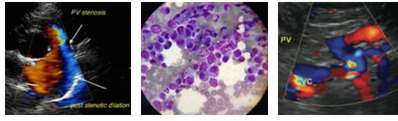


DATE
1/14/22

PATIENT
Red Dorsey

SPECIES
Canine

BREED
Chihuahua

SEX
Spayed Female

AGE
1/24/10

WEIGHT
11.7 lbs

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

HOSPITAL NAME
Northwind AH

REFERRING VET
Dr. Miller

INVOICE
95247

PRESENTING CLINICAL SIGNS

History: acute lethargy, acute anorexia, diarrhea, hx of Cushing's disease, grade II/VI l apical SHM.
Current Medications: 10/6/2021 Trilostane 15mg SID, 1/10/21 Cerenia 16mg X5d, Metronidazole 62.5mg BID X 7d.
Lab Results: GGT 236, ALT>1000, ALP>993, tbil 1.1.
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 (4.13 cm). Overall echogenicity is slightly hyperechoic with poor 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 (4.49 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. A 0.73 cm non-obstructive nephroliths was noted. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is large in size measuring 0.88 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 large 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 or large) 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 are no focal large lesions visualized in the spleen, but there are numerous, pinpoint, hyperechoic foci.

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 are occasional, irregular, hyperechoic nodules visualized. One measures 0.93 x 0.76 cm. Additionally there are very subtle hypoechoic nodules. One nodule measured 1.5 cm. 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, but there is some mucosal

stranding with early organization. This is consistent with early mucocele development. There is no evidence of bile duct dilation. 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 (0.38 cm) and the jejunum measured as normal (0.26 cm). 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, 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.

ULTRASONOGRAPHIC FINDINGS

PRIMARY FINDINGS:

- Bilateral adrenomegaly. The bilateral adrenomegaly could be consistent with bilateral hyperplasia (e.g., secondary to pituitary-dependent hyperadrenocorticism), bilateral infiltrative neoplasia, inflammatory adrenal disease, other. Correlation with clinical findings is recommended.

- Prominent mottled pancreas. The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.

- Large heterogenous liver with irregular/subtle hyperechoic and hypoechoic nodules. 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.

- Large gallbladder sludge with possible early mucocele development. The findings are most consistent with an early mucocele. I recommend to continue monitoring and medical management.

SECONDARY FINDING:

- Mildly mottled spleen with hyperechoic foci in the parenchyma. 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. This appearance subjectively favors a benign differential.

- Mildly decreased corticomedullary distinction in both kidneys with a right-sided, non-obstructive nephrolith. The bilateral renal findings are consistent with age-related change. The hyperechoic mineralized foci observed at the corticomedullary junction of the right kidney are consistent with small, non-obstructive nephroliths.

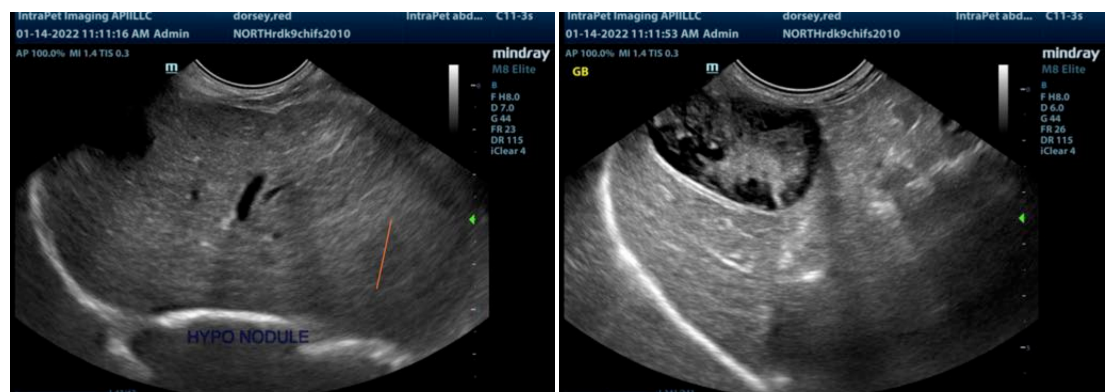
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

