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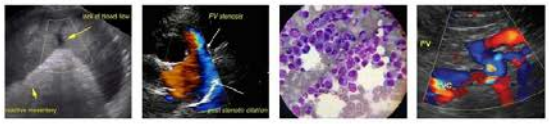


IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Oliver Zenz

SPECIES

Canine

BREED

Labradoodle

SEX

Neutered Male

AGE

10y 8m

WEIGHT

57.4lbs

INTERPRETED BY

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING PERFORMED BY

Loetitia Saint-Jacques, LVT

HOSPITAL NAME

MountainView Animal Hospital

REFERRING VET

Dr. Sarah Kalivoda

INVOICE

10013

DATE

2/3/2023

PRESENTING CLINICAL SIGNS

History: Evaluation of liver, mildly elevated LE~ ~Patient presented for general evaluation and on wellness bloodwork noted midly elevated liver enzymes. Patient responded well to liver protectants and liver enzymes started to increase once liver protectant was discontinued. Recommended ultrasound evaluation of liver. ~ Rx ~Denamarin 425mg, 1 tab SID~

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The prostate is normal in size (0.87 cm) and shape for this neutered male dog. The parenchyma is homogenous, and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney is normal measuring at 6.71 cm with a large cortical cyst in the cranial third of the kidney, measuring 1.31 cm. Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.62 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.47 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

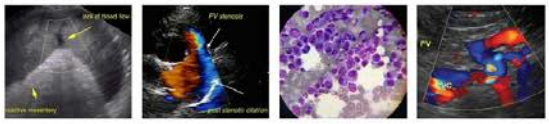
The right adrenal gland is normal in size measuring 0.64 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size and the echotexture is homogenous. The splenic capsule is smooth with no visible irregularities. Rare discrete focal hyperechoic, perivascular parenchymal abnormalities are present. The appearance of these lesions is most consistent with benign splenic myelolipomas. The blood flow through the hilus and splenic parenchyma appears normal.

Liver

The liver is large in size, and normal in echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are occasional parenchymal lesions noted there is a poorly defined mixed echogenicity mass effect in the right caudal liver measuring 2.24 x 3.07 cm. There is also a subtle isoechoic mass effect in the right side of the liver measuring 2.62 x 1.92 cm and a mixed



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echogenicity lesion measuring 1.7 x 2.0 cm. Additionally, there is a very small hyperechoic nodule measuring 0.73 cm.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (0.42 cm) and the jejunum measured as normal (0.36 cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any free fluid. There are visible mesenteric lymph nodes, sub lumbar lymph node is visualized at 0.49 cm and a mesenteric lymph node at 0.41 cm. The omentum is of normal uniform echogenicity.

PRIMARY FINDINGS

- Cystic structure visualized in the left kidney findings are most consistent with benign renal cyst.
- Hyperechoic regions in the spleen. Findings are most consistent with benign myelolipomas. Recommend continued monitoring.
- Heterogenous liver with numerous somewhat ill-defined mixed echogenicity to hyperechoic nodules. The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The lesions observed are relatively subtle and do not seem to disrupt the hepatic architecture. Recommend continued monitoring +/– fine needle aspirate.
- Moderate gallbladder debris. The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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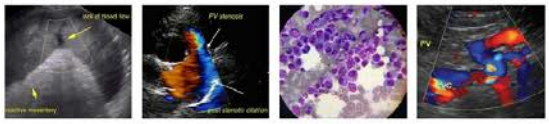

