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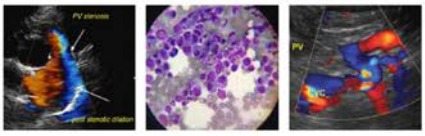

SonoPath
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PATIENT

Theo Debolski

SPECIES

Canine

BREED

Dachshund

SEX

Neutered Male

AGE

12 Years

WEIGHT

19.4 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Dr. Neil Coleman

INVOICE

45410

DATE

2/22/23

PRESENTING CLINICAL SIGNS

Patient has clinically been doing well. Patient first presented to us on 06/25/2022 for a superficial pyoderma that was resolving with antibiotics and steroids prescribed at other DVM. A blood panel was performed on 11/08/2022 due to patients age and possible history of uncertain previously elevated values. Those results indicated generalized elevation of liver enzymes. Since patient was clinically doing well, a denamarin trial was instituted and liver enzymes progressed slightly but stayed fairly stable.

Abnormal PE/Chem/CBC/UA Results: Most recent blood work was Total Health to Idexx on 12/21/2022. This sample was collected after a 30 day trial on Denamarin following previous lab work on 11/08/2022. 12/21/2022 Total Health: - Mild polycythemia - Mildly decreased reticulocyte hemoglobin - Mild thrombocytosis - Mild hypochloremia - Mild hyperalbuminemia - Mildly elevated ALT 237 (was 220 on 11/09/2022), AST 63 (was 61), GGT 25 (was 23), AlkPhos 501 (was 451) - Mild hypercholesterolemia - Mildly elevated lipase Most recent PE from 06/25/2022: Physical Exam: Alertness - BAR Pain Level (0-4): 0 Hydration - wnl, euhydrated MM=pk, moist CRT=<2sec EENT - E - mild lenticular sclerosis OU, E - clean AU, N - nsf, T - nsf ORAL - 2/4 calc generalized. CV/RESP - nsf, no murmur auscultated, pulses wnl, lungs clear. GI/GU - nsf, no organomegaly. Soft, nonpainful abdomen. Integ - resolving apparent epidermal collarettes on dorsal thorax and ventral abdomen, no fleas or flea dirt, no dander. Ms/Neuro - Ambulatory x 4. Mentation wnl. LN - nsf, no enlargement.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is only mildly distended (empty). Visible contents are anechoic. Urinary bladder wall is unable to be fully assessed for pathology without further distension. No visible masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface. If there are urinary signs and/or concern for urinary bladder pathology, reassessment after complete filling is recommended.

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

The right kidney is normal in size (5.58 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 (5.25 cm), shape and echogenicity. Multiple small cortical cysts are noted. 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 (0.65 cm at the cranial pole and 0.67 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 (0.44 cm at the cranial pole and 0.48 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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). Several small 0.3-0.4 cm hypoechoic non-capsule disrupting nodules are noted

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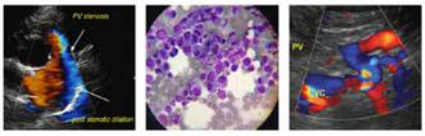

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throughout the spleen, as well as a 1.0 cmx 1.5 cm mixed/cystic nodule near the tail of the spleen, resulting in a mild capsular bulge. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Specifically, multipole discrete nodules/masses are noted including a homogeneous hyperechoic 2.0 cm nodule in the mid caudal liver, a 2.0 cm cystic nodule in the left caudal liver, a 2.5 cm x 2.8 cm homogeneous hyperechoic nodule/mass in the left liver, and a 5.5 cm x 5.8 cm more heterogeneous microcystic mass in the caudal right liver/caudate lobe. 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.

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

- **Heterogenous liver with multiple discrete hyperechoic nodules –** 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. Differentials for the hyperechoic nodules include primarily benign changes such as nodular hyperplasia, fibrosis of old hematomas, granulomas, myelolipomas, etc. However, infiltrative neoplasia including primary hepatic neoplasia, round cell neoplasia, or even metastatic disease can mimic benign lesions and cannot be definitively ruled out, especially given the larger, more heterogeneous appearing mass in the caudal right liver, which again could represent marked nodular hyperplasia, steroid or vacuolar hepatopathy, etc., but infiltrative neoplasia can't be ruled out.

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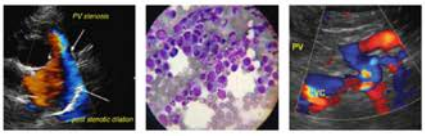

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- **Hypo to anechoic splenic nodules** – likely represent benign lesions such as a cyst, hematoma, nodular hyperplasia, extramedullary hematopoiesis, etc., however while considered less likely, infiltrative neoplasia can mimic benign lesions, and cannot be ruled out.

ULTRASONOGRAPHIC FINDINGS

- Multiple small cortical cysts in the left kidney
- **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.

