IMAGING PERFORMED BY

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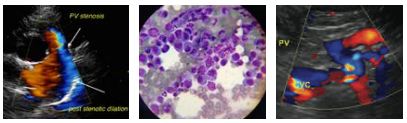

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DATE
1/4/21

PATIENT
Lily Ruvola

SPECIES
Canine

BREED
Pitbull Terrier Mix

SEX
Spayed Female

AGE
5/19/11

WEIGHT
83.3 lbs

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

HOSPITAL NAME
Animal Emergency Hospital

REFERRING VET
Dr. Kalwa

INVOICE
94976

PRESENTING CLINICAL SIGNS

History: Presenting Complaint: Tremors / Shaking / Trembling; Not Eating; Weak. Date: 01-02-2022. Notes: Problems: - 3-4 weeks ago- shaking, eating less, febrile, elevated wbc; Clavacillin, did well - BW- elevated WBC 14k (recheck normal - 5); x rays no obvious tumors - Clinical signs started coming back 1 week after abx. Shaking, only eating treats for 2 days, getting weak /slipping, no vomiting. Diet- Pro Plan Sensitive Stomach and Iams Mature Milk bones, Bully Sticks ...Cheese, Scrambled Eggs ...Nothing Crazy- weight loss ATO- end of November spine started showing, intermittent shaking started at 10am, progressively worse. rDVM December 5th had bloodwork and xrays- elevated WBC ct and 104 F fever. Still sassy but more lethargic lately, more confused. O thought signs of pain Had weight loss at highest 104 lbs; 85 lbs last month stopped eating kibbles, still liking treats. O saw improvement after giving Clavacillin- recheck wbc ct normal 1 week after. 10 days shaking again- progressively more uncomfortable, slipping under feet- unsure if not eating- no vomiting, no diarrhea, saw stool today, soft yellow with mixed hard stool- increased drinking, always holds urine until dropping then will urinate normally /ok- no limping- knee sx in June flea/ tick- on Seresto collar 4dx neg in December. Slight elevation in liver enzyme- thought due to Phenobarbitol.
Assessment: shaking/ wobbly/ off balance; hyporexia; weight loss; hx of seizures - seizure free 7 yrs- on phenobarbital; bilateral alopecia dorsal lumbar region. No vomiting. O states no straining to urinate, will urinate outside but holds it until large. On PE- QAR, muscle wasting, gums pink, potbellied appearance, abdomen soft, rectal- diarrhea, bilateral alopecia
DDX: Cushing's vs CKD vs cancer vs arthritis vs other.
Plan: CBC/CHEM/LYTES/UA, BP, X rays. Discussed ddx- ultimately recommend ultrasound; if nsf send home on appetite stimulant, maropitant, gabapentin, abx +- carprofen pending diagnostics.
Current Medications: Denamarin, Cerenia.
Lab Results: Attached separately.
Radiographs: AFAST/TFAST: No FF, large urinary bladder. (re scanned- extremely scant FF by liver, very large urinary bladder.) Xray Thorax 1 view only. No obvious masses in thorax heart wnl. Xray Abdomen 2 View very enlarged liver with caudal displacement of the stomach decreased serosal detail by liver- re-scanned FAST scan- extremely scant FF not enough to tap urinary bladder large but not taught.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Andi Parkinson, 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 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (7.99 cm). A large cortical cyst was noted and measured 2.03 x 1.31 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 (8.16 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/borderline large in size measuring 0.96 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 0.69 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 normal 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 large, irregular, mixed echogenic mass effect that was visualized on the left side of the liver and measured > 11 cm in diameter. Additionally, there is a smaller, hyperechoic mass effect on the right side of the liver that measured 2.83 cm in diameter. The gallbladder lumen is moderately distended. The wall of the gallbladder 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
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.

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

ULTRASONOGRAPHIC FINDINGS
PRIMARY FINDINGS:

- Large, heterogenous liver with a mixed echogenic mass. 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. This large, irregular mass effect could present either a benign (abscess, hepatoma etc..) or malignant lesion.

- Moderate gallbladder sludge. The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

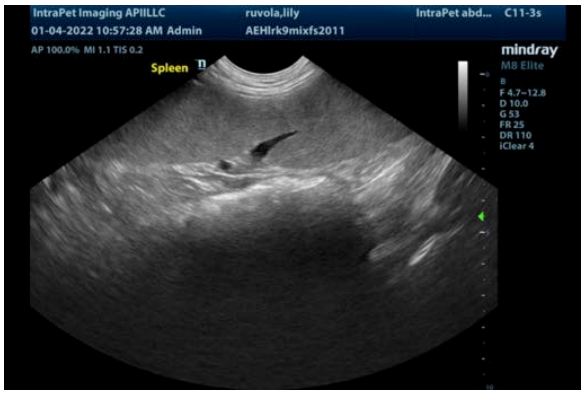
SECONDARY FINDINGS:

