in the cardiothoracic ratio on the dorsoventral view. The pulmonary vessels are decreased in size and thready in appearance. There is no evidence of heart failure. The lungs are unremarkable for age, body condition and phase of respiration with a mild broncho-interstitial pattern. The pleural space and mediastinum are normal. The trachea is narrowed in the cranial intrathoracic region on the right lateral view. A redundant membrane is present rostral to the region. On the left lateral view there is collapse of the dorsally placed left mainstem bronchus. The visible abdomen is unremarkable. Moderate remodeling of the elbows is present. No additional abnormalities are noted.

1. Moderate generalized cardiomegaly likely due to valvular degenerative disease.
2. Hypovolemia.
3. No evidence of heart failure.
4. Dynamic tracheal left mainstem bronchial collapse.
5. Moderate elbow arthritis.

Bloodwork - WBC- 114.4; Lymph- 77,792; Mono- 4576, neutro- 32,032 HCT 38.7; elevated lipase and amylase: ALP- 295 elevated CPLI given mirtazapine referred for 24 hours care and ultrasound owner's history: went off dog food (dry) about 2 weeks ago last Saturday night- drinking a lot of water/vomiting; not able to hold down water; not eating tried to get in with rDVM (Eastern)- but was not able; had not urinated or defecate 2 days prior to going to PHAH- went to PHAH on 8/16 eats wet pouch of pedigree dog food gets treats gets people food not aware of her getting into anything known heart murmur (few years) coughing for the past few years - x-rays- collapsing trachea.

Current Medications: None listed.

Lab Results: Pending. CBC Path review pending.

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Imaging Performed By: Rachel Brilhart, RDMS.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****Urinary System**

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

The left kidney has a normal shape and size (3.98 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. Small, nonobstructive mineralizations, a medullary rim sign and occasional small cortical cysts are noted. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.10 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. Small, nonobstructive mineralizations, a medullary rim sign and occasional small

cortical cysts are noted. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

#### ***Adrenal Glands***

The left adrenal gland is normal in size (0.60 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.

The right adrenal gland is normal in size (0.54 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.

#### ***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.

#### ***Liver***

The liver is subjectively large in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There is a small hyperechoic nodule visualized in the liver (measuring 0.72 cm in diameter).

#### ***Gastrointestinal***

The stomach contains mild/moderate fluid. It measures at a normal thickness of <0.7 cm 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-to-moderate 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 0.35 cm) and the jejunum measured as normal (0.32 cm) 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 large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with (mild/moderate or severe) pancreatitis.

#### ***Free Abdomen***

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The mesentery is hyperechoic and reactive around the pancreas. 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.

#### ***Other***

The right auricle and pericardium were visualized and were unremarkable. No obvious pathology is visualized. If cardiac function evaluation is desired a full echocardiogram is warranted. There is no pleural effusion evident on evaluation of the thorax.

## ULTRASONOGRAPHIC FINDINGS

- Decreased corticomedullary distinction in both kidneys with small, nonobstructive mineralizations and corticomedullary rim sign - Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.
- Large hypoechoic pancreas with surrounding hyperechoic mesentery (right limb more severe than the left) – The pancreatic changes are most consistent with moderate pancreatitis/pancreatic infiltration. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.
- Heterogenous liver with a hyperechoic nodule – 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 appearance of the hyperechoic nodule trends toward a benign process. Recommend continued monitoring.

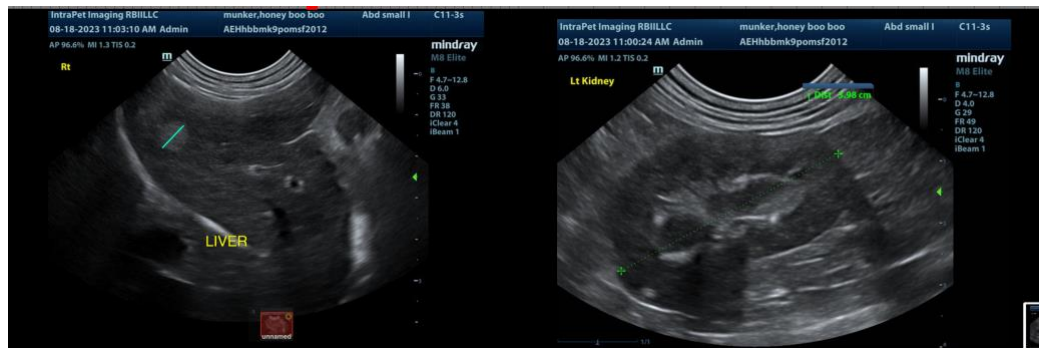
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

