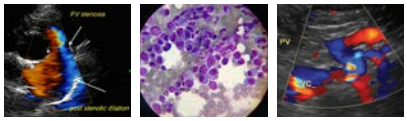
IMAGING PERFORMED BY

IntraPet.com



SonoPath

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DATE

9/27/22

PATIENT

Nala Hudock

SPECIES

Canine

BREED

English Bulldog

SEX

Spayed Female

AGE

11/24/12

WEIGHT

74.7 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

All Creatures Vet Service

REFERRING VET

Dr. Keys

INVOICE

41670

PRESENTING CLINICAL SIGNS

Unexplained PU/PD and distended abdomen for the past 7 months.

Current Medications: Apoquel 16mg SID since 2017.
Lab Results: LDDST neg. ACTH Stim by ER negative. Diluted urine. Consistently high ALP.
Radiographs: 2/7/22- mild bronchointerstitial pulmonary pattern.
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 (5.47 cm). Overall echogenicity is normal with adequate 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 hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.96 cm). Overall echogenicity is normal with adequate 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 hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal/borderline large 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 0.77 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 small isoechoic irregularity near the hilus measuring approximately 2.36 cm x 1.01 cm, most consistent with normal anatomic variation, but an early mass lesion cannot be excluded.

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 thickened, hypoechoic, and prominent, measuring 0.45 cm in width. 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 prominent and mottled compared to the surrounding isoechoic 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. There are large irregular hypoechoic lymph nodes visualized in the abdomen. The most prominent lymph node is the portal lymph node measuring approximately 1.53 cm x 3.31 cm. Additionally, a mesenteric root lymph node is enlarged measuring 2.22 cm x 1.82 cm. Both of these lymph nodes are surrounded by hyperechoic mesentery.

PRIMARY FINDINGS

- Mildly mottled spleen with isoechoic irregularity near the hilus – 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. The irregular tissue near the hilus cold be an anatomic variation or an early nodule.

- 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.

- Thickened hypoechoic gallbladder wall – This is most consistent with an edematous gallbladder wall or “halo sign”.

- Hypoechoic, enlarged, irregular portal and mesenteric root lymph nodes – The moderate mesenteric lymphadenopathy is most concerning for a neoplastic process, although you can see significant lymphadenopathy in some cases of autoimmune/inflammatory disease, infectious disease(tick born disease-such as bartonella, fungal infections, FIP (cats)) etc. A fine needle aspirate with cytology is recommended for further evaluation.

SECONDARY FINDINGS

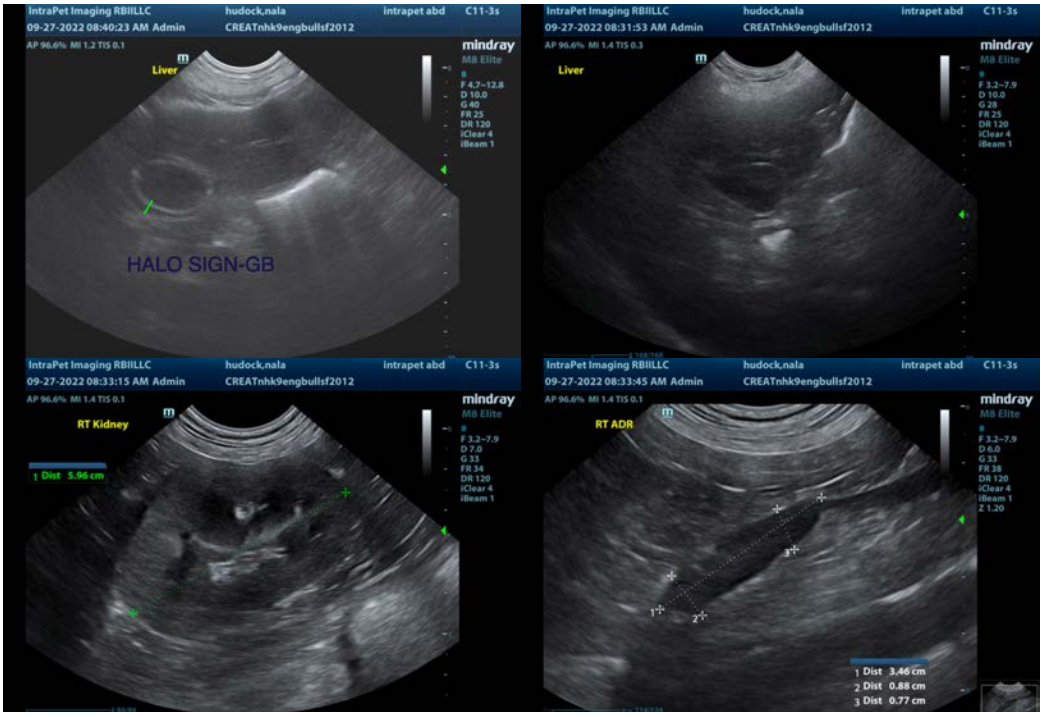
- Prominent mottled pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

