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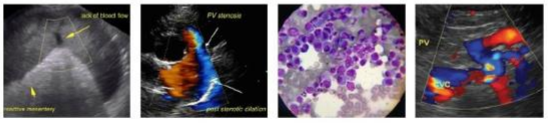


IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Massimo Viola

SPECIES

Canine

BREED

Havanese

SEX

Neutered Male

AGE

12 Years

WEIGHT

15 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Loetitia Saint-Jacques, RVT

HOSPITAL NAME

Mtn. View AH

REFERRING VET

Dr. Sarah Kalivoda

INVOICE

20976

DATE

2/3/23

PRESENTING CLINICAL SIGNS

History: 1. chronic IBD (dx w/ GI biopsies) -low albumin (2.3), elevated globulin (4.2) chronic ALT elevation (mild - 172) progressive GGT elevation (35) recent biliribun elevation (total = 0.5) total t4: 1 (1-4) ~chronic IBD - currently no clinical signs chronic epilepsy (suspected, workup w/ neuro was not done, good response to zonisamide as a sole anticonvulsant) ~ mEDS: 1. zonismide: 50mg BID 2. cyclosporine: 25mg SID

Abnormal PE/Chem/CBC/UA Results: LABS attached

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 2.0 cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The prostate is normal in size (0.67 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 (4.2 cm). Overall echogenicity is slightly hyperechoic with poor 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 (3.57 cm). Overall echogenicity is slightly hyperechoic with poor 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 0.5 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.

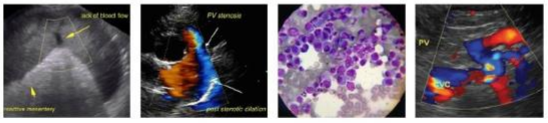
The right adrenal gland is normal in size measuring 0.53 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

Liver

The liver is subjectively (normal, large, small, normal/large, normal/small) in size, and 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



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numerous poorly defined, hypoechoic nodules distributed throughout the hepatic parenchyma. A more prominent nodule is visualized, measuring 0.63 cm and 0.67 cm.

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

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7 cm 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 (0.44 cm) and the jejunum measured as normal (0.25 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 prominent and mottled compared to the surrounding isoechoic 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 evidence of effusion or lymphadenopathy. 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. A mesenteric lymph node is visualized and is within normal limits, measuring 0.33 cm.

ULTRASONOGRAPHIC FINDINGS

- Large heterogenous nodular 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. The nodules observed trend toward a more benign process but underlying neoplasia cannot be ruled out.

- Prominent mottled pancreas- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

- Decreased corticomedullary distinction in both kidneys. The bilateral renal findings are consistent with age-related change.

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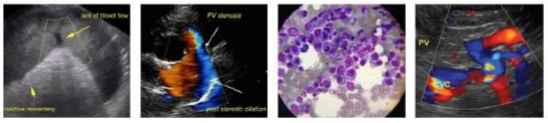

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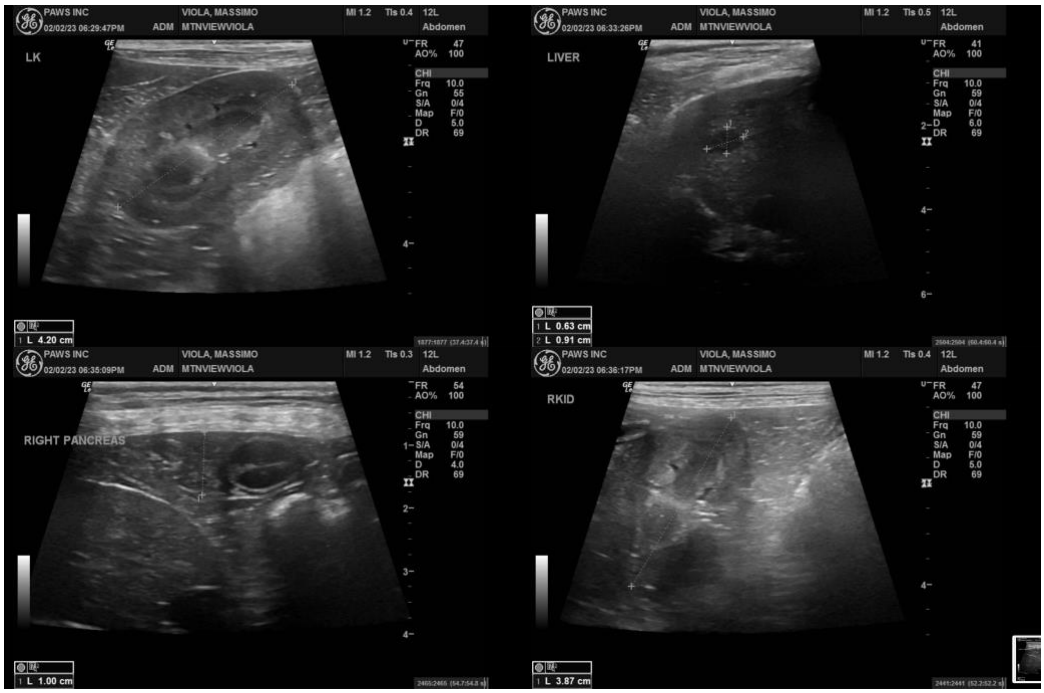
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Surprisingly, the small intestine appears relatively normal on todays exam. There is no overt thickening, mucosal speckling, etc.

