**DATE PRESENTING CLINICAL SIGNS**

3/1/22

Patient presents for evaluation- owner reports "bloated abdomen". No murmur noted on PE, but patient was coughing throughout PE. Chest and abdominal rads were recommended. BP 120mmHG. Patient gets home-made diet- client is unsure of whether or not this is grain free, but does not work with a board certified veterinary nutritionist.

**PATIENT**

Karai Marrero

**SPECIES**

Canine

**BREED**

Pit Bull X

**SEX**

Spayed Female

**AGE**

2/28/19

**WEIGHT**

48 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Stephanie Pearce  
RDMS, RVT

**HOSPITAL NAME**

Perry Hall AH

**REFERRING VET**

Dr. Miller

**INVOICE**

35976

Current Medications: On Trazodone and Gabapentin for exam.

Lab Results: 4dx positive for heartworm. Rest of labs pending.

Radiographs: Abdomen- poor serosal detail. Chest: rounding of cardiac silhouette, concern for main pulmonary arterial distention. Patchy diffuse mixed pulmonary bronchial and interstitial pattern. Right sided pleural fissure lines. Concern for main pulmonary arterial distention may indicate pulmonary hypertension, and the patchy pulmonary changes could be secondary to pulmonary hypertension/primary pulmonary disease. Concerning for right sided CHF. Potential for scan pleural effusion.

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Gabapentin and Trazodone PO.

Stat Report: Not requested.

**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 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (7.06 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.

The right kidney has a normal shape and size (6.84 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.

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.59 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 measuring 0.87 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 normal in size and mottled with slightly irregular margins. The blood flow through the hilus and splenic parenchyma appears normal. There are numerous ill-defined, hypoechoic nodules visualized within the parenchyma, the largest, most distinct measuring 0.81 cm x 0.99 cm. Others are observed at 1.1 cm diameter, 0.89 cm, and 0.82 cm.

### ***Liver***

The liver is large in size, and normal in echogenicity 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. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

### ***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 normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### ***Free Abdomen***

There is a large amount of echogenic free fluid. There is no lymphadenopathy. The mesentery appears diffusely hyperechoic.

