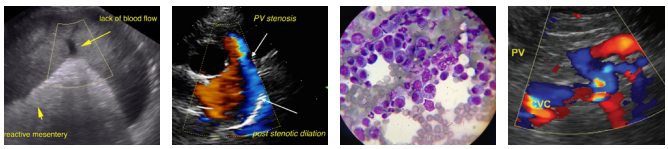
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Keani Aroesty

SPECIES
Canine

BREED
Shepherd X

SEX
Spayed Female

AGE
11 Years

WEIGHT
54.2 Pounds

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Shari Reffi, CVT

HOSPITAL NAME
American AH

REFERRING VET
Dr. Stockmal

INVOICE
35573

DATE
2/9/22

PRESENTING CLINICAL SIGNS

PU/PD per O. R/O Hyperadrenocorticism vs Pyelonephritis vs Liver Dz vs other
Abnormal PE/Chem/CBC/UA Results: ALT 135, ALKP 392, Prec. PSL 675, T4 0.5, USG 1.011, microalbuminuria 16.7

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is over distended, consistent with the reported polyuria/polydipsia. 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.

The right kidney is normal in size (6.29 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

The left kidney is normal in size (6.29 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

Adrenal Glands

The right adrenal gland is normal in size (3.34 cm long x 1.5 cm at the cranial pole and 0.96 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (2.29 cm long x 0.68 cm at the cranial pole and 0.68 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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 present. Splenic vasculature appears normal.

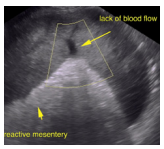
Liver

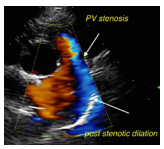
Liver is subjectively enlarged with rounded margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. One of the nodules is hypoechoic with a hyperechoic center, measuring 1.5 cm in diameter in the left liver. Visible vasculature appears normal.

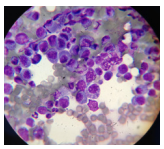
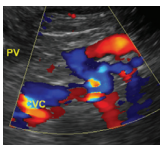
The gallbladder is moderately distended with anechoic bile and gravity dependent echogenic sediment. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

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 (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 peritoneal effusion. There is no apparent lymphadenopathy.

ULTRASONOGRAPHIC FINDINGS

- 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.

- 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 less likely.

- Heterogenous liver – Differentials for hepatic changes include both benign steroid (vacuolar) hepatopathy or extramedullary hematopoiesis as well as infiltrative round cell or metastatic neoplasia. One of the nodules has a characteristic target lesion appearance, which is a hypoechoic nodule with a hyperechoic center. These lesions can be associated with benign disease, but are often indicative of malignancy.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given the slightly abnormal appearance of one of the liver nodules in the otherwise heterogeneous liver, a fine needle aspirate of the liver is recommended if patient's coagulation status is appropriate. Given the microalbuminuria, a urine culture is recommended, and if negative, and the sediment is otherwise quiet, a urine protein to creatinine ratio would be recommended to further assess the proteinuria.

Polyuria/polydipsia – Differentials are vast and include, but are not limited to, primary polyuria caused by chronic kidney disease, pyelonephritis, liver disease, diabetes mellitus, hyperthyroidism, hypercalcemia, hyperadrenocorticism, hypoadrenocorticism, E.coli infectious ie) pyometra in females, polycythemia, central diabetes insipidus or primary nephrogenic diabetes insipidus or primary polydipsia caused by psychogenic polydipsia, fever, pain or central nervous system disease.

Most causes of PU/PD can be diagnosed with a comprehensive history and physical exam, a first AM urine specific gravity to see if urine concentration is possible (as most animals drink less overnight) followed by a comprehensive CBC, serum chemistry panel, electrolytes and urinalysis. If not, next step(s) should include a urine culture, low dose dexamethasone suppression test, T4, bile acids,

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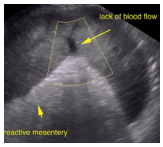

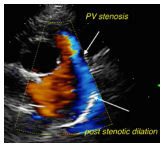

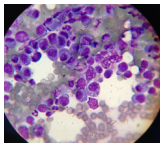
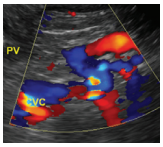

