

**DATE PRESENTING CLINICAL SIGNS**

10/7/22

P was seen at rDVM on Monday the 26th for fever and lethargy, per Os (Mr and Mrs) P had a never tick test, was treated with antibiotics and was doing much better. Went to Country Comfort Kennels from Thursday-Monday, and they reported no concerns. Monday night (Oct 3rd) P threw up, has been lethargy and isn't eating. Mrs reports that she feels that P's urine is dark. P was seen at rDVM yesterday, Os report that he did not have a fever, BW was sent out and P was given SQ fluids. Os report that P has access to the yard but is supervised, no known hx on ingestion. P has hx of allergies but no other health concerns that P is aware of.

PATIENT

Jackson Perry

SPECIES

Canine

Current Medications: None listed.

Lab Results: See attached.

Date of Previous IntraPet Ultrasound: No previous.

BREED

Labrador X

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**SEX**

Neutered Male

Urinary System

The urinary bladder is empty. A foley catheter is visible inflated within the lumen. Further evaluation of the urinary bladder is difficult due to the lack of urine distention.

AGE

9/2/11

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

89 Pounds

The left kidney has a normal shape and size (7.77 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. There is no evidence of pyelectasia, nephroliths, infarcts or hydronephrosis. 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 (7.51 cm) with mild pyelectasia at 0.32 cm. Overall echogenicity is normal with mildly reduced corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of nephroliths, infarcts or hydronephrosis. Renal vasculature is normal.

IMAGING PERFORMED BY

Rachel Brilhart RDMS

Adrenal Glands

The left adrenal gland is normal in size measuring 1.08 cm at the caudal pole, 0.87 cm at the cranial pole, and 2.81 cm in length. It is observed in its normal position cranial to the left renal artery. It is abnormal in appearance in that there is an ill-defined hyperechoic nodule in the mid body of the adrenal measuring 0.89 cm x 1.06. The nodule does not deform the shape of the adrenal gland significantly. There is no evidence of vascular invasion visualized.

HOSPITAL NAME

Animal Emergency
Hospital

The right adrenal gland is normal in size measuring 0.96 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. Hicks

Spleen

The spleen is subjectively normal in size. The spleen echotexture is heterogenous, hypoechoic, and mildly mottled, 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

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Liver

The liver is subjectively normal in size, and hypoechoic 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 not thickened and has a smooth mucosal surface. Luminal contents are mild and 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.

PRIMARY FINDINGS

- Ill-defined hyperechoic nodule in the mid body of the left adrenal gland – Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Mildly reduced corticomedullary distinction in both kidneys with mild right-sided pyelectasia – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. Pyelectasia of the kidney(s) could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.
- Mildly mottled spleen – 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.
- Hypoechoic, 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.

SECONDARY FINDINGS

- Empty urinary bladder with a foley catheter visualized

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The changes in the kidneys are relatively mild, and no focal lesions are visualized other than mild pyelectasia in the right kidney. Recommend a urinalysis and culture. Likewise, there are no focal lesions visualized in the liver. The biliary tract appears relatively normal, so this is likely a primary hepatopathy. Consider the following for further evaluation of the elevated liver values:

The ultrasonographic changes in the liver were relatively mild. Unfortunately, the sonographic changes do not always reflect the severity or cause of the hepatopathy. The scan today supports a primary hepatopathy as no severe biliary changes were observed.

- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...
- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history (this test is currently pending)
- If not already done, consider pre and post prandial bile acids to evaluate liver function
- Consider Fine needle aspirate if round cell neoplasia is on your differentia list (25 g needle, normal coags)
- If no response to supportive care (Denamarin, fluids, antibiotics, +/- ursodiol etc.) Consider liver biopsy with samples obtained for histopathology, culture, and copper levels.