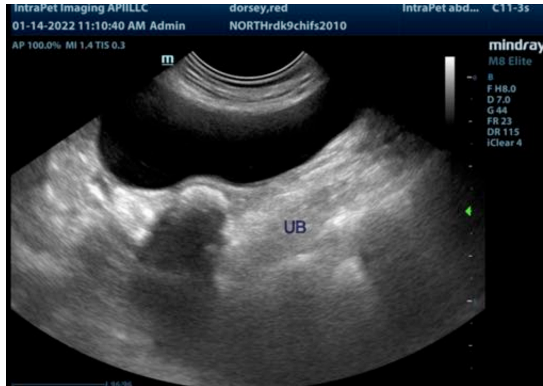
The current diagnosis of pituitary dependent Cushing's disease is supported based on these findings, but makes interpretation somewhat difficult. The liver is large and heterogenous with somewhat subtle nodules. The appearance of these nodules favors a benign process, but if liver function is abnormal or the patient is not feeling well you can consider a FNA. Additionally the gallbladder has a large amount of sludge with early organization, but there is no evidence of surrounding inflammation to indicate a surgical gallbladder. I would be consider medical management with Ursodiol and antibiotics with continued monitoring of the liver values and the appearance of the gallbladder with ultrasound. It may be helpful to send out lab work so you get actual numbers for the ALT and ALP so they can be followed and monitored for improvement or getting worse.

The pancreas is some prominent and the mesentery appears slightly hyperechoic. You can consider a GI panel to Texas A&M with a quantitative PLI, TLI, cobalamin and folate.

Regarding the liver changes these would be my recommendations:

- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc. The history of Cushing's disease can complicate evaluation of the liver enzymes, but in general the ALT should be significantly lower than the ALP.
- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history
- 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 medical care for gallbladder disease/inflammatory hepatitis (Denamarin, antibiotics,+/- Ursodiol etc...) Consider liver biopsy with samples obtained for histopathology, culture, and copper levels along with reevaluation fo the gallbladder.