## **ULTRASONOGRAPHIC FINDINGS**

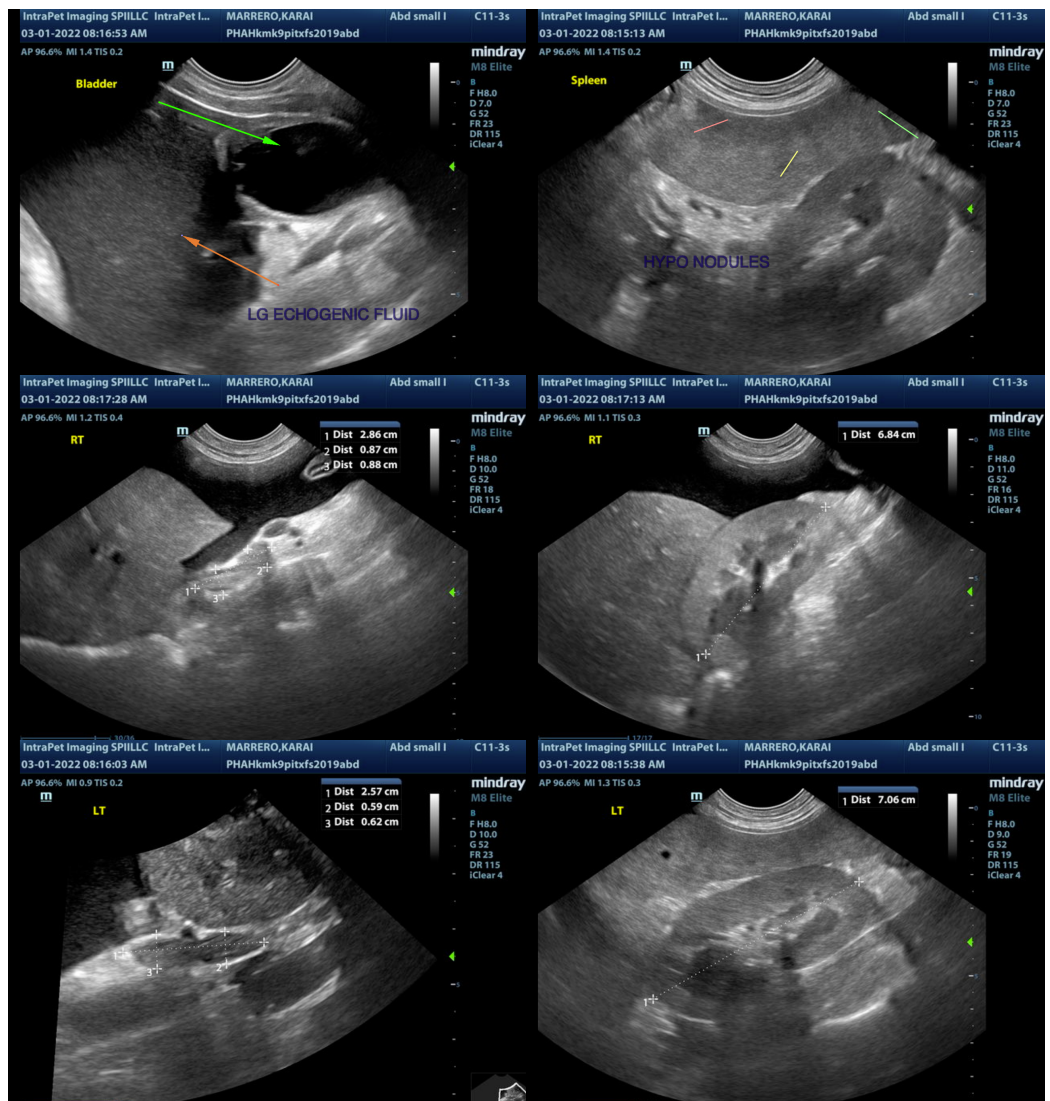
- Mottled, irregular spleen with ill-defined hypoechoic nodules – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Large, heterogeneous liver – 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.
- Moderate gallbladder sludge – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.
- Large volume of echogenic free abdominal fluid – Recommend fluid analysis and cytology.

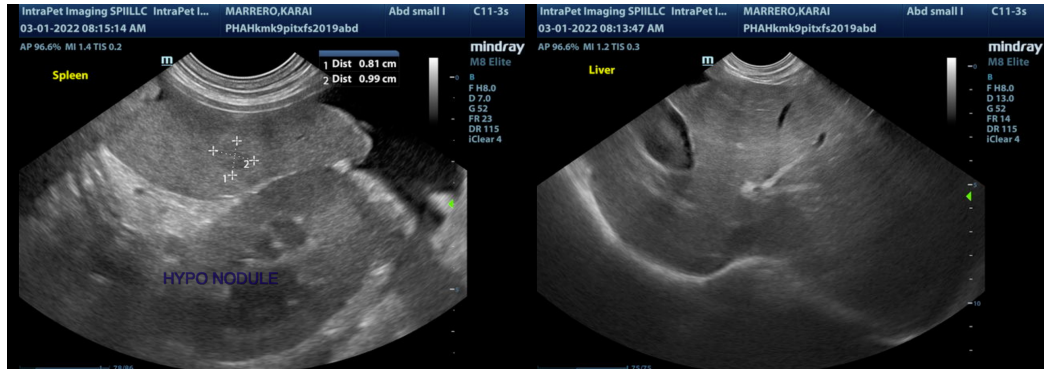
## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

There are many possible differentials for the appearance of the lesions described, but based on the history, my primary concern would be right-sided heart disease secondary to heartworm infection with secondary

pulmonary hypertension and vascular congestion causing ascites and congestion of the liver and spleen. The splenic lesions could be related or could be associated with other types of disease. You could consider a fine needle aspirate.

Recommend consultation with a veterinary cardiologist regarding the best treatment strategy for this patient.





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.

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