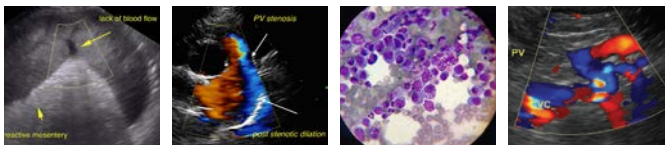
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Cooper Turbyfill

SPECIES
Canine

BREED
Yorkie

SEX
Neutered Male

AGE
11 Years 8 Months

WEIGHT
15.8 Pounds

INTERPRETED BY
Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY
Ashley Whitesell

HOSPITAL NAME
Dickson Animal Clinic

REFERRING VET
Dr. Richard Hovis

INVOICE
45876

DATE
3/14/23

PRESENTING CLINICAL SIGNS

Off and on vomiting, tender on abdomen palpation, distended abdomen

Abnormal PE/Chem/CBC/UA Results: ALT 718, AST 40, alk phos 8508, GGT 14, tbili 0.4; Na 162, Cl 122, cholesterol 673, triglycerides 778 want to rule out cushings. ACTH stim test pre 6.2 mg/dL post 20.56 mg/dL

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.

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 mineral or infarcts observed. Multiple small cortical cysts and mild pyelectasia (0.34 cm in the transverse view) are noted in the left kidney. The left kidney measures 5.1 cm. The right kidney measures 5.3 cm.

Adrenal Glands

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Some parenchymal heterogenicity is present without concerning capsular distortion. Visible surrounding vasculature appears normal. The left adrenal gland measures 0.75 cm at the cranial pole and 0.73 cm at the caudal pole. The right adrenal gland measures 0.58 cm at the cranial pole and 0.63 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). In the mid spleen, there is a 3.5 cm primarily isoechoic mass with a cavitated center, resulting in a capsular bulge. Splenic vasculature appears normal.

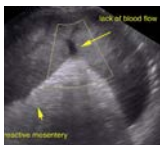
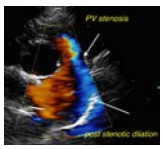
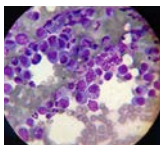
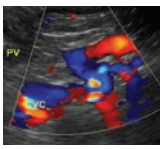
Liver

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

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.

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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 lumen is empty with no evidence of obstruction or foreign material.

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

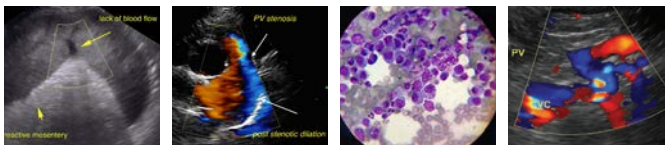
- **Bilateral adrenomegaly –** consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism vs stress or normal variant. Interpret in combination with clinical signs of hyperadrenocorticism.
- **Mucosal speckling –** Mucosal speckling is often present with inflammatory bowel 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.
- **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.
- **Cavitated splenic mass –** Concerning for infiltrative neoplasia such as sarcoma versus round cell neoplasia versus other. However, benign cysts, hematomas, extramedullary hematopoiesis, etc. can exactly mimic infiltrative neoplasia and cannot be ruled out without tissue sampling.

SECONDARY FINDINGS

- Age related kidney changes with cortical cysts and mild pyelectasia in the left kidney – Differentials for pyelectasia include pyelonephritis, diuresis, congenital malformation or ureteral or lower urinary tract obstruction.
- **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.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The question to be answered for this patient was whether or not he has Cushing's disease, and he could, either a combination of iatrogenic and natural or potentially just iatrogenic. However, further evaluation requires tapering of the Prednisone (if tolerated) and recheck hormone levels in the form of an ACTH stimulation test 4-6 weeks after stopping Prednisone. Having said that, that is not the most likely cause of the intermittent gastrointestinal signs and clinical illness. Recommendations regarding



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those clinical signs include further evaluation of possible gastrointestinal disease, as well as further evaluation of the splenic mass.