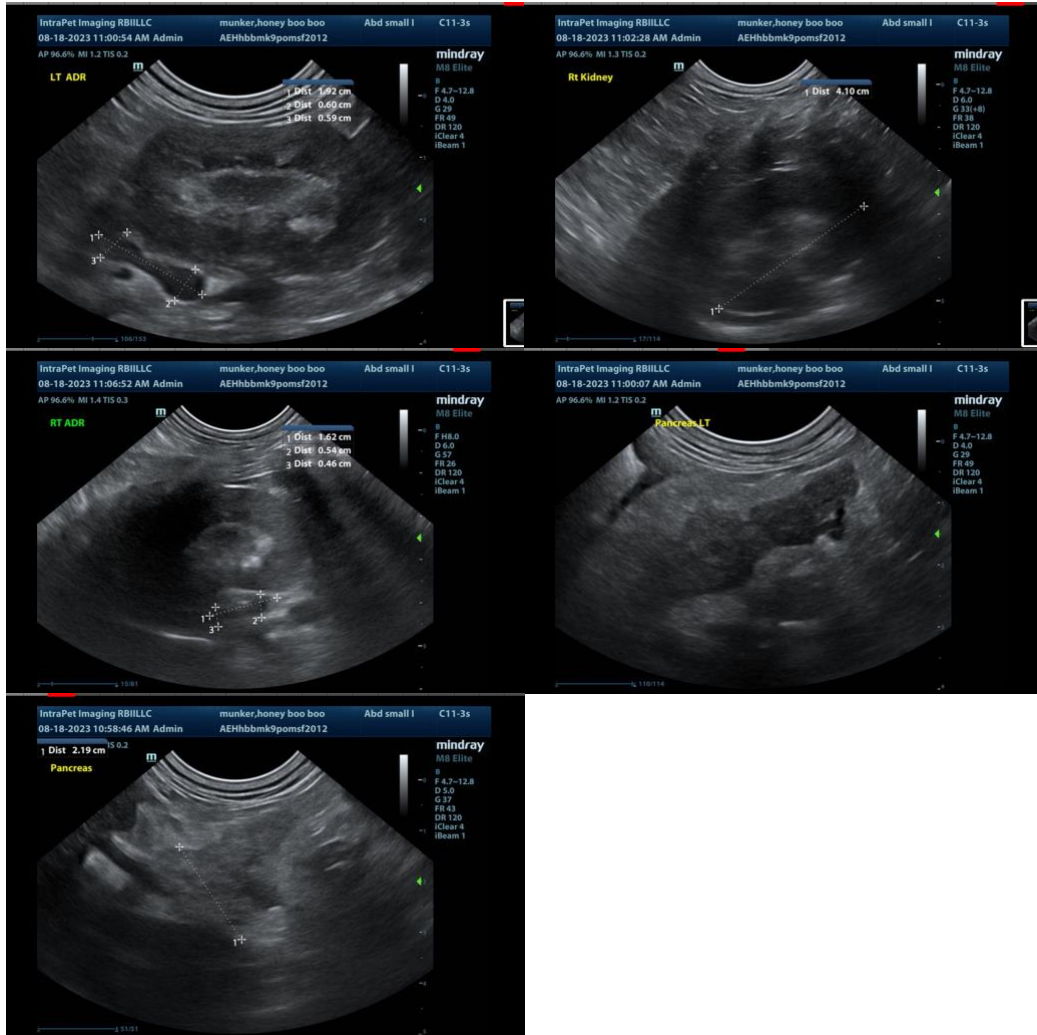
Both limbs of the pancreas appear hypoechoic, enlarged, and are surrounded by hyperechoic mesentery. These changes are consistent with pancreatic inflammation/pancreatitis. Recommended medical management for pancreatitis (fluid, pain medications, nausea medications, etc.) and close, continued monitoring.

The changes in the kidneys are nonspecific and likely age-related. Correlate with the urinalysis +/- culture.

There is a small, hyperechoic nodule in the liver which is slightly heterogenous. The appearance of this nodule trends toward a benign process. Recommend continued monitoring.

Recommend cardiac evaluation based on the thoracic radiographs submitted.





The information and recommendations provided are based on the images presented by the referring veterinarian. 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)  
[info@SonoPath.com](mailto:info@SonoPath.com)