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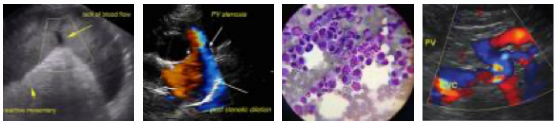

ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT

Cooper Miller

SPECIES

Canine

BREED

Dachshund

SEX

Neutered Male

AGE

4 years

WEIGHT

15.4 lbs

INTERPRETED BY

Andrea Nicastro, DVM, Diplomate ACVIM (*Small Animal Internal Medicine*)

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

Banfield PH Salem, OR

REFERRING VET

Dr. Weller

DATE

6.29.22

INVOICE

11179

PRESENTING CLINICAL SIGNS

History: Patient has history of elevated liver values and abnormal bile acids. Patient is otherwise asymptomatic. Primary Question/Differential to Be Answered in This Exam Evaluate liver for pre-anesthetic assessment for dental cleaning.
Abnormal PE/Chem/CBC/UA Results: 10/21/21 ALT was 133; 11/11/21 ALT was 139 11/17/21 Bile acids / pre- 6.5 post- 28.9

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** wall is normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. No masses, inflammatory changes or calculi are observed. The region of the trigone and the proximal urethra, visible to a depth of 2-3 cm, are normal.

The prostate is normal in size (0.89 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The **left kidney** is normal size (4.52 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The **right kidney** is normal size (4.60 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The **left adrenal gland** is normal size (0.61 cm at cranial pole) (0.42 cm at caudal pole) (1.88 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The **right adrenal gland** is normal size (1.01 cm at cranial pole) (0.34 cm at caudal pole) (1.81 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

Spleen

The **spleen** is normal in size (1.35 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

Liver

The **liver** is subjectively normal in size with normal contours and structure. There is appropriate echogenicity and echotexture. No overt structural evidence of inflammatory, infiltrative, or regenerative pathology is evident. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed.

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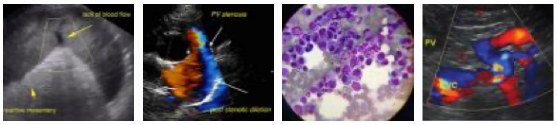

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The **gall bladder** lumen is moderately distended. The wall is thin and smooth. A small to moderate amount of aggregated, echogenic gravity dependent debris/sludge is observed within the lumen. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The **stomach and intestine** are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas

The region of the **pancreas** is isoechoic relative to surrounding omental fat. No obvious parenchymal abnormalities are observed. There is no evidence of regional inflammation or effusion.

Free Abdomen

The **peritoneal cavity** is normal. There is no evidence of inflammation or effusion. The abdominal **lymph nodes** are normal/not visible.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Unremarkable abdomen. An obvious cause for the mildly elevated liver values is not identified in this study. Considerations include reactive hepatopathy, bacterial cholangiohepatitis, chronic active hepatitis, hepatotoxicosis (i.e., copper), Leptospirosis (less likely), congenital disease (i.e., microvascular dysplasia), other hepatopathy. The portal vein with normal branching is thought to be identified in one video clip. However, additional imaging (sonographic or contrast CT images) would be necessary confirm this finding and to rule out a portosystemic shunt. However, given the minimal elevation in bile acids, a portosystemic shunt is considered less likely.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

To get a definitive diagnosis, hepatic tissue sampling (i.e., fine-needle aspirate or surgical biopsy) would be necessary. Surgical biopsies are preferred in that they are more likely to be represent of global organ pathology. A contrast CT can also be considered prior to surgery to assess for a congenital portosystemic shunt. Although the likelihood of this abnormality is considered relatively low. Cytologic evaluation of the liver can be useful in assessing for infiltrative neoplasia and vacuolar hepatopathy, both of which are considered less likely in a patient of this age, with a sonographically normal-appearing liver. If surgical biopsies are pursued, aerobic and anaerobic bile cultures and acquisition of additional hepatic tissue samples for potential copper quantitation are recommended.

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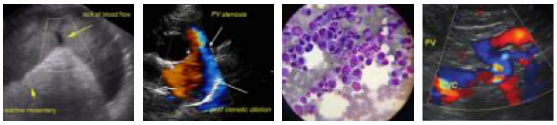

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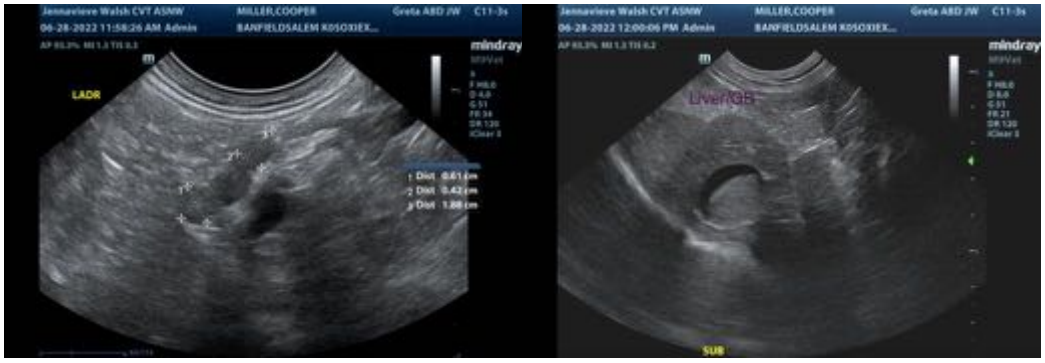

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Andrea Nicastro, DVM, Diplomate DACVIM (Small Animal Internal Medicine)
info@SonoPath.com