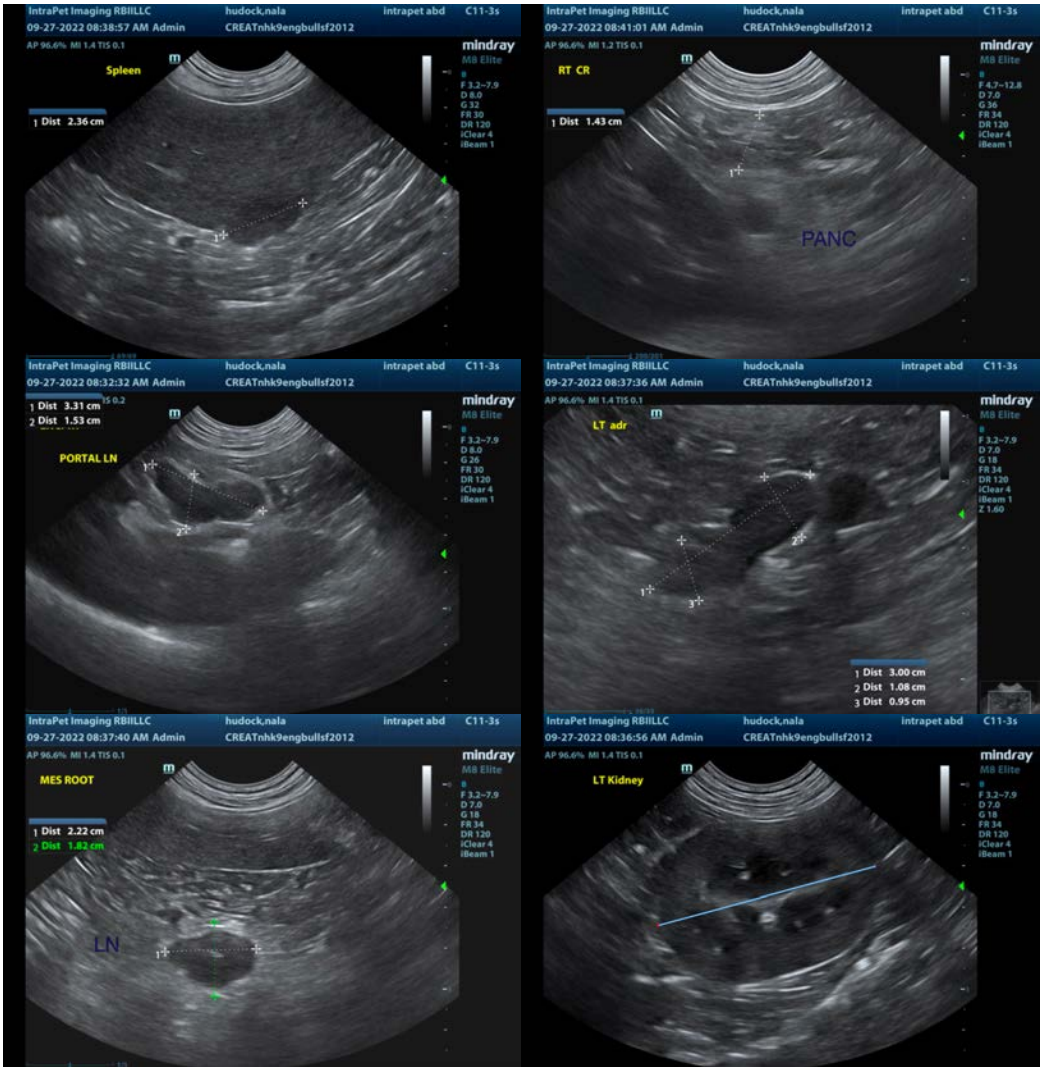
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The irregular large, hypoechoic lymph nodes are concerning. Unfortunately, I suspect they are too deep to easily sample. If an adequate window can be obtained, this would be great option. Additionally, the spleen is mottled, and the liver is hypoechoic and heterogeneous. Consider a fine needle aspirate at these two locations, provided coagulation parameters will allow. There is a slightly irregular "bleb" of tissue near the hilus. I suspect this is anatomic variant, but continued monitoring is warranted. Additionally, I would recommend a pre- and post-prandial bile acids to evaluate liver function.

The gallbladder wall is thickened and edematous. The significance of this is unclear. "Halo sign" has been reported to be seen with cases of anaphylaxis, right-sided heart failure, pericardial effusion, cholecystitis, pancreatitis, hypoalbuminemia, fluid overload, IMHA post-transfusion, etc.

Cushing's disease cannot be ruled out based on today's exam, as the left adrenal is borderline enlarged, and the right adrenal is somewhat prominent, but given the other findings and the results of your adrenal function testing, I would investigate further for an underlying disease process. If these are ruled out, and you're still concerned about adrenal dependent disease, you could consider an ACTH stim test with an adrenal panel to the University of Tennessee to look for production of atypical hormones such as 17 hydroxyprogesterone, etc.





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.

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