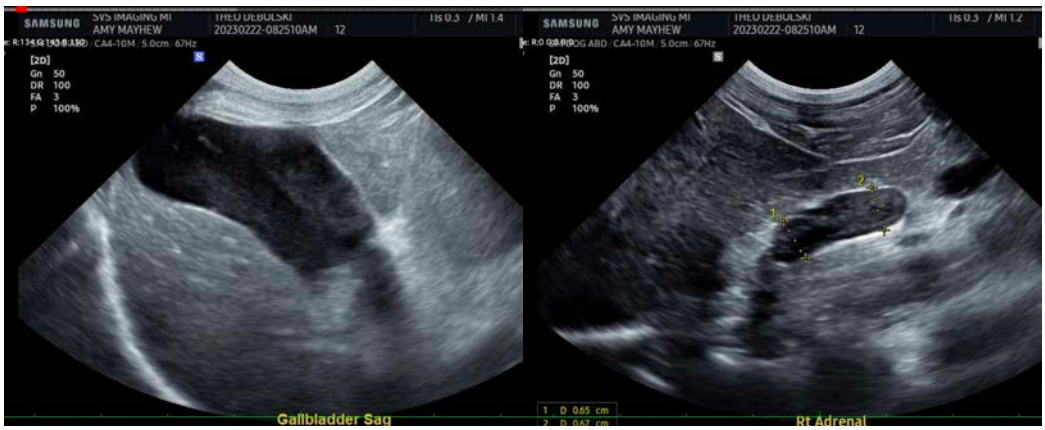
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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.

Fine needle aspirates of the liver nodules/masses, especially the largest mass in the caudate lobe of the liver, are recommended if patient's coagulation status is appropriate. Having said that, the overall general appearance of the lesions trends in appearance toward benign, in which case the reported increased liver enzymes and other laboratory changes could be consistent with hyperadrenocorticism.

If the patient has clinical signs of hyperadrenocorticism including PU/PD, etc., then further investigation pending the above cytology results, in the form of a low-dose Dexamethasone suppression test, is indicated. However, without supporting clinical signs, further evaluation for hyperadrenocorticism is not recommended, except for (if not recently evaluated), a urinalysis and, if indicated based on urinalysis results, urine culture. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

Blood pressure is also recommended.



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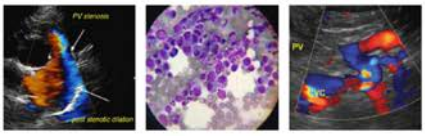

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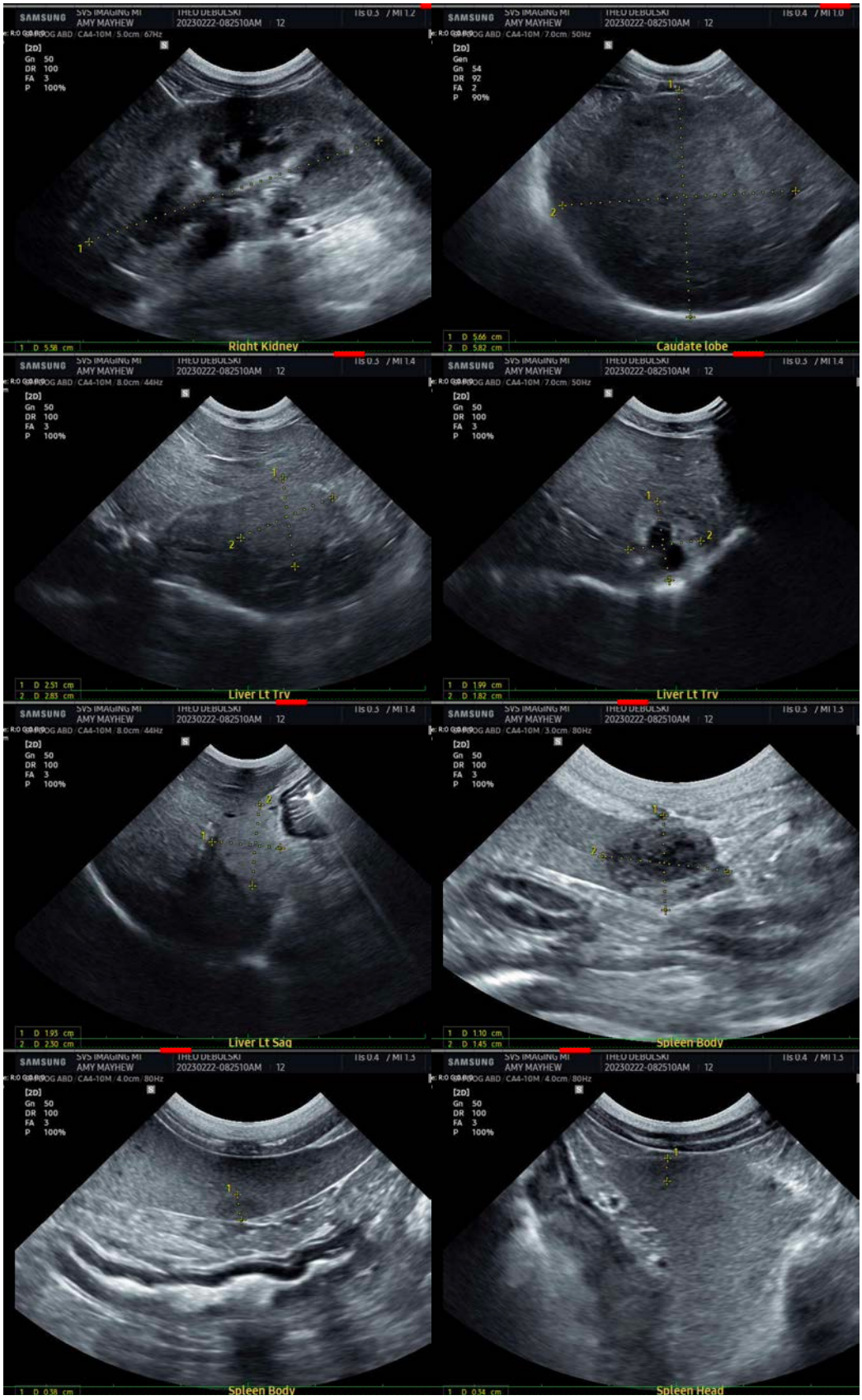