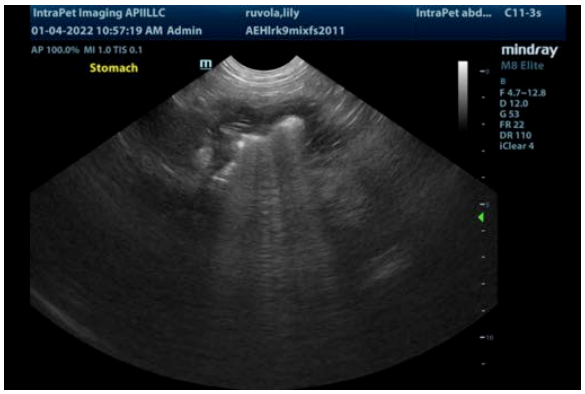
- Left-sided renal cyst. This is likely an incidental finding, but should be continued to be monitored.

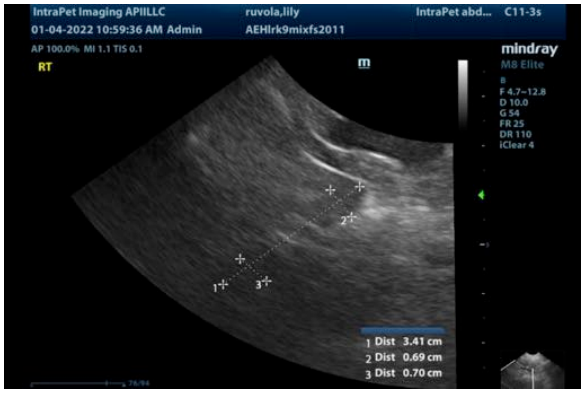
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a large, irregular liver mass visualized as well as a second, smaller, hypoechoic nodule. Large mass effects can be sources of a fever particularly if they have a necrotic center or are abscessed. I recommend an abdominal CT scan to further evaluate the dimensions of the mass effect and evaluate it for possible surgical removal. A FNA of the mass effect can be helpful in obtaining more information, but I suspect removal would be ideal. I recommend three view thoracic radiographs.

It is not 100% clear if the lesion identified is responsible for the history of chronic fever, weakness, etc. It is concerning that there are possible neurologic symptoms and/or response to antibiotics. If not already done consider cardiac ultrasound to evaluate the heart valves (or at least very careful auscultation for a new murmur). I recommend complete vector borne disease testing with a canine comprehensive panel to NC State vector borne disease lab and consider careful palpation of the joints and possible joint sampling for cytology and culture. While I think that the liver lesion is a good source for a fever and not feeling well, these other possibilities exist as well.



