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Clinical Sonography & Telecytology
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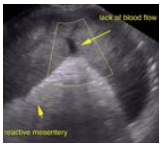
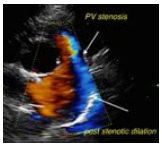
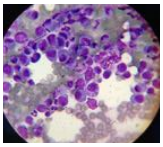
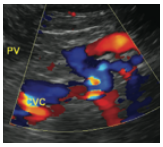

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1-800-838-4268 info@sonopath.com

PATIENT
Lily Welp

SPECIES
Canine

BREED
Golden Retriever

SEX
Spayed female

AGE
11 years

WEIGHT
36.5 kg

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Dr. Barnes

HOSPITAL NAME
Westview VH

REFERRING VET
Dr. Barnes

INVOICE
31664

DATE
7/11/22

PRESENTING CLINICAL SIGNS

Previous echo and AUS Dec 2021 DMVD Stage B1, Trace TR and PI Hepatic mass removed from the left medial lobe of the liver, Dec 2021. Hepatocellular carcinoma (HCC) on histo Hx of Mild left adrenomegaly. Low USG 1.009, Proteinuria
Abnormal PE/Chem/CBC/UA Results: Dog doing well, but has not regrown any hair on her abdomen or thorax since last scan in Dec 2021. Coat has a yellowish hue. CBC decreased Retic-HGB, Lymp, Eos Chem: Creat 160 (N 44-159), Urea 26.8 (N 2.5-9.6). Alt 516 (N 10-125), ALKP 260 (N 23-212), GGT 13 (N 0-11) Rest WNL

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with exfoliated cells, mucous and/or small blood clots. Both sterile inflammation as well as urinary tract infection can also present with echogenic debris. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Kidneys are normal in size and contour. A relatively uniform hyperechogenicity is observed with mildly decreased corticomedullary distinction. There is no pyelectasia noted and no mineral is observed. No overt masses/nodules are observed. The left kidney measured 7.43 cm. The right adrenal gland measured 7.91 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 left adrenal gland measured 3.88 cm long, 1.22 cm at the cranial pole and 1.12 cm at the caudal pole. The right adrenal gland measured 5.51 cm long, 1.01 cm at the cranial pole and 1.29 cm at the caudal pole.

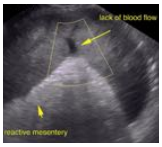
Spleen

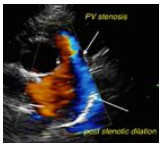
Spleen is generally normal in size and shape with a smooth capsular contour. Parenchyma is diffusely nodular in appearance characterized by small discrete hypoechoic nodules. Splenic vasculature appears normal.

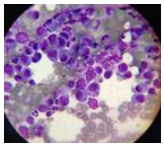
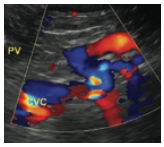
Liver

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 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.





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Gastrointestinal

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent. The gas is producing such strong acoustic shadow that a non-obstructive foreign body cannot be ruled out, yet considered less likely.

The visible small intestines are normal in wall thickness and layering. 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 observed pancreas appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no evidence of peritoneal effusion or apparent lymphadenopathy noted in these images.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

Nephritis – This appearance can be consistent with chronic interstitial nephritis or glomerulonephritis. Toxic insult and/or infectious disease (pyelonephritis, Leptospirosis, etc.) cannot be ruled out. This finding should be interpreted in combination with suspicion for renal disease and/or supporting laboratory or urinalysis changes.

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.

Bilateral adrenomegaly – consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism vs stress or normal variant. Interpret in combination with clinical signs of hyperadrenocorticism.

Gallbladder debris (canine) - 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.

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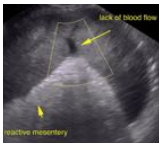
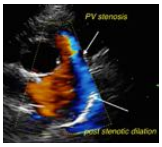
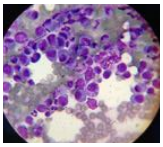
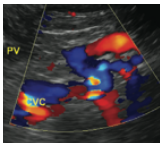

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Secondary Findings

Urinary bladder debris.

