

PATIENT

Dash McCormick

SPECIES

Canine

BREED

Labradoodle

SEX

Neutered Male

AGE

10 yrs 10 mos

WEIGHT

19.9

INTERPRETED BY

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

IMAGING PERFORMED BY

Ruth Loomis

HOSPITAL NAME

Brookwood Animal
Clinic, LLC

REFERRING VET

Ruth Loomis

INVOICE

10113

DATE

3/14/2023

PRESENTING CLINICAL SIGNS

P has hx of mildly increasing liver enzymes Grade 3/6 murmu
Abnormal PE/Chem/CBC/UA Results: Alt was 169 and 4 w weeks later increased to 269 Alkp WNL
but is trending up GGT 9 Tbili and BA WnL

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 (0.57 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 has a normal shape and size (4.59 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 measuring at 4.78 cm, with a small cortical cyst measuring 0.33 cm in the caudal pole. 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 0.73 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 0.63 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

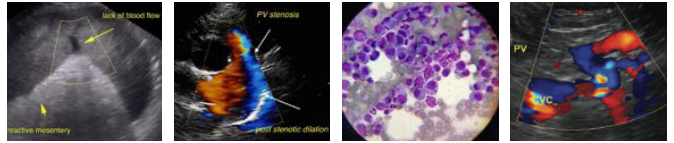
The spleen is irregular and mottled, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There are numerous ill-defined hypoechoic patchy nodules, one such lesion is visualized measuring 0.71 cm.

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. No focal nodules or cystic lesions are observed.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and primarily anechoic. The cystic and common bile ducts are normal/not visible.

Gastrointestinal



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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.

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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 (0.36 cm), and the jejunum measured as normal (0.33 cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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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.

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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.

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Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

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ULTRASONOGRAPHIC FINDINGS

- Mottled irregular/nodular spleen. The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Large heterogenous liver. 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.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No focal lesions are visualized associated with the liver or the gallbladder to explain the elevation of the ALT reported. The parenchyma is irregular and somewhat heterogenous, this is a non-specific finding but is likely most consistent primary hepatopathy. Consider the following:

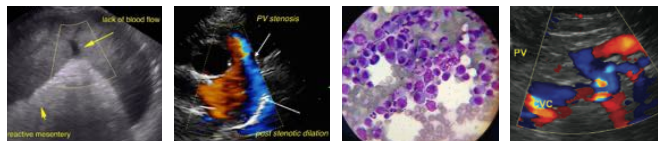
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- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...
- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history.
- If not already done, consider pre and post prandial bile acids to evaluate liver function.
- Consider Fine needle aspirate if round cell neoplasia is on your differential 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.



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Additionally, the spleen is significantly mottled with ill-defined hypoechoic nodules, this could represent a benign or neoplastic process. Consider a fine needle aspirate of the spleen as well as the liver.

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It is very possible that a biopsy of the liver may be necessary to diagnose many types of inflammatory or infectious liver disease. If liver function is abnormal and there is no evidence of neoplasia on any of the cytology obtained consider a biopsy of the liver for histopathology, copper levels, +/- aerobic and anaerobic cultures.

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

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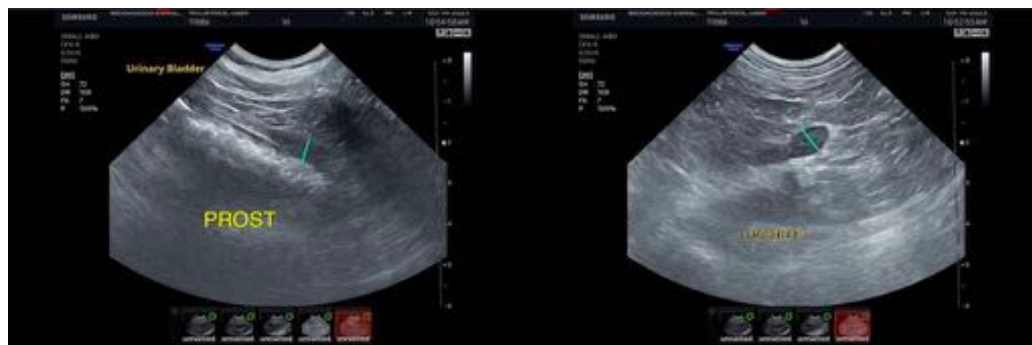


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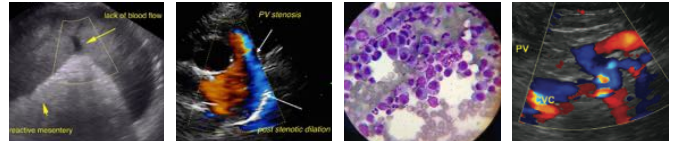


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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

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