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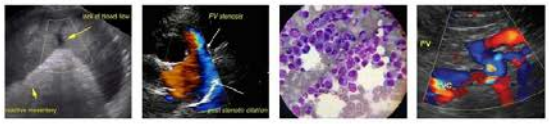


IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Beau Kingsley

SPECIES

Canine

BREED

Cocker Spaniel X

SEX

Neutered Male

AGE

11 Years

WEIGHT

33.8 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Loetitia Saint-Jacques, LVT

HOSPITAL NAME

Desert Hills AH

REFERRING VET

Dr. Michelle Caldwell

INVOICE

43603

DATE

12/20/22

PRESENTING CLINICAL SIGNS

Patient presenting for abdominal ultrasound today for further evaluation of elevated liver values. Pre-op lab work done for anticipated dental procedure, patient has grade 4/4 dental disease with extraction needs anticipated. However, results for recent LW are as follows: Recommend AUS for further eval of liver due to liver enzyme elevations prior to pursuing anesthesia, r/o potential hepatitis vs. possible gall bladder structural concern (mucocele vs. other) vs. possible neoplasia vs. other. Recommend this as next step prior to considering anesthesia for OHP/dental discussed with owner.

Abnormal PE/Chem/CBC/UA Results: Chem panel: ALT elevated at 486 (12-118), ALP elevated at 518 (5-131), GGT significantly elevated at 36 (1-12). Globulins mildly increased at 3.7 (1.6-3.6). Cholesterol elevated at 368 (92-324), Triglycerides elevated at 385 (29-291), r/o post-prandial vs. persistent values. PSL elevated at 189 (24-140), r/o possible chronic pancreatitis with history of grass ingestion, however without active GI upset, PSL likely not significant finding. Rest of chem panel WNL. T4 WNL at 0.9 (0.8-3.5) CBC: Platelets elevated at 435 (170-400), monocytes elevated at 1353 (0-840). Rest WNL UA: USG 1.013. pH 8.0. Trace proteinuria. RBC's 4-10/HPF and 1+ occult blood likely due to cysto. Rest WNL HWT - NEG Fecal O/P NEG.

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 pyelectasia, mineral or infarcts observed. The left kidney measures 4.84 cm with pyelectasia measuring 0.49 cm in the transverse view. The right kidney measures 5.05 cm.

Adrenal Glands

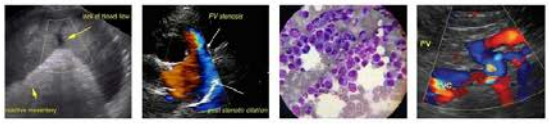
The right adrenal gland is normal in size (1.2 cm at the cranial pole and 0.44 cm at the caudal pole), shape and contour. A hyperechoic nodule is noted in the cranial pole. Nodule does not disrupt normal shape and/or architecture. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.41 cm at the cranial pole and 0.52 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). No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver



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The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. Multifocal discrete, approximately 1.0-1.5 cm hyperechoic nodules are noted throughout the parenchyma as well as a slightly larger 1.5-2.0 cm homogeneous iso- to hyperechoic nodule/mass in the mid caudal liver adjacent to the gallbladder. 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.

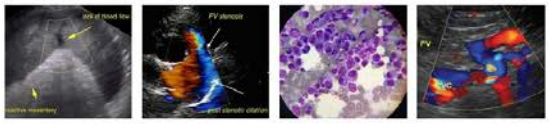
There is no apparent lymphadenopathy noted in these images.

An approximately 1.5-1.6 cm round, walled off, fluid filled structure is noted in the mid cranial abdomen, that appears to potentially be associated with the bowel. It cannot be definitively traced to a tissue of origin in these images. However, one differential is a mildly fluid filled cecum.

PRIMARY FINDINGS

- **Hyperechoic adrenal nodule cranial pole right adrenal gland –** Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.

- **Liver nodules –** Differentials for discrete liver nodules include primarily benign changes such as nodular hyperplasia, fibrosis of an old hematoma, granuloma, myelolipoma, etc.; however, while



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considered less likely, primary hepatic neoplasia, infiltrative round cell neoplasia and metastatic disease can mimic benign lesions and cannot be definitively ruled out.

- Round anechoic fluid filled structure in the mid cranial abdomen, of unknown origin – May represent a mildly fluid filled cecum versus other.

SECONDARY FINDINGS

- Age related kidney changes
- **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.

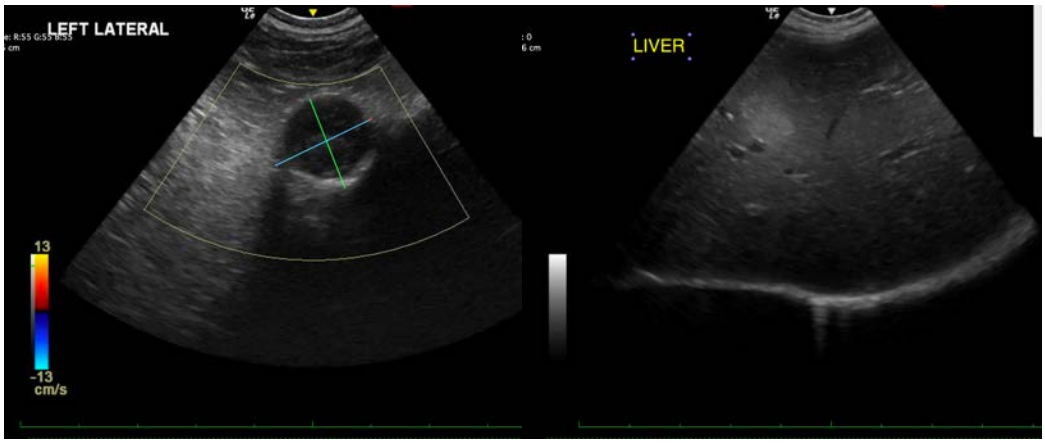
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given the pathology described in this abdomen combined with this patient's reported liver enzyme changes, hyperadrenocorticism could be a differential. If clinical signs of hyperadrenocorticism are present, such as PU/PD, polyphagia, etc., then testing in the form of a low-dose Dexamethasone suppression test is warranted. If clinical signs are not present, then testing is not indicated until if/when clinical signs do develop.

