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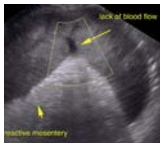
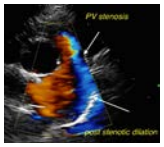
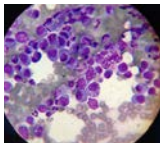
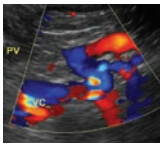

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1-800-838-4268 info@sonopath.com

PATIENT

Lucy Arendt

SPECIES

Canine

BREED

Miniature Pinscher

SEX

Spayed Female

AGE

10 Years

WEIGHT

14.48 Pounds

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Brian Klug

HOSPITAL NAME

Sondel Family VC

REFERRING VET

Dr. Chelsea Mohney

INVOICE

44668

DATE

2/1/22

PRESENTING CLINICAL SIGNS

Lucy was noted to have a mild ALP elevation in February 2020. Owner reported Lucy to be pu/pd and a LDDST was pursued and result was normal at that time march 9, 2020. Pre-op screen at time of dental August 2021 showed increased ALP 438, owner elected to pursue dental and continue to monitor ALP. Total body function performed Jan. 2023 showed a continuing to increase ALP 730. Recommended abd. u/s to rule out cushings even though LDDST was normal, liver disease, gall bladder disease, etc. Owner continues to note pu/pd at home.

Abnormal PE/Chem/CBC/UA Results: Feb 20, 2020 - elevated ALP 212 U/L (normal range 5-131 U/L), all other values wnl March 9, 2020 LDDST - pre 2.6mg/dL, post 0.3mg/dL, <0.2mg/dL - normal August 12, 2021 - pre op screen for dental procedure - elevated ALP 438 U/L (normal range 20-150 U/L) Jan. 17, 2023 Total body function (CHEM/CBC/SDMA/T4) elevated ALP 730 U/L (normal range 5-131 U/L), elevated BUN/CREA ratio 30 (normal range 4-27), elevated cholesterol 413 mg/dL (normal range 92-324), elevated triglycerides 1,110 mg/dL (normal range 29-291), elevated platelet count 507x10^9/l (normal range 170-400 x 10^9/l), all other values wnl.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

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, mineral or infarcts observed. Small bilateral cortical cysts noted. The right kidney measures 4.57 cm. The left kidney measures 4.38 cm.

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 right adrenal gland measures 1.04 cm at the cranial pole and 0.66 cm at the caudal pole. The left adrenal gland measures 0.48 cm at the cranial pole and 0.64 cm at the caudal pole.

Spleen

The 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). No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as mild 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

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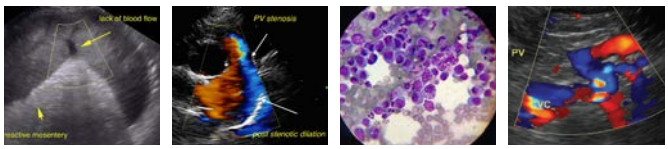

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The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

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

Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

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.

- **Heterogenous Liver –** These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.

- **Mild 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.

SECONDARY FINDINGS

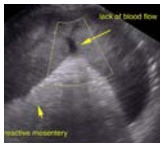
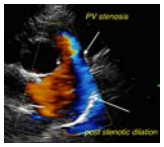
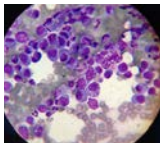
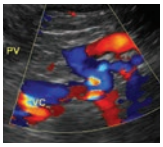
- Age related kidney changes with multifocal small cortical cysts bilaterally

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This patient's ultrasound pathology including the adrenal glands, the liver changes, the gallbladder changes, etc. are all suggestive of hyperadrenocorticism. Given this patient's supporting clinical signs, pituitary dependent hyperadrenocorticism is suspected.

Recommendations include a recheck low-dose Dexamethasone suppression test, and if that test is still negative, investigation of possible atypical hyperadrenocorticism with a full ACTH stimulation adrenal panel to the University of Tennessee could be considered.

