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**DATE PRESENTING CLINICAL SIGNS**

5/24/22

**PATIENT**

Jade Mierkiewicz

**SPECIES**

Canine

**BREED**

Pit Bull X

**SEX**

Spayed Female

**AGE**

10/15/06

**WEIGHT**

60.7 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Rachel Brilhart RDMS

**HOSPITAL NAME**

Animal Emergency  
Hospital

**REFERRING VET**

Dr. Goessling

**INVOICE**

37907

Patient is a creature of habit per owner. She usually whines and greets owner when she comes in the door but didn't yesterday. She was under the bed more than normal. Owner thought she was hiding from the grandkids but she got her out and took her outside and patient seemed tired. Owner thought was due to the heat but at around 3 pm when owner went to take her grandson home, she had to pull patient out from under the bed and then she just laid there. Owner carried her outside and she stood and then sort of fell over. No vomiting, no abnormal BM's per owner. Owner reports patient does have a SQ lump on her ventral abdomen approximately where the spleen is located, has been aspirated and diagnosed as a fatty tumor but is definitely growing per owner.

Current Medications: Dex SP, Protonix, Buprenorphine.  
Lab Results: See attached.  
Date of Previous IntraPet Ultrasound: No previous.  
Sedation: Not required to complete full diagnostic ultrasound.  
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 (6.22 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 (7.12 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 large in size measuring 0.93 cm at the cranial pole, 1.1 cm at the caudal pole, and 3.51 cm in length. It is observed in its normal position cranial to the left renal artery. It is largely normal in size, but the caudal pole appears slightly bulbous and isoechoic. Findings could be consistent with normal anatomic variation or an isoechoic nodule involving the caudal pole of the left adrenal. There are no vascular abnormalities noted.

The right adrenal gland is normal in size measuring 0.65 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. The spleen echotexture is heterogenous and mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There is a hypoechoic, slightly mixed echogenic nodule visualized within the parenchyma measuring 2.02 cm x 1.45 cm.

### **Liver**

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

The gallbladder lumen is moderately distended. The wall of the gall bladder is thickened, hypoechoic, and appears somewhat edematous, measuring 0.84 cm in thickness. Luminal contents are primarily anechoic. 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**

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.

### **Other**

A brief view of the heart was submitted. No significant pericardial effusion was seen.

## **ULTRASONOGRAPHIC FINDINGS**

- Enlarged caudal pole of the left adrenal gland – The significance of this lesion is unclear, as it is relatively subtle and isoechoic. This could represent normal anatomic variation or a nodule in the caudal pole of the left adrenal gland. In that case, differentials would include adenoma, carcinoma, pheochromocytoma, focal hyperplasia, etc.
- Mildly heterogeneous spleen with hypoechoic nodule – There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include 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.

- Gallbladder halo sign – This can be seen with anaphylaxis, edema, cholecystitis, portal hypertension, etc. In this situation, I suspect it is secondary to hypoxia and edema.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is no evidence of blood loss to explain the anemia evident in the submitted lab work. Additionally, recommend a digital rectal exam to look for evidence of melena. Provided this is normal, the remaining categories for anemia would be lack of production or destruction, and the reticulocyte count reported appears somewhat regenerative, so destruction is possible.

