IMAGING PERFORMED BY

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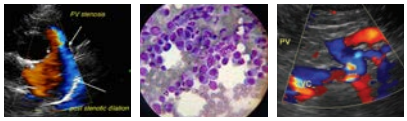

SonoPath

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DATE

10/20/22

PATIENT

Fletcher Bishop

SPECIES

Canine

BREED

Terrier X

SEX

Neutered Male

AGE

8/6/08

WEIGHT

19.3 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Healing Paws Vet Wellness Center

REFERRING VET

Dr. Levitsky

INVOICE

42238

PRESENTING CLINICAL SIGNS

10-20-22 – Healing Paws Veterinary Wellness Center – Dr. Levitsky.
Fletcher Bishop
Canine Terrier Mix 19.3lbs MN 8/6/2008.

Dog has cushings dz and hx of bladder stones. Repeat BW has revealed increasing GGT levels and while ALKP has lowered and ALT about the same.

Current Medications: Levothyroxine 0.2 mg 1 po bid, Herbal tx and supplements.
Lab Results: 11/21 Ca 11.8, T4 2.4, FT4 33.8, ALKP 710, GGT 13, ALT 106. 5/22 Ca 12.4, ALKP 852, GGT 11, ALT 136. 9/22 ALKP 559, GGT 24, ALT 135.
Date of Previous IntraPet Ultrasound: 2/17/22 and 5/23/22. Attached.
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 contents. No masses or inflammatory changes. Multiple shadowing cystoliths (largest measuring between 0.6-0.8 cm in diameter) as well as mineral debris/sand noted within the urethra to the level of the prostate. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Prostate is normal in size, echotexture and echogenicity for a neutered male.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia, or infarcts observed. The left kidney measured 5.01 cm. The right kidney measured 4.86 cm. Non-obstructive areas of mineralization/nephroliths are noted.

Adrenal Glands

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The left adrenal gland measures 2.45 cm long x 0.97 cm at the cranial pole and 0.86 cm at the caudal pole. The right adrenal gland measures 2.5 cm long x 1.2 cm at the cranial pole and 1.0 cm at the caudal pole. A hyperechoic nodule is noted in the caudal pole of the right adrenal gland. Nodule does not disrupt normal shape and/or architecture.

Spleen

Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). Multifocal well-demarcated hyperechoic homogenous nodules are noted. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged (swollen contour). Mild parenchymal remodeling with diffusely mildly coarse architecture and increased portal markings is present. No focal nodules or masses are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. Hyperechoic mucosal fogging or speckling is noted. Small intestinal motility appears adequate (1-3 contractions per min).

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The area of the pancreas contains irregular hyperechoic pancreatic remodeling.

Free Abdomen

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

- **Bilateral adrenomegaly –** consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism vs stress or normal variant. Interpret in combination with clinical signs of hyperadrenocorticism. This is consistent with this patient's history of hyperadrenocorticism.

- **Hypoechoic hepatomegaly** – This appearance is consistent with an acute hepatopathy or acute cholangiohepatitis. Infiltrative neoplasia (round cell neoplasia) should also be considered.

- **Gallbladder debris -** Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

- **Mucosal speckling –** Mucosal speckling is often present with inflammatory bowel disease (IBD). It is not specific for type or severity of disease. Mild speckling change can occur as a normal patient variant in the post-prandial state.

- **Hyperechoic pancreas –** This finding is suggestive of pancreatic fibrosis, possibly secondary to chronic pancreatitis. A TLI is recommended to rule out exocrine pancreatic insufficiency (EPI), especially if clinical signs (weight loss, diarrhea, etc.) are present.

SECONDARY FINDINGS

- Urinary bladder cystoliths

- Age related kidney changes with non-obstructive nephrolithiasis bilaterally

- **Hyperechoic splenic nodules –** most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are considered less likely.

