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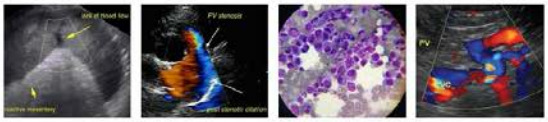

IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Coco Morgan

SPECIES

Canine

BREED

French Bulldog

SEX

Intact Female

AGE

3 Years 9 Months

WEIGHT

28.8 Pounds

INTERPRETED BY

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

IMAGING BY

Loetitia Saint-Jacques, LVT

HOSPITAL NAME

MountainView AH

REFERRING VET

Dr. Sarah Kalivoda

INVOICE

38628

DATE

6/10/22

PRESENTING CLINICAL SIGNS

Chief Concern / Provisional Diagnosis: Elevated ALT- patient has a history of liver disease tense abdomen-Relevant Medical History and Physical Exam findings: Patient was seen back in 2019 for elevations in liver values and had and had an ultrasound which showed the appearance of the liver is consistent with a severe, chronic hepatopathy with cirrhosis. She was placed on Clavamox, Ursodiol and Denamarin and a liver diet. No liver biopsies or advanced imaging performed at that time. Liver values returned to normal until recently she developed anorexia. Blood work showed an elevated ALT, and was placed back on Ursodiol. Her ALT continues to increase from 223 to 553. Recent Diagnostics: Relevant Labratory Results / Abnormalities: ALT increase from 223 to 533 Current medications (include full name, dosage and frequency): Denamarin, Ursodiol 1/2 of 250 mg daily, liver diet Relevant Radiograph Findings(email radiographs if available): None

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 left kidney has a normal shape and size (4.2 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of 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 (4.66 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of 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 0.72 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 0.58 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 small in size and rounded. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the biliary tract appear normal. Vasculature appears normal to slightly reduced. No focal nodules or cystic lesions are observed.

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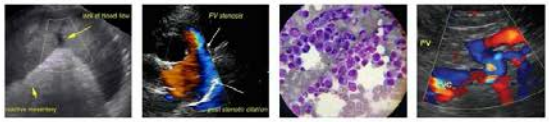

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The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm 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 (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) 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 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.

Other

A brief view of the heart was submitted. No significant pericardial effusion was seen.

The uterine body and the left and right ovaries are visualized and appear within normal limits. The left ovary measures 1.24 cm in length. The right ovary measures 1.25 cm in length.

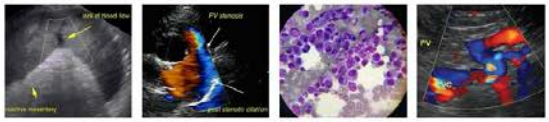
ULTRASONOGRAPHIC FINDINGS

- Small, rounded heterogeneous liver with subjectively reduced portal markings – This liver could be consistent with a cirrhotic liver, portosystemic shunt, or other congenital anomaly.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is small and very irregular with a heterogeneous parenchyma and subjectively reduced portal markings. While I cannot definitively identify a portosystemic shunt, this would be a concern in a patient of this age with this type of liver disease. Alternately, this could be a result of previous liver injury/infection, toxic exposure, severe microvascular dysplasia, or some other congenital anomaly.

If the patient is truly in liver failure with a cirrhotic liver, routine bloodwork may be an inaccurate



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way of monitoring, as some dogs will have progressive lowering of their liver enzymes as their liver tissue is reduced. This would be better assessed with bile acid evaluation and evaluation of the functional markers of liver disease such as glucose, albumin, BUN, etc. A definitive diagnosis will likely require a contrast CT scan and liver biopsy. Medically consider:

- Pre- and post-prandial bile acids
- Evaluation of serum biochemical markers
- If bile acids are significantly abnormal and the patient is not feeling well, it may be helpful to treat symptomatically for hepatic encephalopathy (low protein diet, GI protectants, anti-nausea medication +/- lactulose). If this patient is asymptomatic, then medical therapy is less likely to be of benefit.