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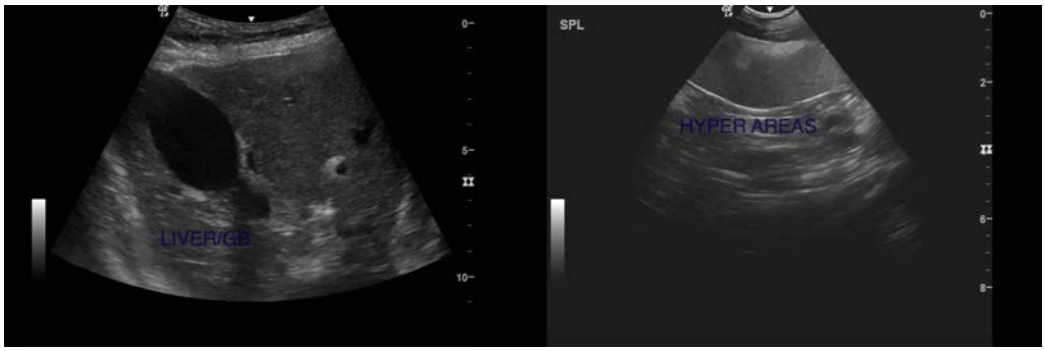
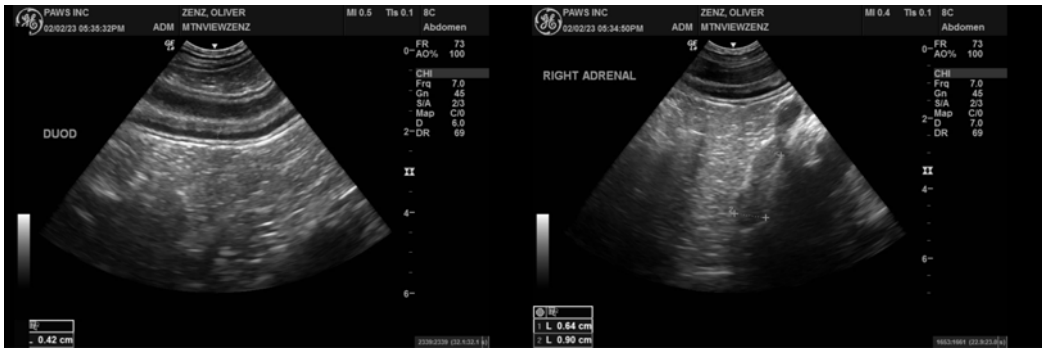
There are numerous ill-defined lesions visualized within the hepatic parenchyma. All of these lesions are very subtle and do not appear to distort the normal hepatic architecture. Their appearance trends towards benign lesions but continued monitoring with ultrasound is warranted. Additionally, you could consider fine needle aspirate of liver sampling of all the lesions is likely impossible but of somewhat representative sample could be obtained. If liver enzymes are persistently elevated or rise, then these are steps to consider for further evaluation.

- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...
- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history
- If not already done, consider pre and post prandial bile acids to evaluate liver function
- If the ALP is significantly elevated relative to the ALT and symptoms consistent with cushings are present, consider adrenal function testing (ACTH stim)
- Consider Fine needle aspirate if round cell neoplasia is on your differentia list (25 g needle, normal coags)
- If no response to supportive care (denamarin, fluids, antibiotics, +/- ursodiol etc...) Consider liver biopsy with samples obtained for histopathology, culture, and copper levels.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.





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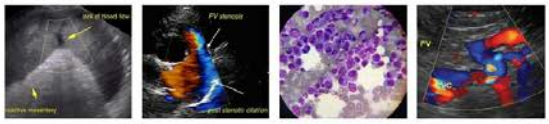

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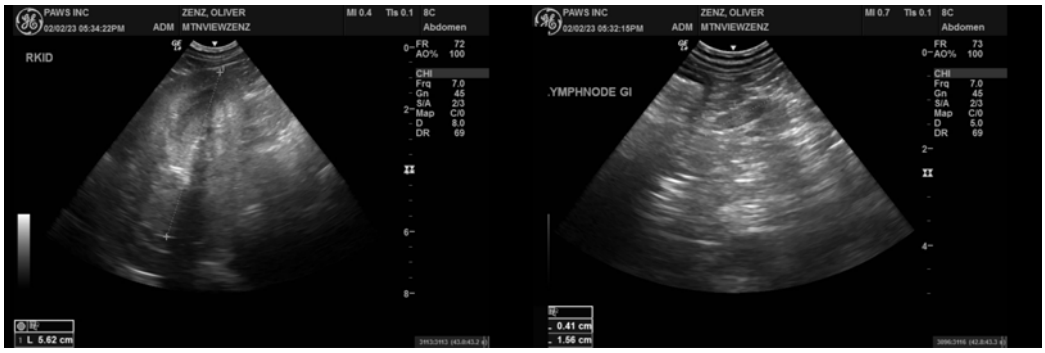