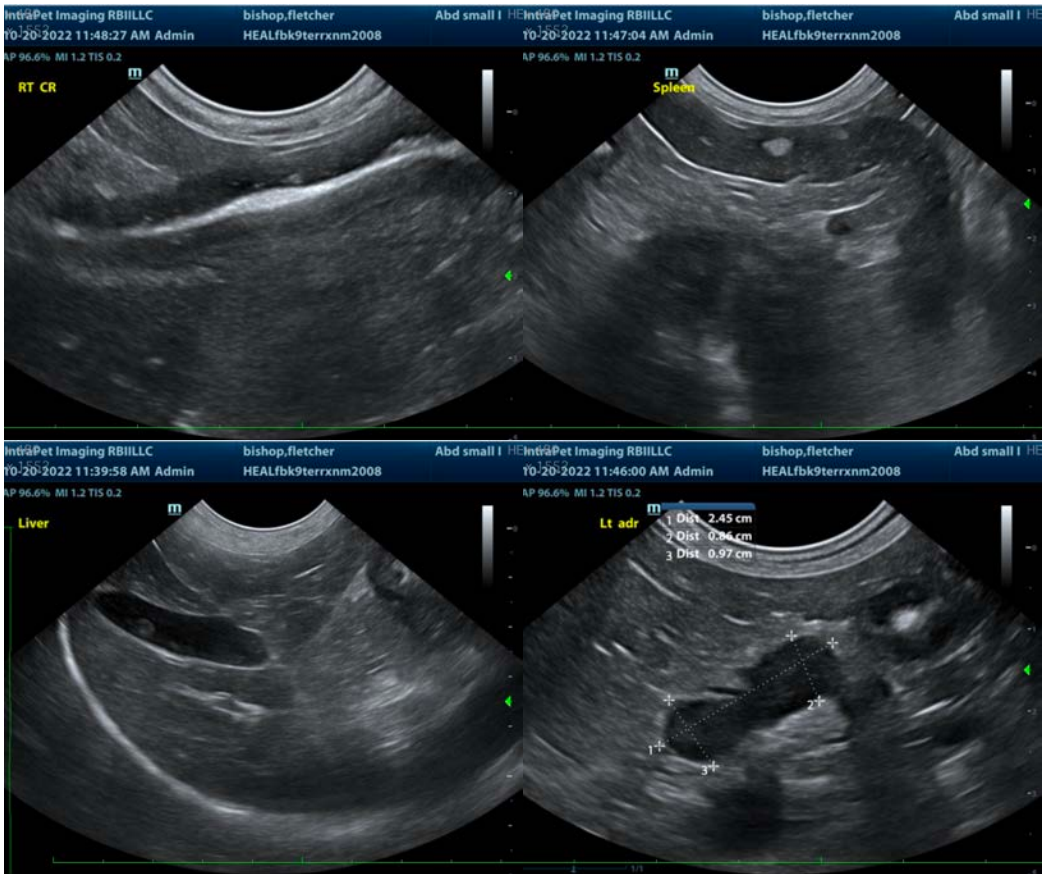
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