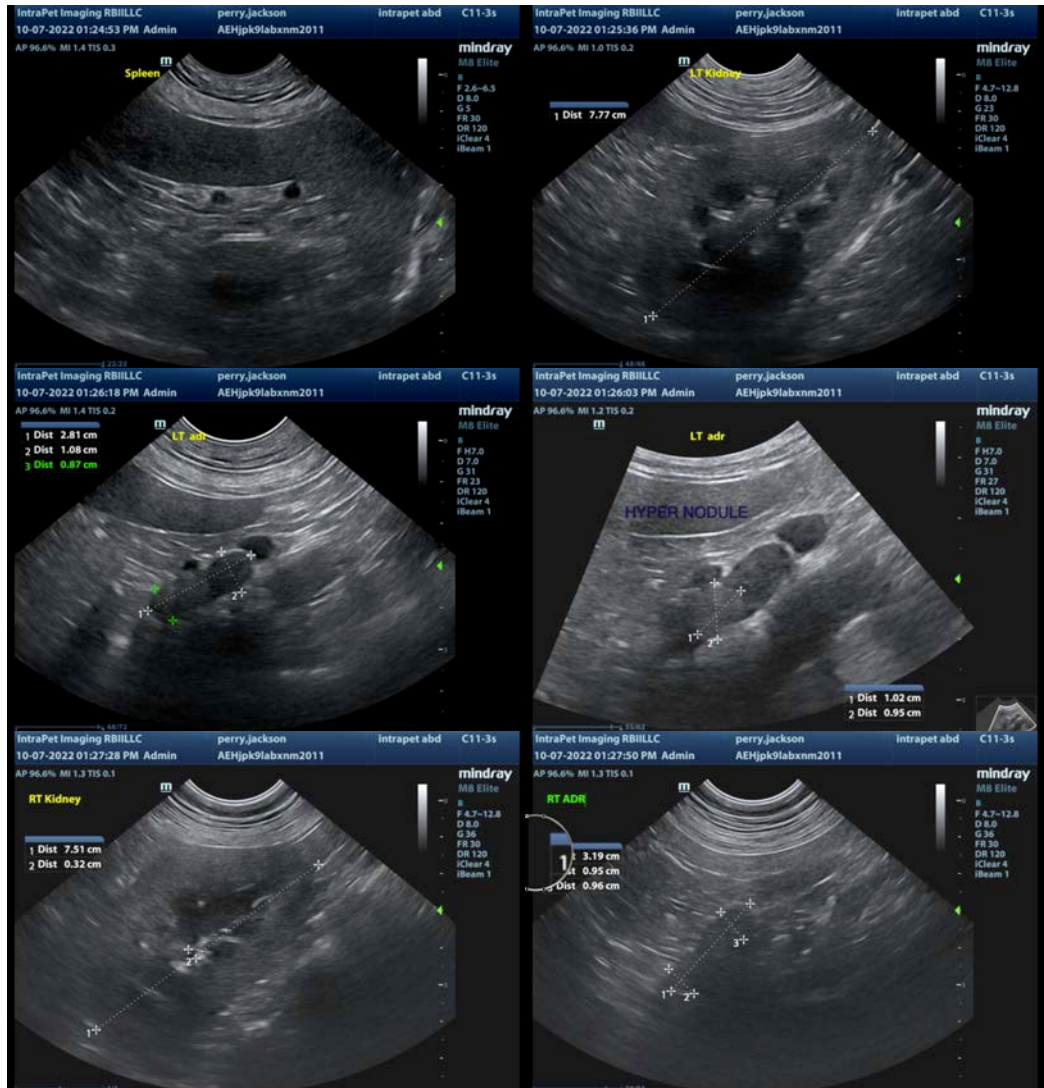
There is an ill-defined hyperechoic nodule within the left adrenal gland. At this time, I suspect this is an incidental finding, but it could progress to be something more significant. These are my typical recommendations for follow up of an adrenal nodule:

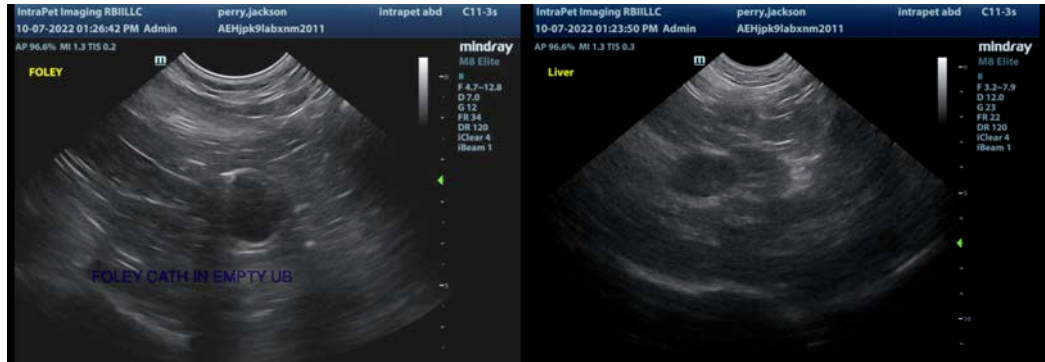
- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)
- If adrenal dependent cushings is suspected and supported by adrenal function testing consider medical therapy with lysodren or trilostane or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma
- If no symptoms of cushings are present, consider either referral for surgery or continued monitoring with ultrasound (in 3-4 months).
- Many of these nodules can be benign and incidental in nature, unfortunately that is difficult to determine with a single ultrasound.

At this time, I would likely just recommend a blood pressure evaluation and holding off on further evaluation of the adrenal, as adrenal function testing will be off due to the concurrent illness, and I don't think this is currently a significant issue.

The spleen appears mildly mottled and hypoechoic. Consider a fine needle aspirate at the same time as aspirating the liver as long as coagulation parameters will permit.

Recommend three view thoracic radiographs to evaluate for possible 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.

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