Splenic micronodular hyperplasia pattern – This nodular change is often associated with benign aging nodular hyperplasia. Infiltrative neoplasia, however, including both early hemangiosarcoma as well as round cell neoplasia cannot be ruled out.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given this patients reported proteinuria a urine protein to creatinine ratio is recommended if not recently evaluated.

Blood pressure is recommended if not recently evaluated.

Given the reported azotemia and liver enzyme increase combined with the ultrasound changes present testing for Leptospirosis is warranted.

FNA of the liver can be considered if the patient's coagulation status is appropriate. There is no evidence of focal discrete mass recurrence.

Given the mild adrenomegaly as well as some of the other changes including the liver change and gallbladder changes, etc. hyperadrenocorticism is a likely cause for this patient's lack of hair regrowth. However, hyperadrenocorticism does not typically result in the azotemia reported here or the ALT to ALKP ratio reported. Therefore, recommendations include further investigation of those problems as stated above prior to pursuing hyperadrenocorticism.

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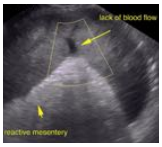
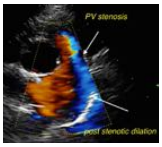
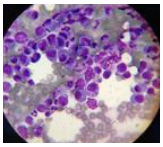
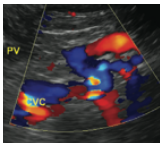

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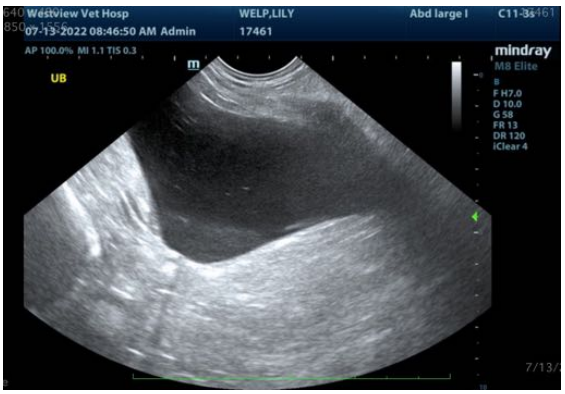

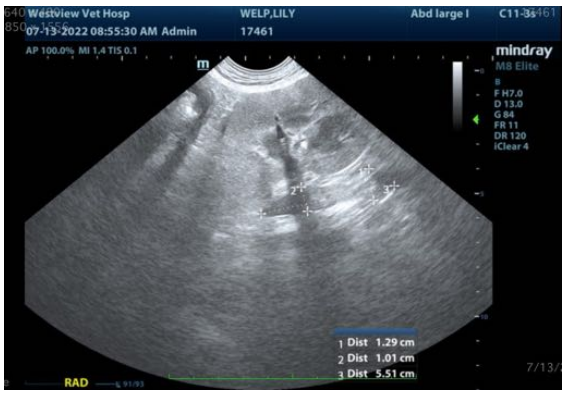

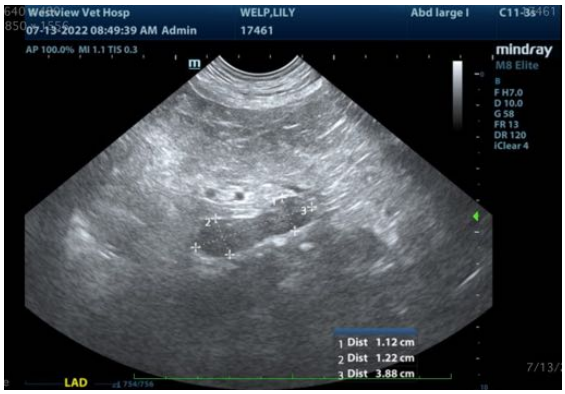

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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