Regardless of clinical signs, 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 ration is recommended. A blood pressure is also recommended.

While the liver nodules trend in appearance towards benign, most consistent with nodular hyperplasia versus other, infiltrative neoplasia cannot be definitively ruled out, especially affecting the mid caudal liver as described above. A fine needle aspirate of that area could be considered if patient's coagulation status is appropriate.

Regarding the unknown fluid filled structure in the mid abdomen, recommendations are either recheck ultrasound in 4-6 weeks to reassess the area and ideally trace it to tissue of origin if possible, and/or an abdominal CT scan could be considered.



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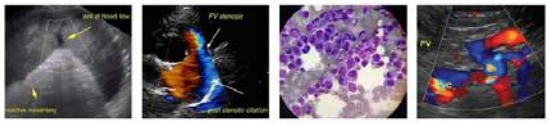

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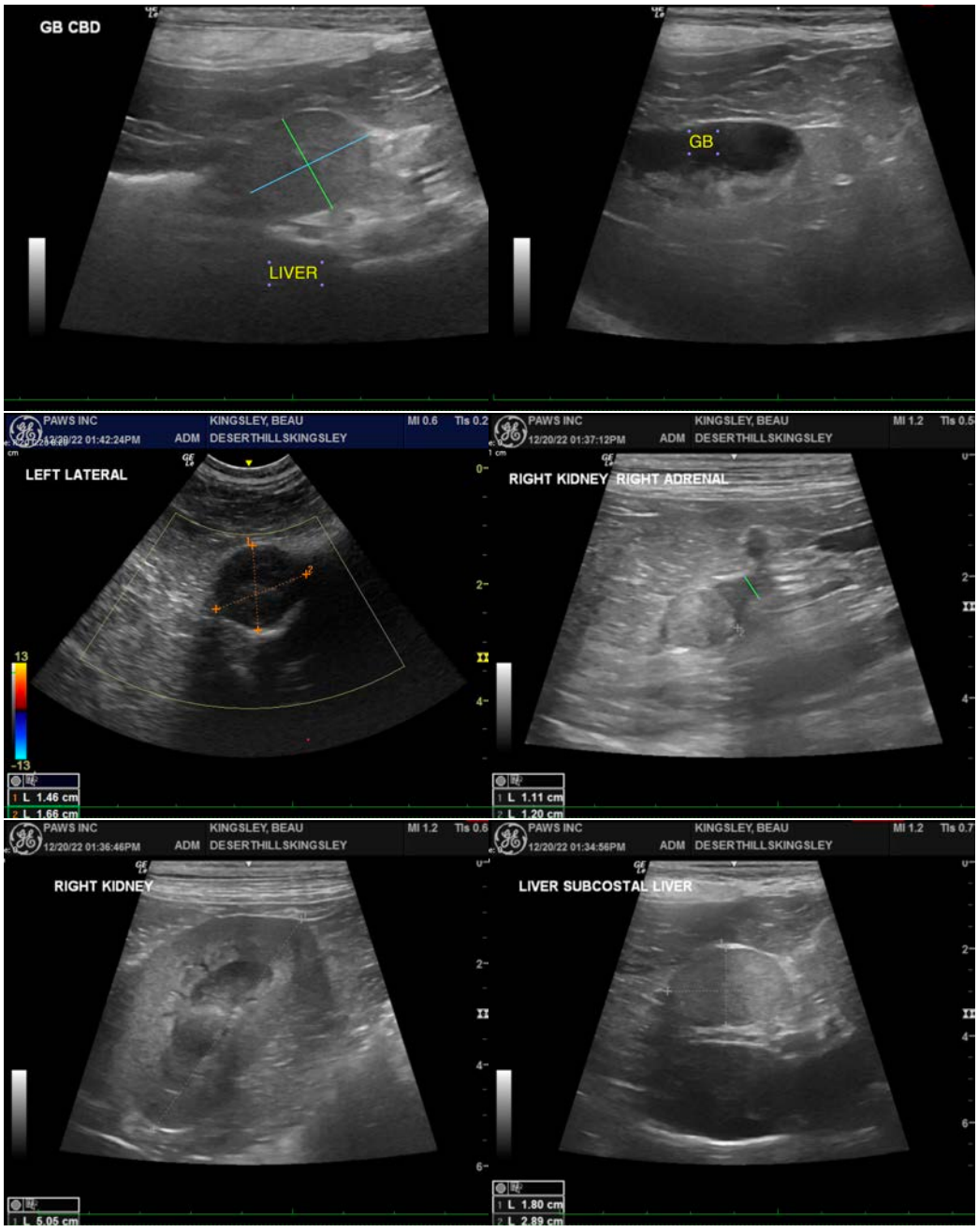

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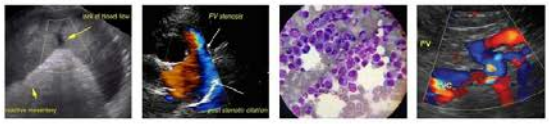

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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