The liver does appear large and heterogenous with numerous indistinct hypoechoic nodules throughout the parenchyma. The appearance of these nodules trends toward the more benign etiology, but underlying neoplasia cannot be ruled out as a possibility. Consider the possibility that the low albumin is being contributed to by liver dysfunction and recommend a liver function test to further evaluate for this. These are my recommendations for further evaluation of an elevation in ALT.

- 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 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.



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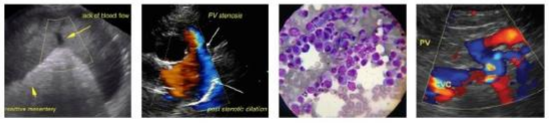

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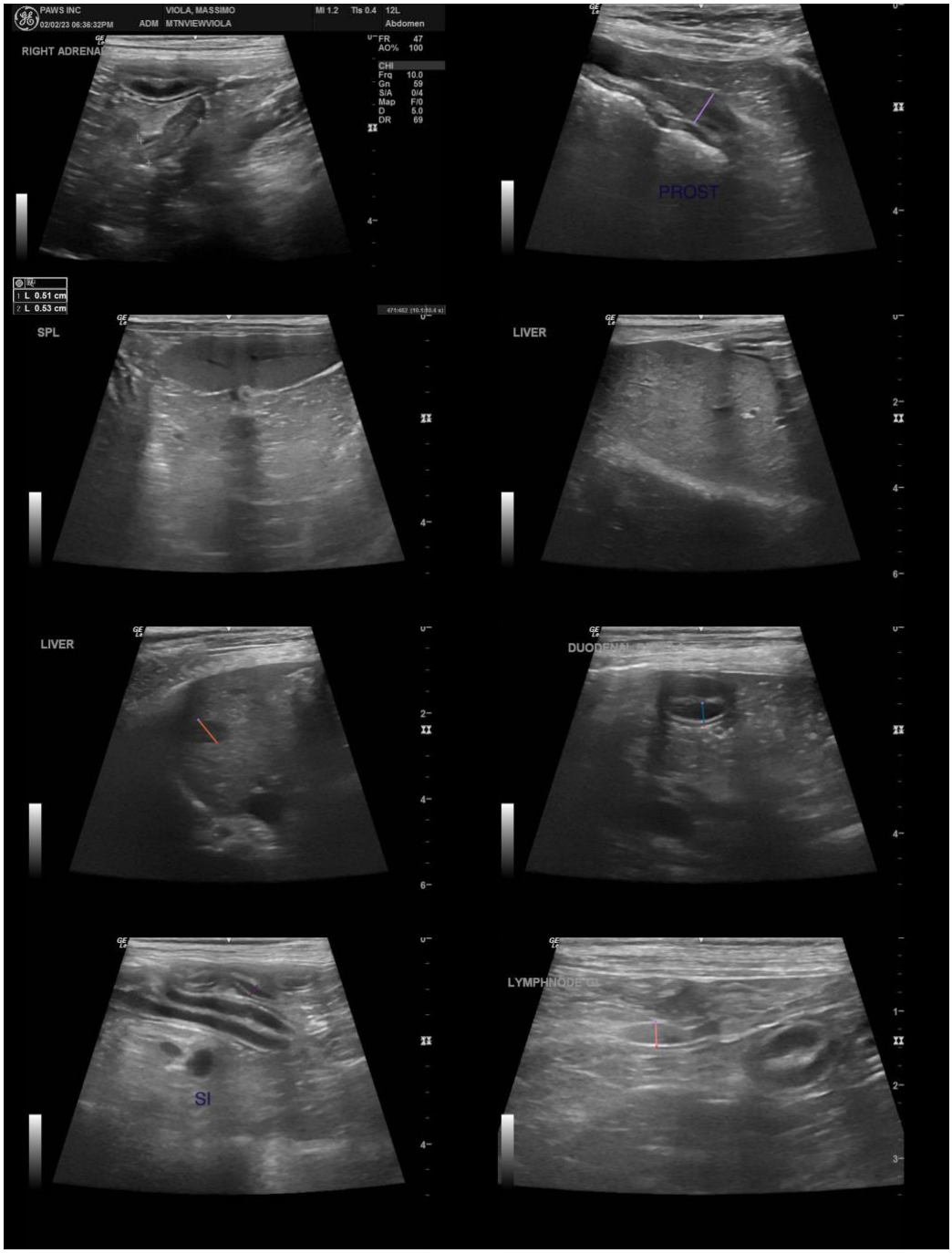

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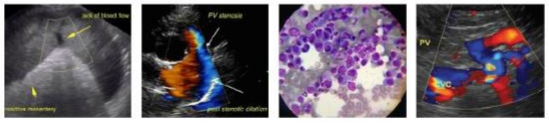

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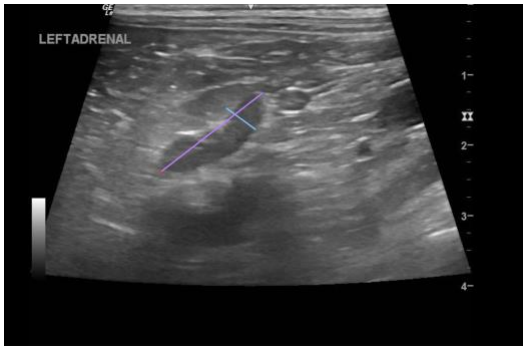

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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