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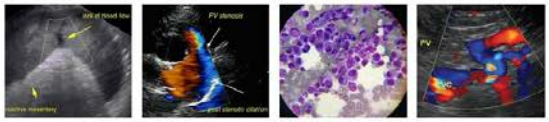

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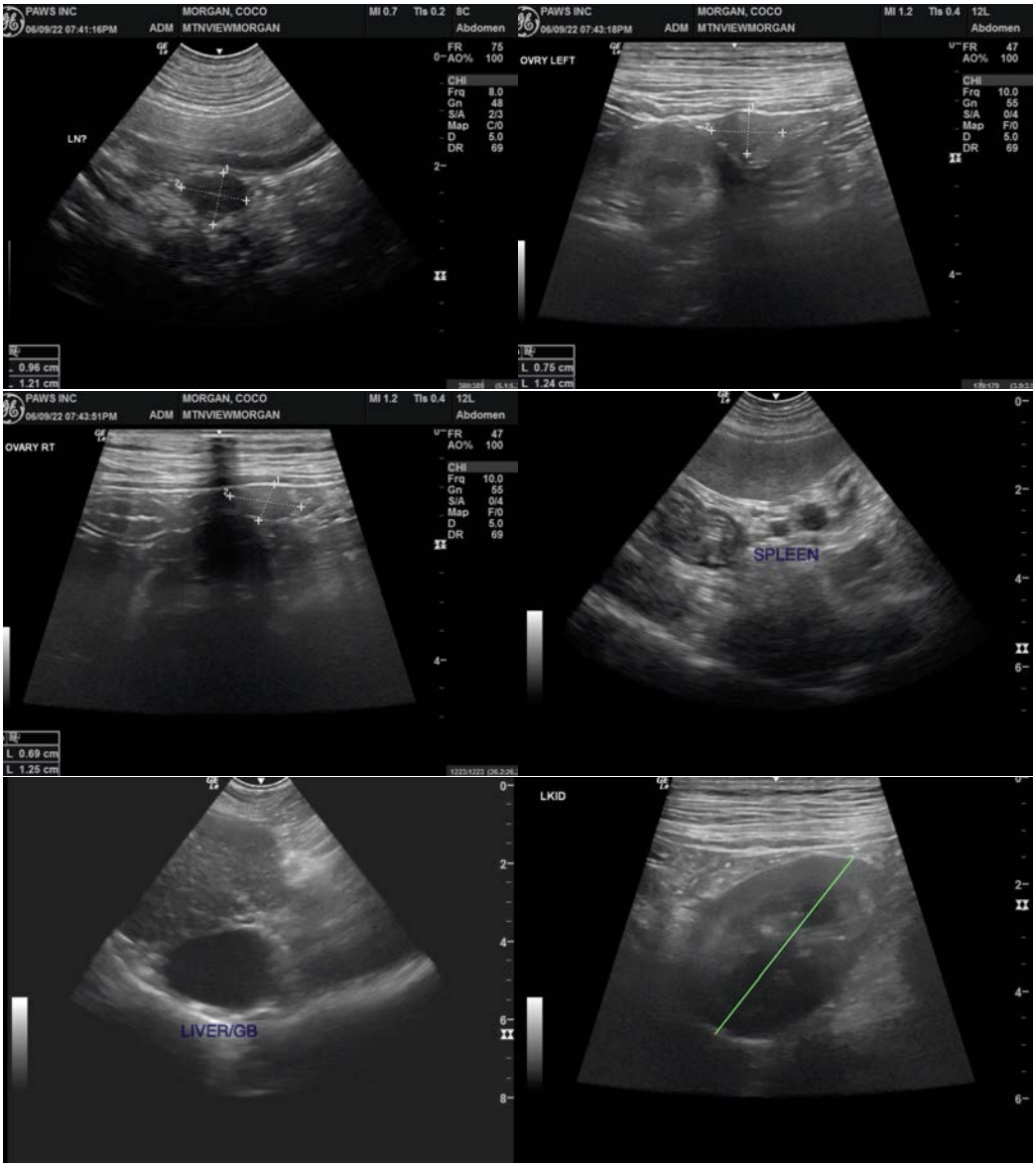

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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