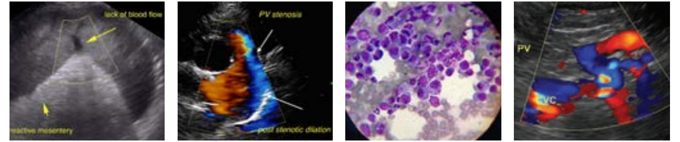
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Nibbler Smith

SPECIES

Canine

BREED

Battle Dog X

SEX

Neutered Male

AGE

13 Years

WEIGHT

50.8 Pounds

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Dr. Kara Wallisch

HOSPITAL NAME

Sondel Family VC

REFERRING VET

Dr. Kara Wallisch

INVOICE

43080

DATE

11/30/22

PRESENTING CLINICAL SIGNS

Referral from another clinic for further imaging: Per O, liver is enlarged and BW had elevated ALP and ALT. Started Denamarin, values came down a little bit but going up again. Cholesterol very high. Tested neg for Cushings. Current meds: Ursodiol, joint supplement, Denamarin

Abnormal PE/Chem/CBC/UA Results: Elevated ALT and ALP, elevated cholesterol (numbers unknown). Clotting panel normal. Cushings test neg (unknown which test).

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.

The prostate is not well visualized in these images.

The right kidney is normal in size (6.7 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 (7.3 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 not definitively visualized (see other).

The left adrenal gland is enlarged (0.72 cm at the cranial pole and 2.2 cm at the caudal pole) with mild heterogenous parenchymal changes. Swollen capsular expansion is noted without evident capsular escape or vascular invasion.

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.

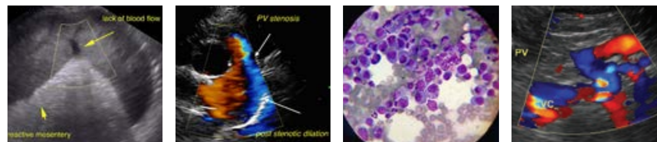
Liver

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 mildly overdistended with a moderate amount of non-dependent, mildly aggregated/inspissated sludge. Hypo to anechoic cystic areas are noted between the gallbladder sludge and luminal wall. The wall is otherwise smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion.

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 free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

An approximately 5.0 cm heterogeneous mass is noted medial and cranial to the right kidney in the area of the right adrenal gland. However, the right adrenal gland is not definitively visualized, and in some images the mass looks more hepatic in origin.

ULTRASONOGRAPHIC FINDINGS

- **Mid right abdominal mass** – This mass is heterogeneous in appearance and appears to be hepatic in origin. However, a heterogeneous right adrenal mass cannot be definitively ruled out.

- **Left adrenal mass –** consistent with adenoma or possibly hyperplasia. Early pheochromocytoma cannot be ruled out. Interpret in combination with clinical signs of hyperadrenocorticism or other adrenal disease.

- **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.

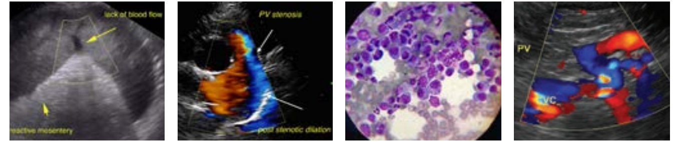
- **Emerging mucocele –** Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. The non-dependent nature of this sludge combined with the cystic areas are suggestive, however, of possible emerging cystic mucosal hyperplasia or early gallbladder mucocele.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

For further evaluation of the mass origin, a contrast abdominal CT scan could be considered. Alternatively, given reportedly historically normal adrenal testing and the suspicion that the mass is associated with the liver versus the adrenal gland, a fine needle aspirate of the mass could be considered if the patient's coagulation status is appropriate, understanding that there is more risk associated with the aspirate if it is in fact an adrenal mass.

The described adrenal gland, liver and gallbladder changes are all suggestive of hyperadrenocorticism. If clinical signs of hyperadrenocorticism, such as polyuria, polydipsia, polyphagia, panting, hair loss,