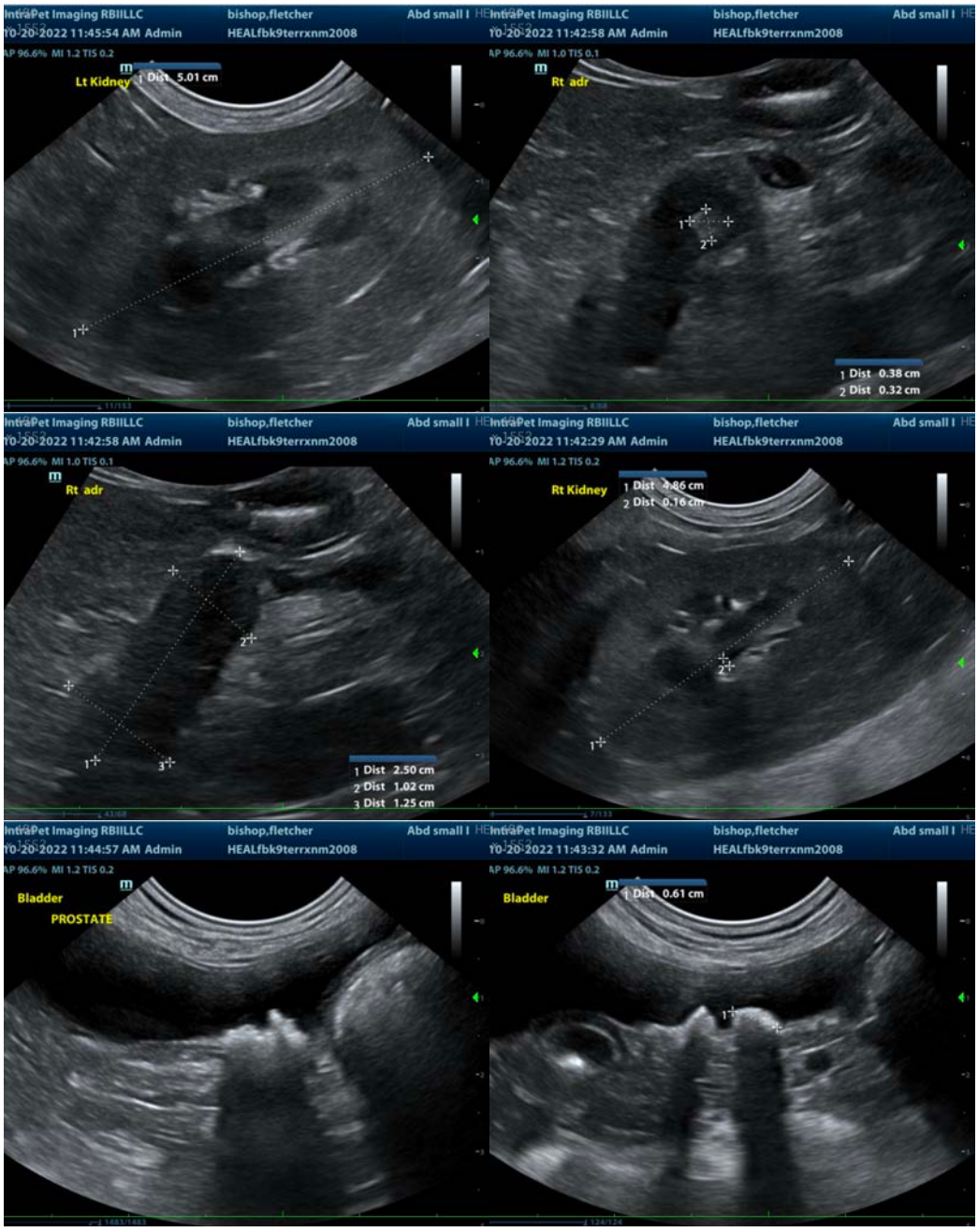
Overall, with the exception of the new mild hypoechoic liver parenchyma, this study is relatively unchanged from the previous study.

A high GGT can be associated with hyperadrenocorticism, similar to ALP, and if this patient is clinically well controlled and doing well, further intervention beyond just monitoring may not be necessary. Having said that, given the mildly hypoechoic hepatic parenchyma as a new finding, a fine needle aspirate of the liver could be considered if patient's coagulation status is appropriate, and/or combined with the very mild amount of gallbladder debris, a course of Ursodiol could be tried with monitoring of enzymes, especially GGT, for improvement.

Given the bowel and pancreatic changes, a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

Urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

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bishop,fletcher
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Lt Kidney
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Bladder
PROSTATE
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Bladder
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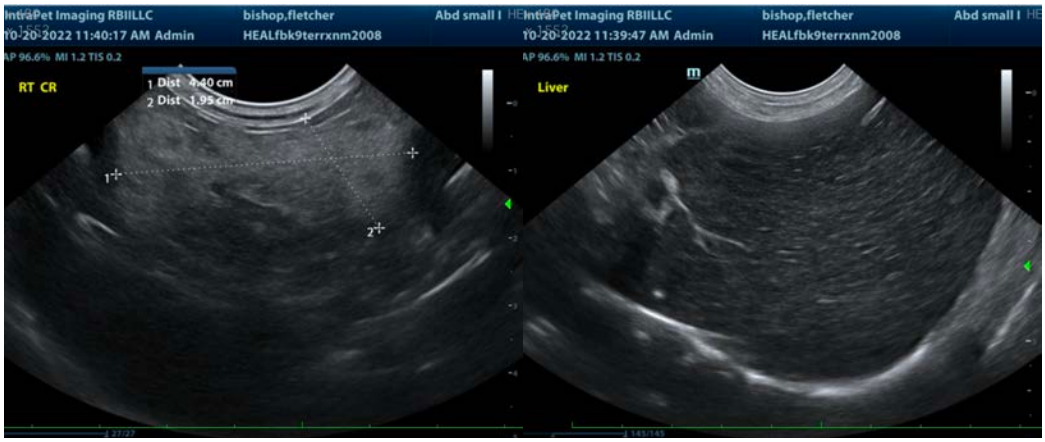

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
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