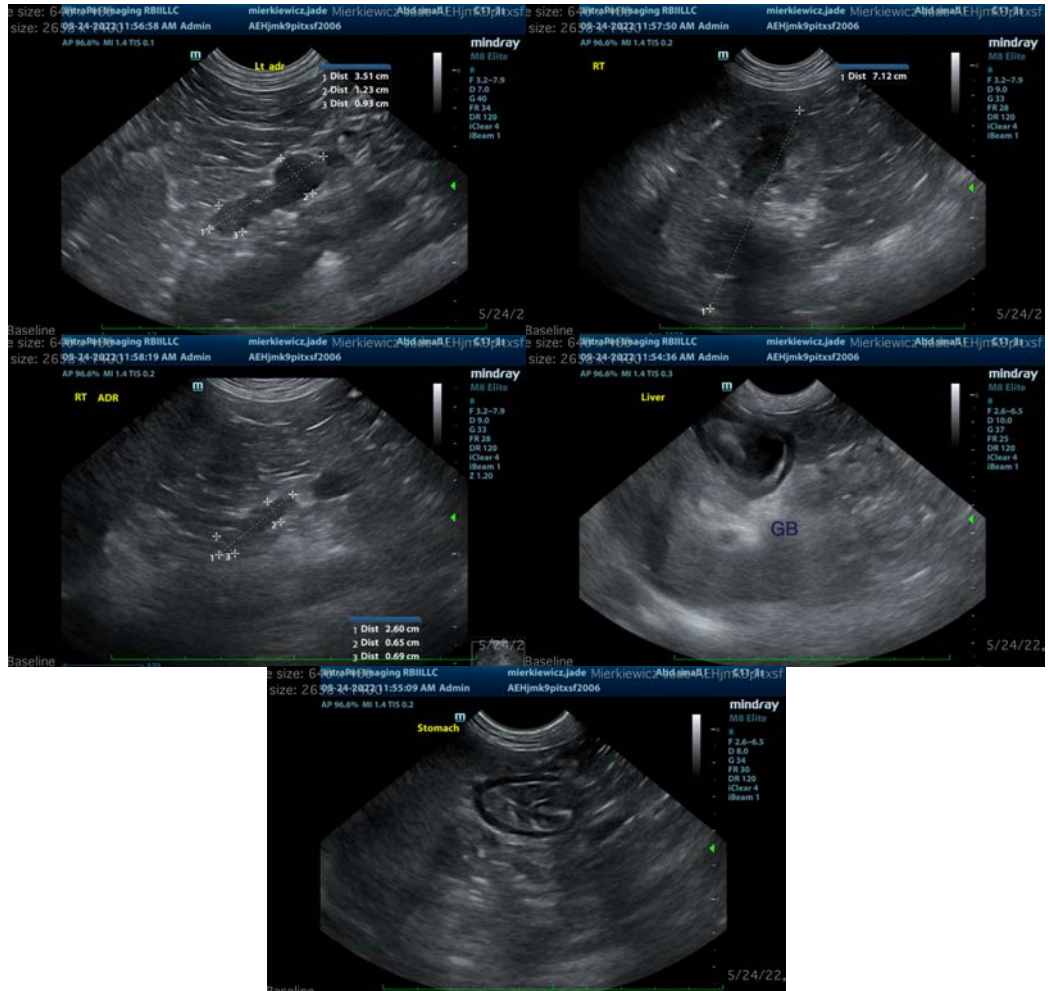
The caudal pole of the left adrenal gland is somewhat prominent. The significance of this is unclear. I would recommend a blood pressure evaluation, and provided this is normal, consider reevaluation once this pet is feeling better. At that point, you could consider either continued monitoring with ultrasound or further workup for possible early adrenal lesion.

There is a hypochoic nodule within the spleen. I would recommend a fine needle aspirate of this lesion to further evaluate, and continued monitoring with ultrasound to look for progressive enlargement.

The changes observed in the liver are non-specific, and there is no significant liver enzyme elevations present. If round cell neoplasia is high on your differential list, you could consider a fine needle aspirate, but otherwise, continued monitoring is reasonable. The wall of the gallbladder is thickened, hypochoic and edematous. I suspect this is secondary to hypoxia due to the anemia, but continued monitoring is warranted.

- Recommend a pathologist review of blood smear to look for evidence of atypical cells, blood parasites, an official reticulocyte count, etc.
- Consider a tick panel including babesia testing to look for infectious causes of anemia.
- Recommend a blood smear to look for evidence of spherocytes, autoagglutination, etc.
- Recommend 3-view thoracic radiographs.
- If a pancytopenia or non-regenerative anemia is present, consider bone marrow evaluation.
- Consider evaluation of the history and abdominal radiographs for possible zinc ingestion.
- Consider blood transfusion as needed. If all diagnostics are pointing towards an immune mediated anemia, consider judicious immunosuppression.





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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