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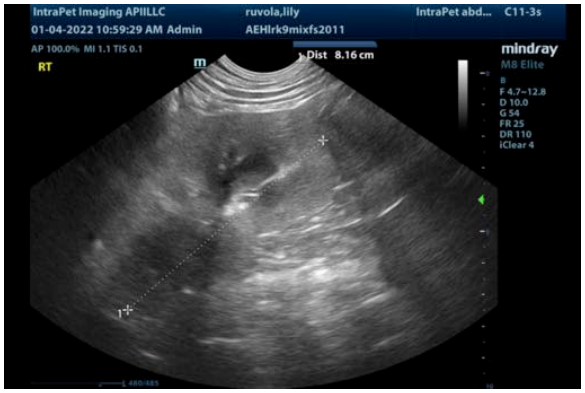
2 Dist 0.69 cm
3 Dist 0.70 cm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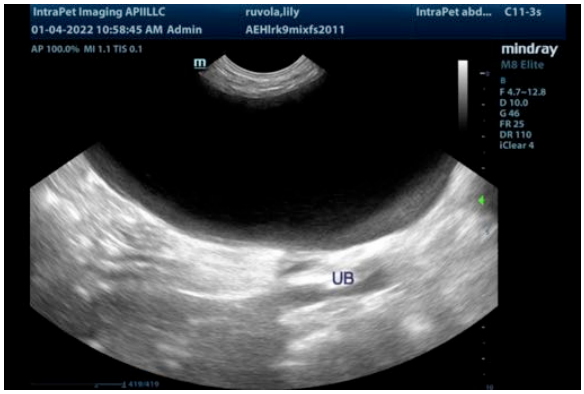
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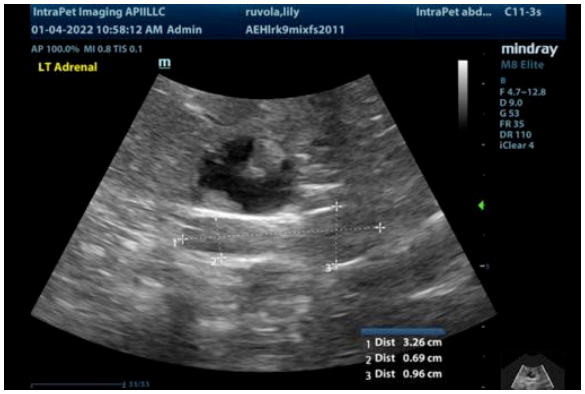
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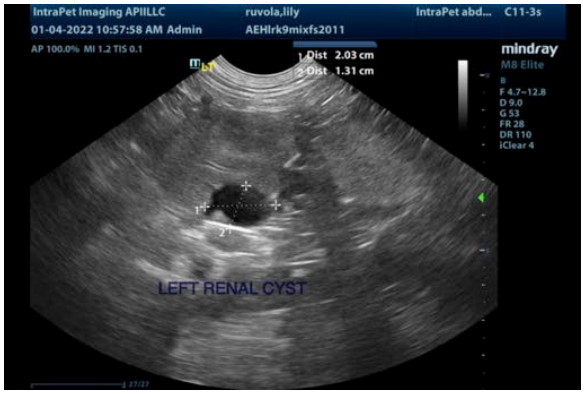
3 Dist 0.96 cm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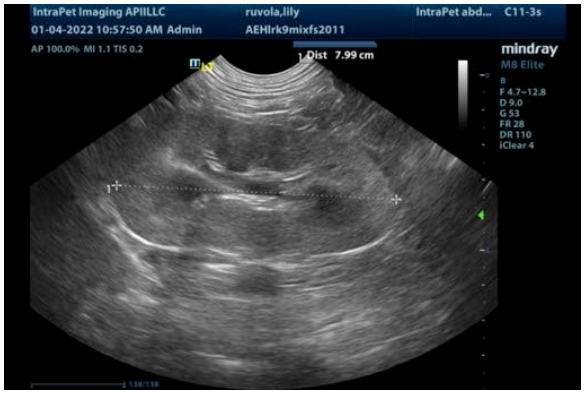
LEFT RENAL CYST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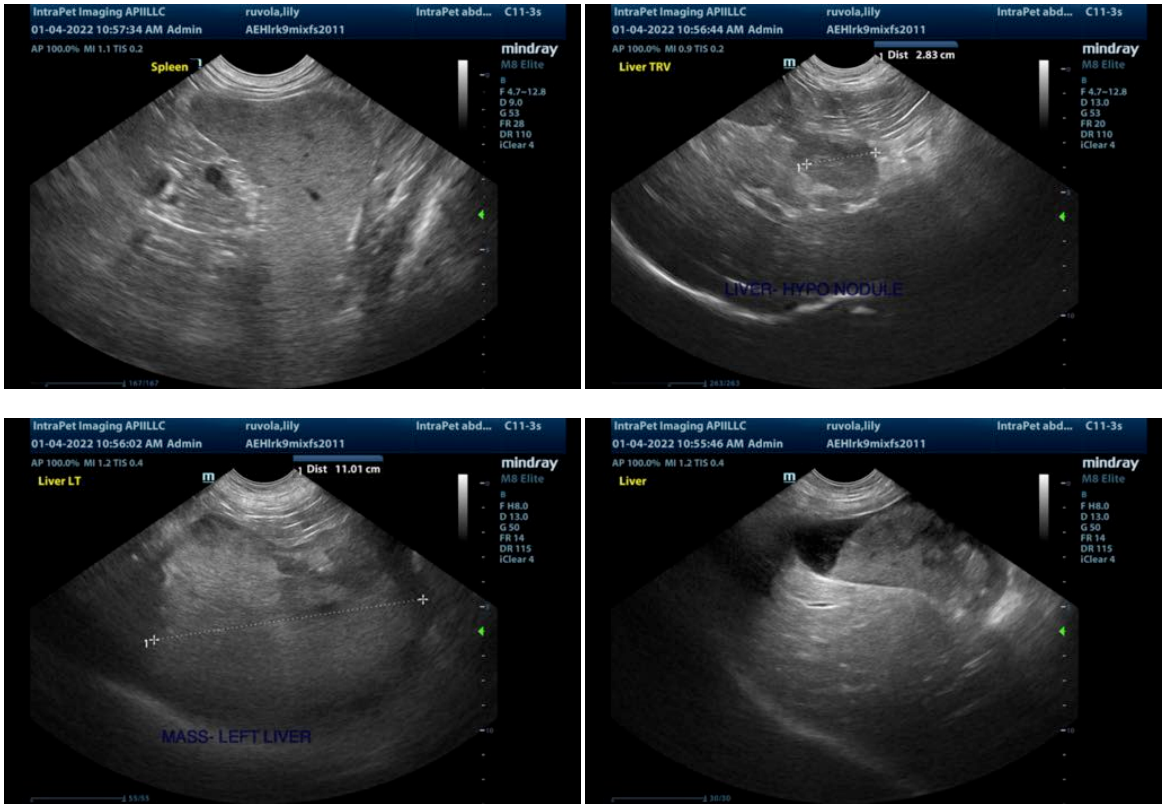

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
kathleen.sennello@sonopath.com