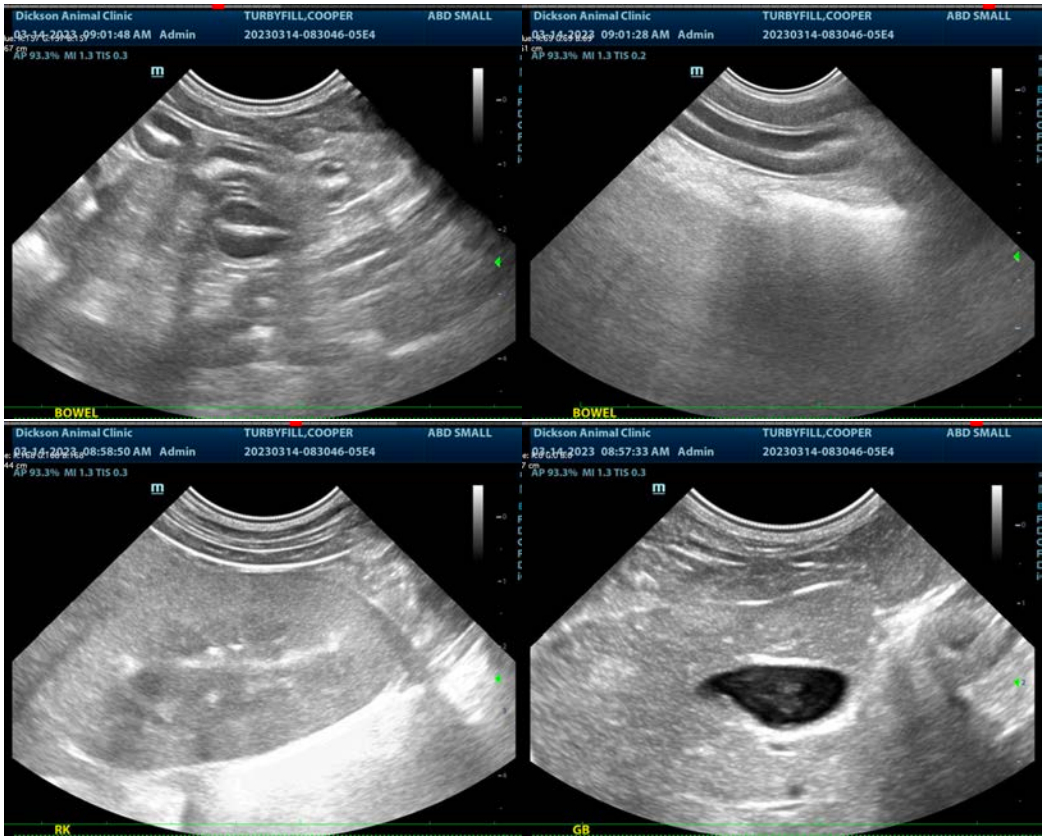
Recommendations also include three view thoracic radiographs for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

A fine needle aspirate of the splenic mass could be considered if patient's coagulation status is appropriate, or, given the risk of hemorrhage with a cavitated (even benign) splenic mass, exploratory laparotomy for planned splenectomy and histopath could be planned.

Prior to surgery, further evaluation of the gastrointestinal tract is recommended in the form of a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory, which may help determine whether gastrointestinal biopsies should be performed at the same of splenectomy.

Additionally, given the marked liver enzyme increases, which may be secondary to chronic steroids, a fine needle aspirate of the liver could also be considered if patient's coagulation status is appropriate. Or, if surgery is elected, a biopsy of the liver could be performed at the same time.

Additionally, 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 ratio is recommended.