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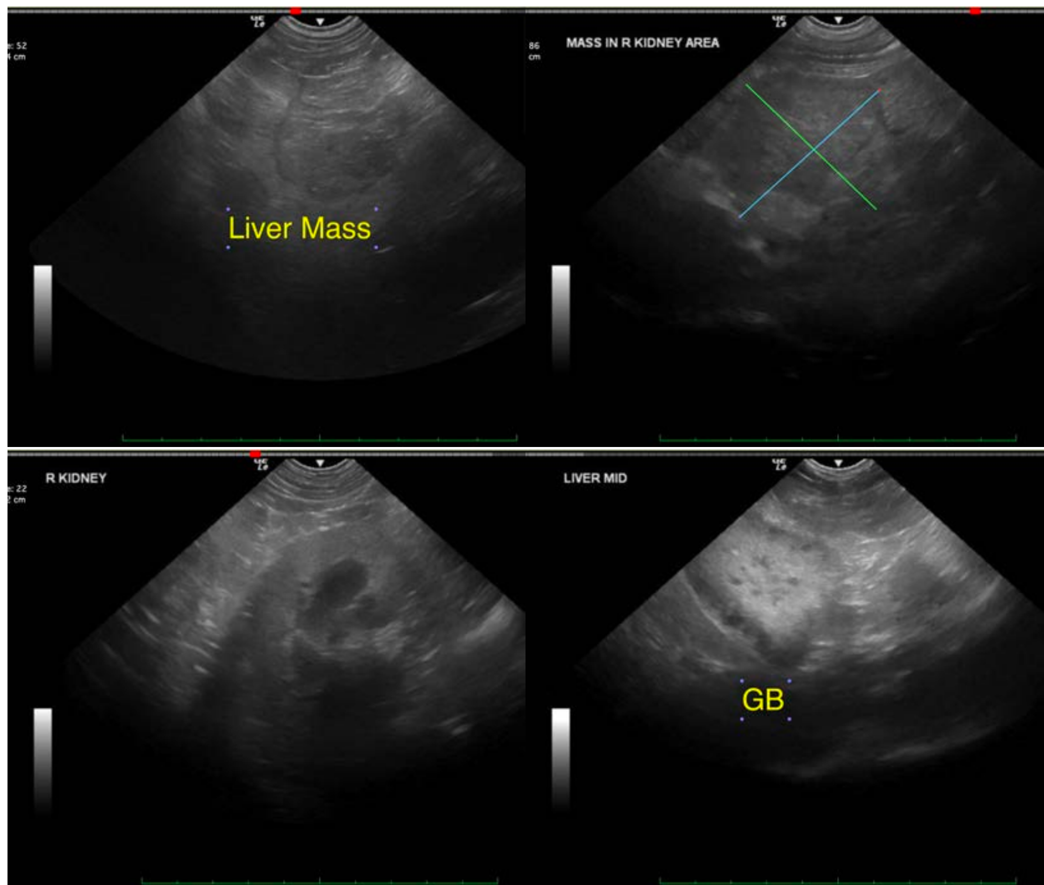
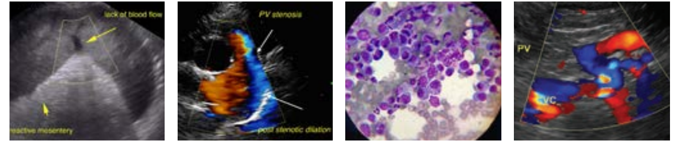
hypertension, etc. are present, testing for hyperadrenocorticism with a LDDS test is warranted. If a LDDS test has been evaluated with a normal result, investigation of possible atypical hyperadrenocorticism with a full ACTH stimulation adrenal panel to the University of Tennessee could be considered. If clinicals signs are not present, monitoring is recommended with testing pursued when/if clinical signs develop. Regardless of clinical signs, if not recently evaluated, blood pressure is recommended. If not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture is also recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

In the meantime, if advanced diagnostics are not an option, continued hepatic nutraceuticals including Ursodiol are recommended, given the emerging gallbladder mucocele, as well as management of any hypertension, proteinuria, etc.





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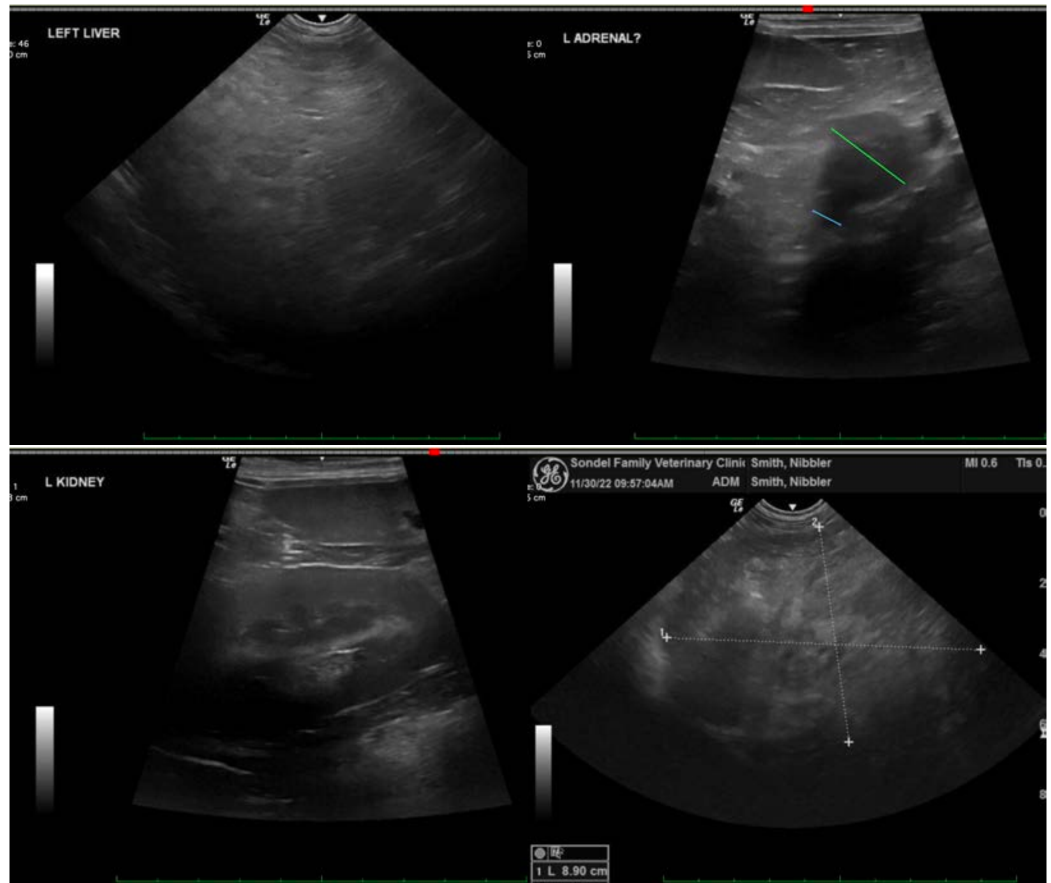

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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