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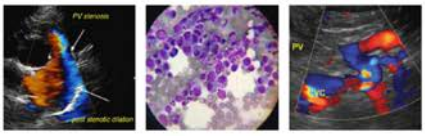

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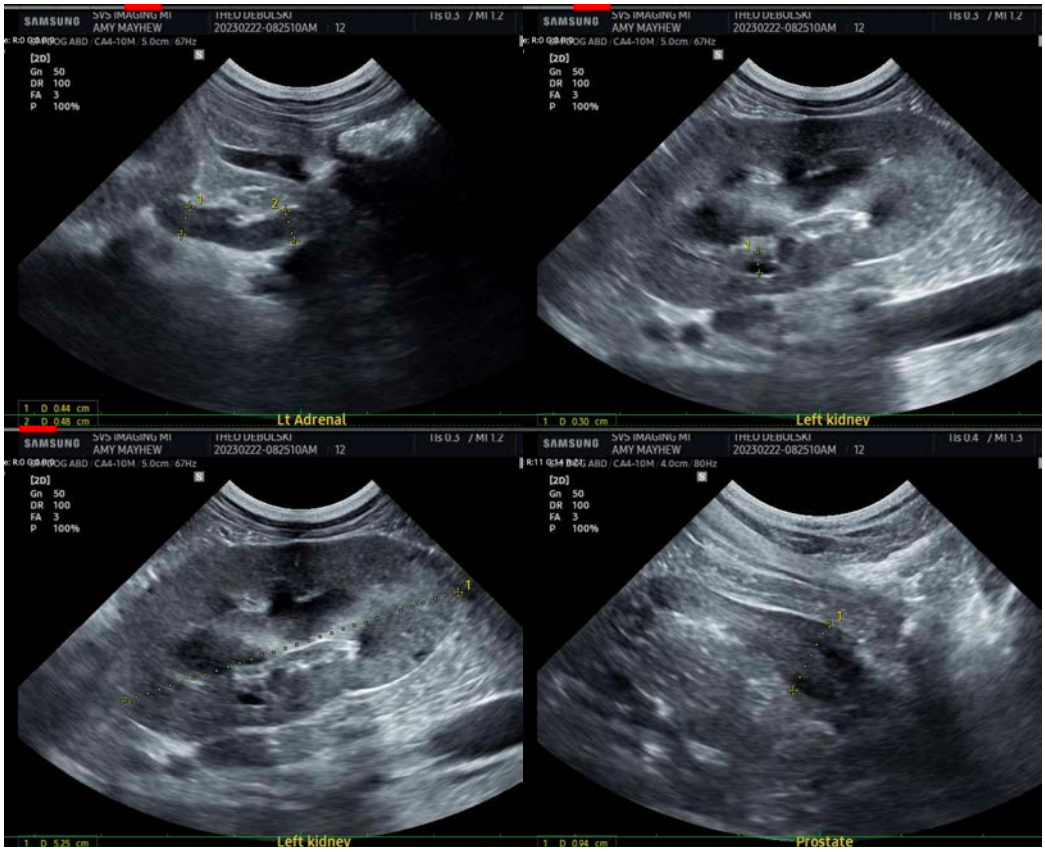

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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