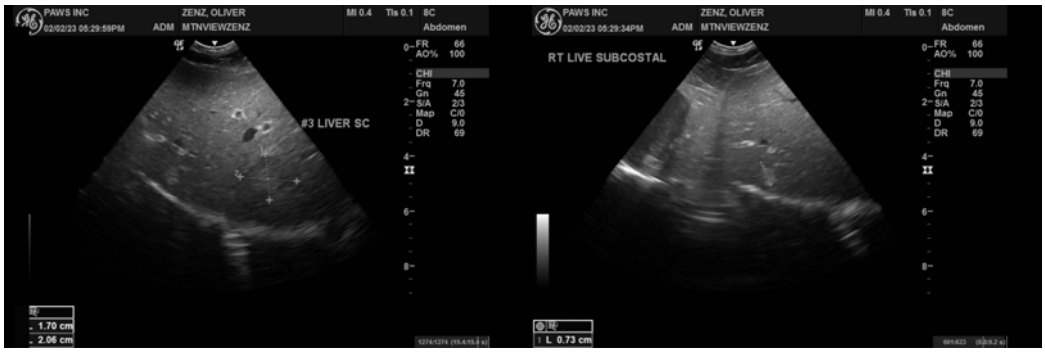

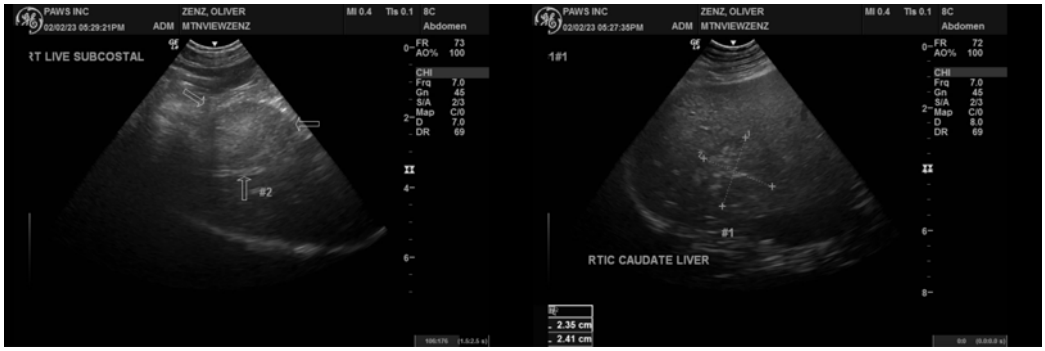

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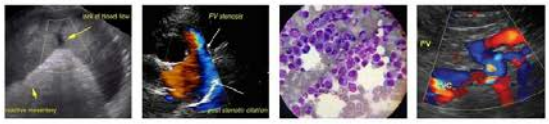

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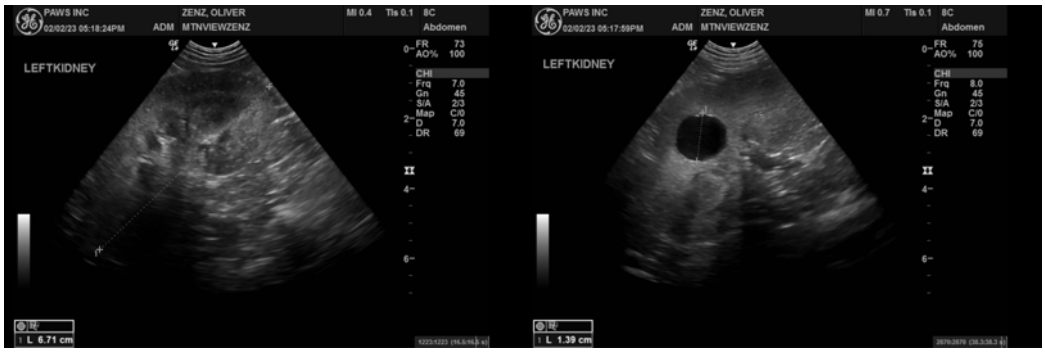

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

kathleen.sennello@sonopath.com