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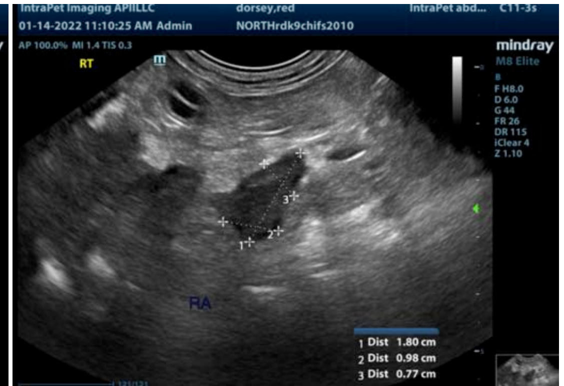
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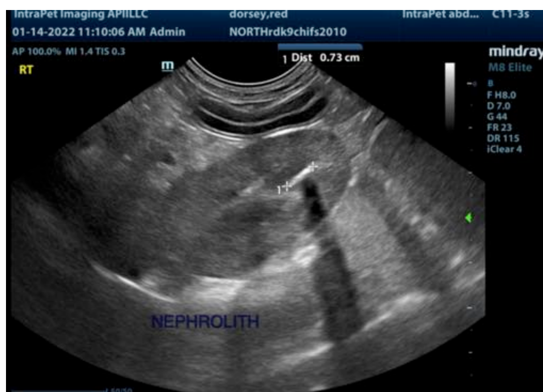
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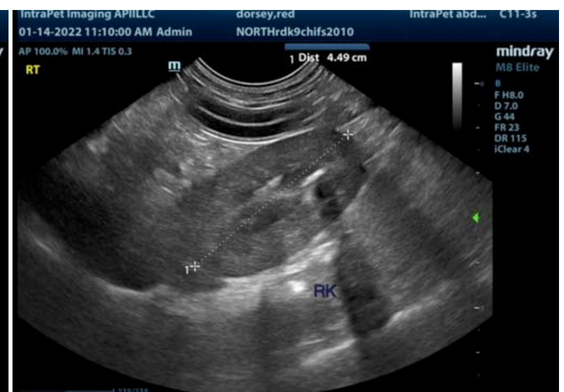
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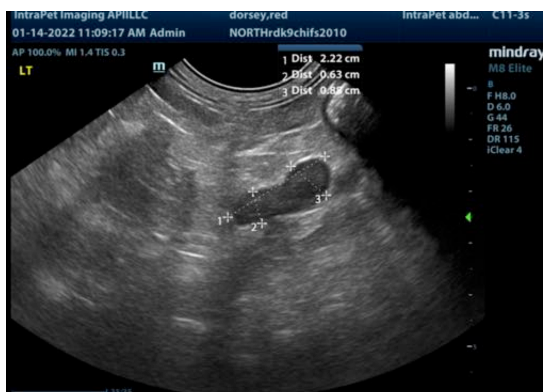
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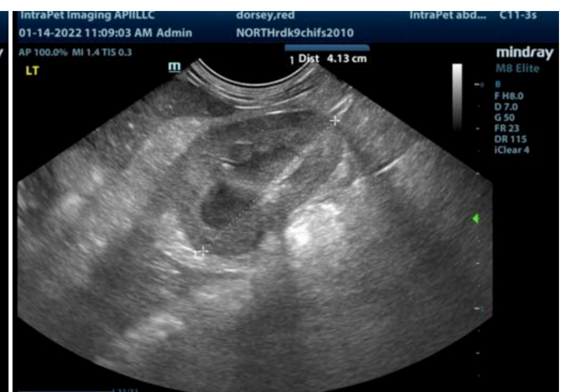
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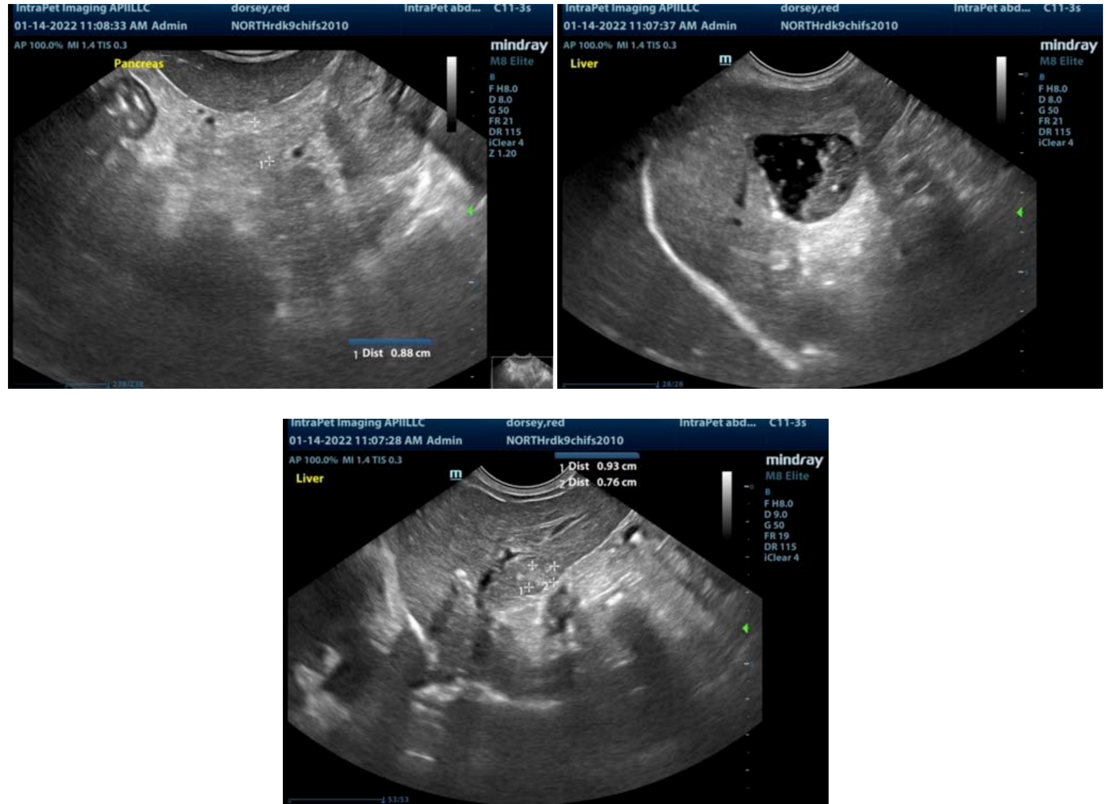

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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