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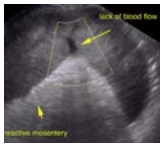
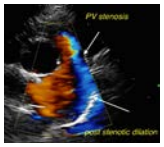
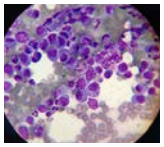
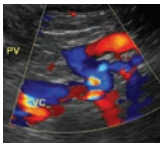

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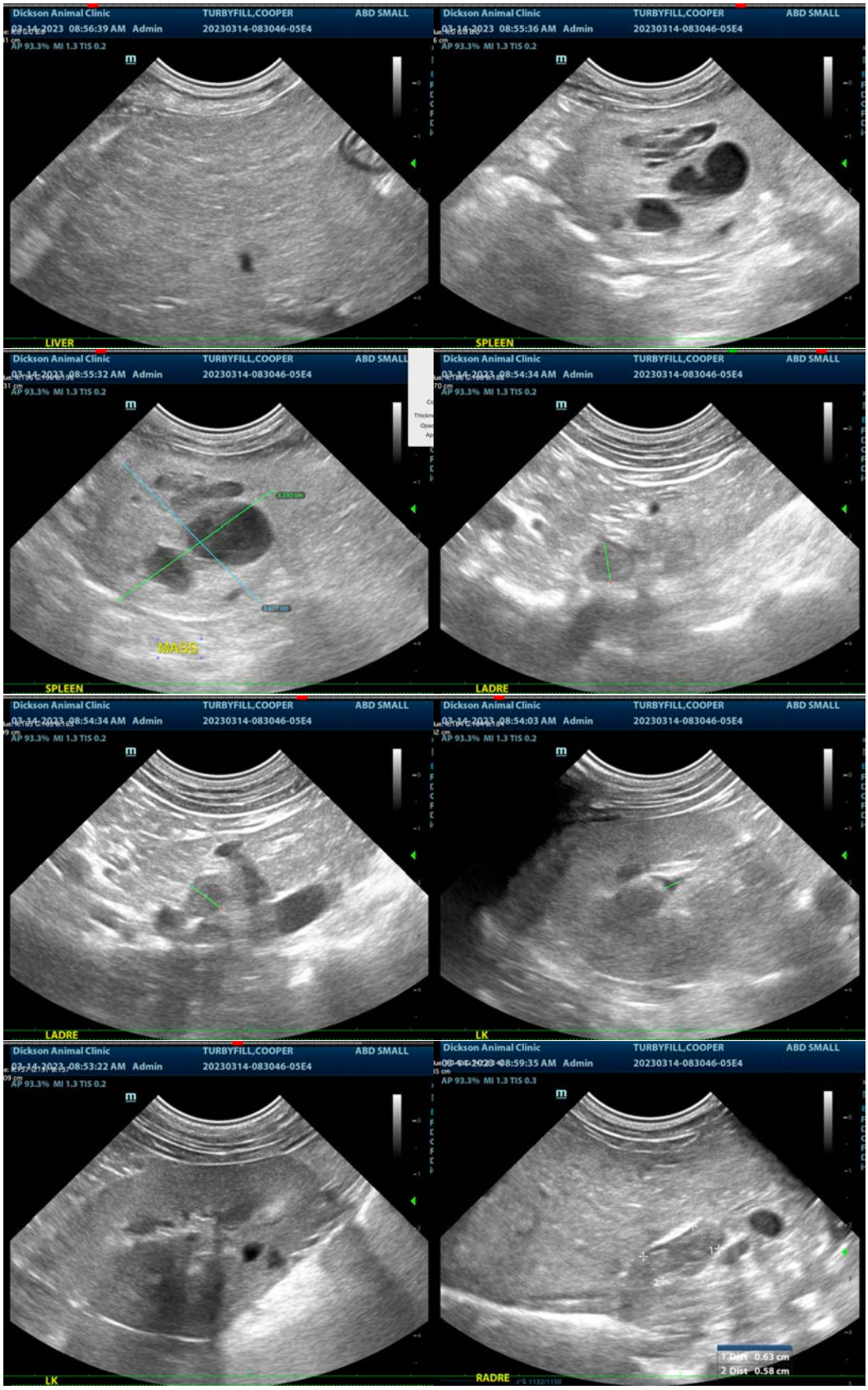

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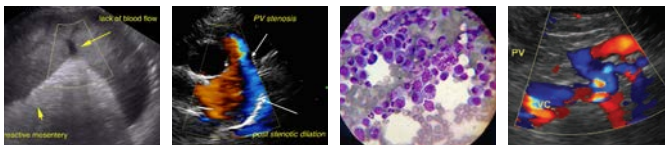

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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