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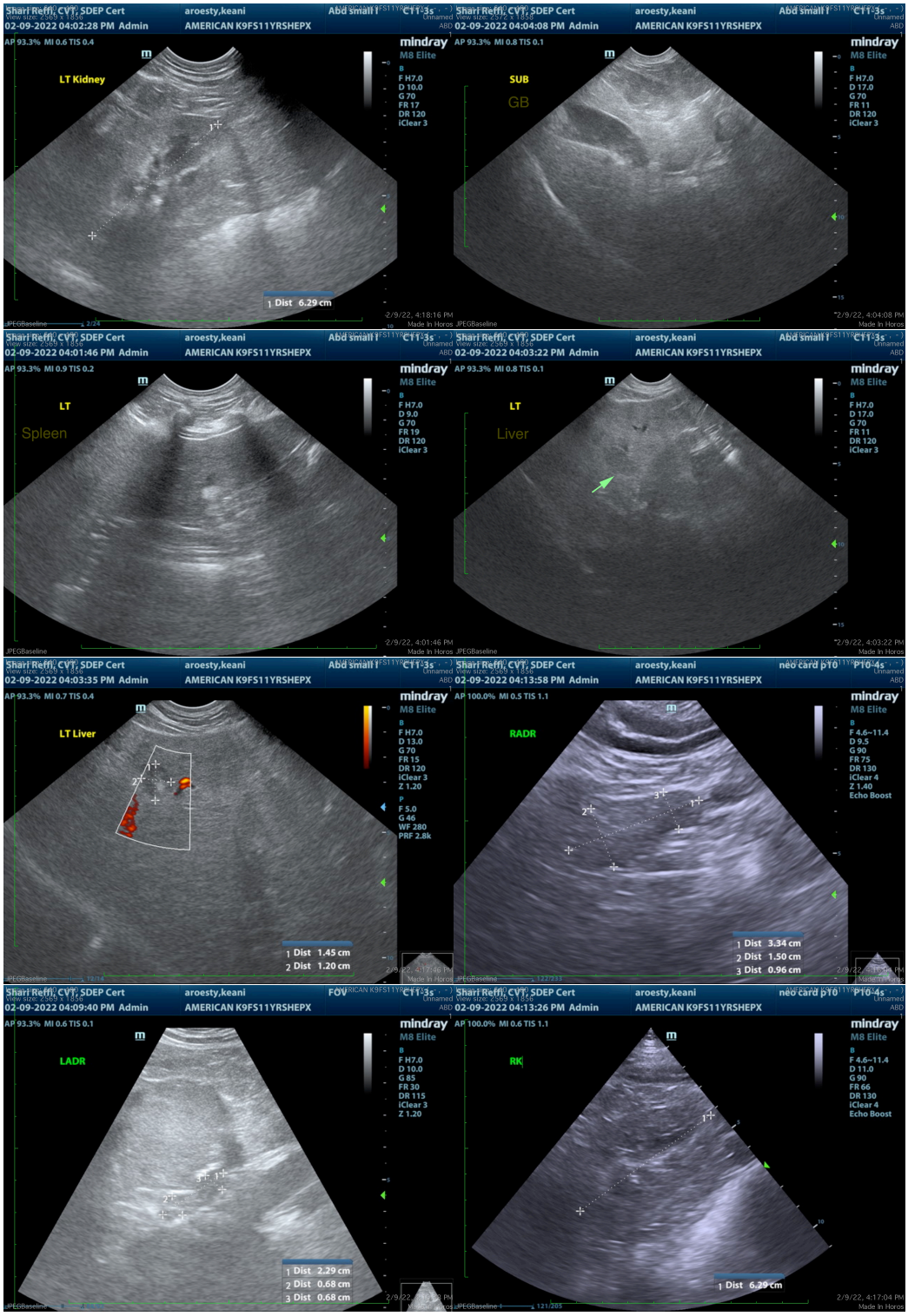
Leptospirosis testing and/or an empirical course of antibiotics. If a diagnosis is still not obtained, a more advanced work-up is recommended.



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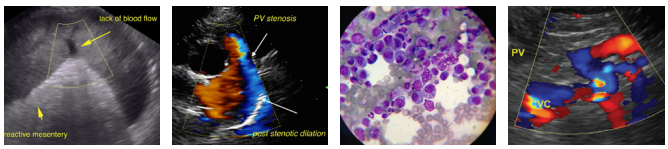

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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