In the meantime, if not recently evaluated, a 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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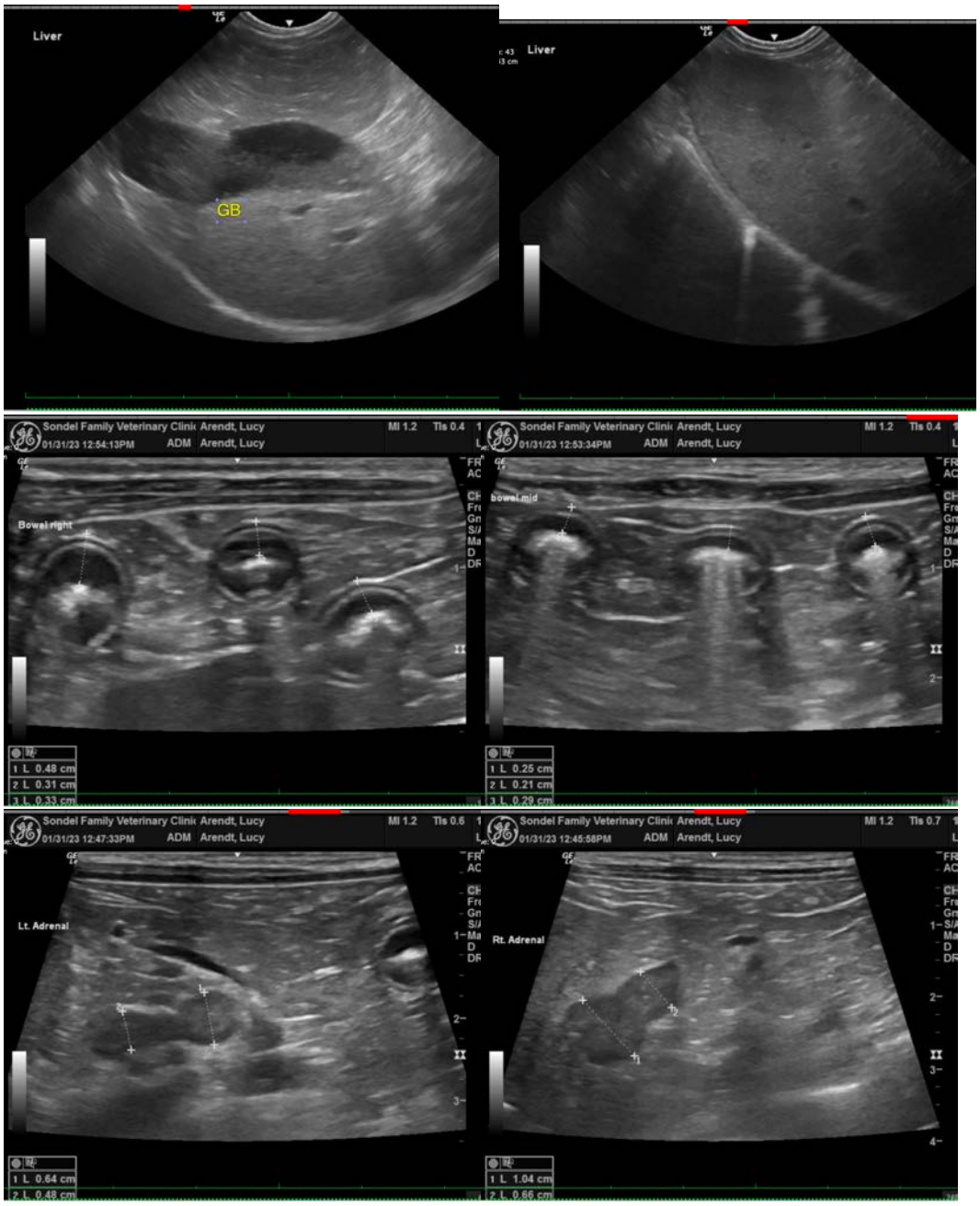
If not recently evaluated, a blood pressure is recommended.

Additionally, or alternatively if a diagnosis of hyperadrenocorticism is still not obtained, given this patient's hypertriglyceridemia, part of the ALP elevation could be a secondary cholestatic hepatopathy related to hypertriglyceridemia. Therefore, recommendations include rechecking triglycerides on a fasted sample, and if they are still high, transition to a low-fat diet, if tolerated, could be considered.



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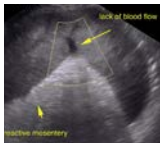
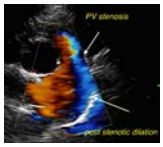
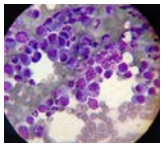
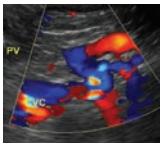

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
Beth.Johnson@sonopath.com