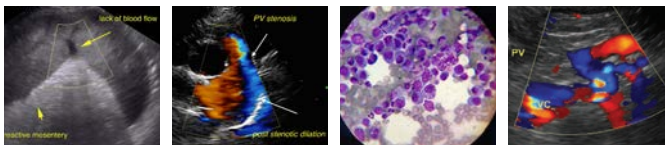
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



SonoPath.com™
1-800-838-4268 info@sonopath.com

PATIENT

Maisy Morris

SPECIES

Canine

BREED

Flat-Coated Retriever

SEX

Spayed Female

AGE

14 Years

WEIGHT

47.2 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Aaron Lucas

HOSPITAL NAME

Taylorsville Vet Clinic

REFERRING VET

Dr. Aaron Lucas

INVOICE

46388

DATE

4/4/23

PRESENTING CLINICAL SIGNS

Patient presented today with a 2 week history of diarrhea progressing to a 7 day history of lethargy and a 5 day history of inappetence and PU/PD. Physical exam findings reveal hepatomegaly with a palpable fluid wave. TPR were otherwise unremarkable.

Abnormal PE/Chem/CBC/UA Results: Mild leukocytosis characterized by mature neutrophilia (Neutrophil count 19.67 K/uL) Elevated ALT (805 U/L), ALP (1454 U/L) and GGT (19U/L) Mild hyponatremia and hypochloremia noted Hematuria, proteinuria and rod bacturia also noted Abdominal fluid sampled consistent with modified transudate.

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 (5.5 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 (7.16 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 large and abnormal in shape measuring 1.07 cm at the cranial pole, 2.22 cm at the caudal pole, and 3.78 cm in length. It is observed in its normal position cranial to the left renal artery. The appearance is abnormal in that the caudal pole is irregular and large, most consistent with a mass effect. There is no evidence of vascular invasion visualized.

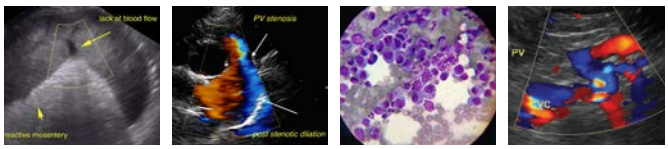
The right adrenal gland is normal in size measuring 0.71 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size. The spleen echotexture is heterogenous and mottled, the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. The head of the spleen appears somewhat prominent and rounded, but no overt mass effect is visualized.

Liver

The liver is severely enlarged and irregular with rounded lobular margins and hyperechoic, heterogeneous parenchyma. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed. There are numerous ill-defined large hyperechoic mass effects visualized within the hepatic parenchym. Examples include a lesion measuring 3.5 cm x 1.78 cm, and one that measures 3.03 cm in diameter.



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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 mild and 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. Jejunum wall measures 0.30 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 hypoechoic as 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

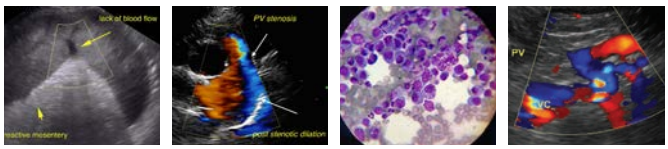
There is a moderate amount of echogenic free fluid. There are some prominent cranial abdominal lymph nodes. The omentum is hyperechoic in the cranial abdomen.

ULTRASONOGRAPHIC FINDINGS

- Enlarged left adrenal – most consistent with a left adrenal mass. Adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Mottled irregular 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.
- Prominent, hypoechoic pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Extremely enlarged, irregular, lobulated, heterogeneous and hyperechoic 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.
- Moderate amount of mildly echogenic free fluid

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is very abnormal in this individual. It is very enlarged with rounded lobulated margins and a heterogeneous, almost reticulated parenchymal pattern in the liver with occasional ill-defined



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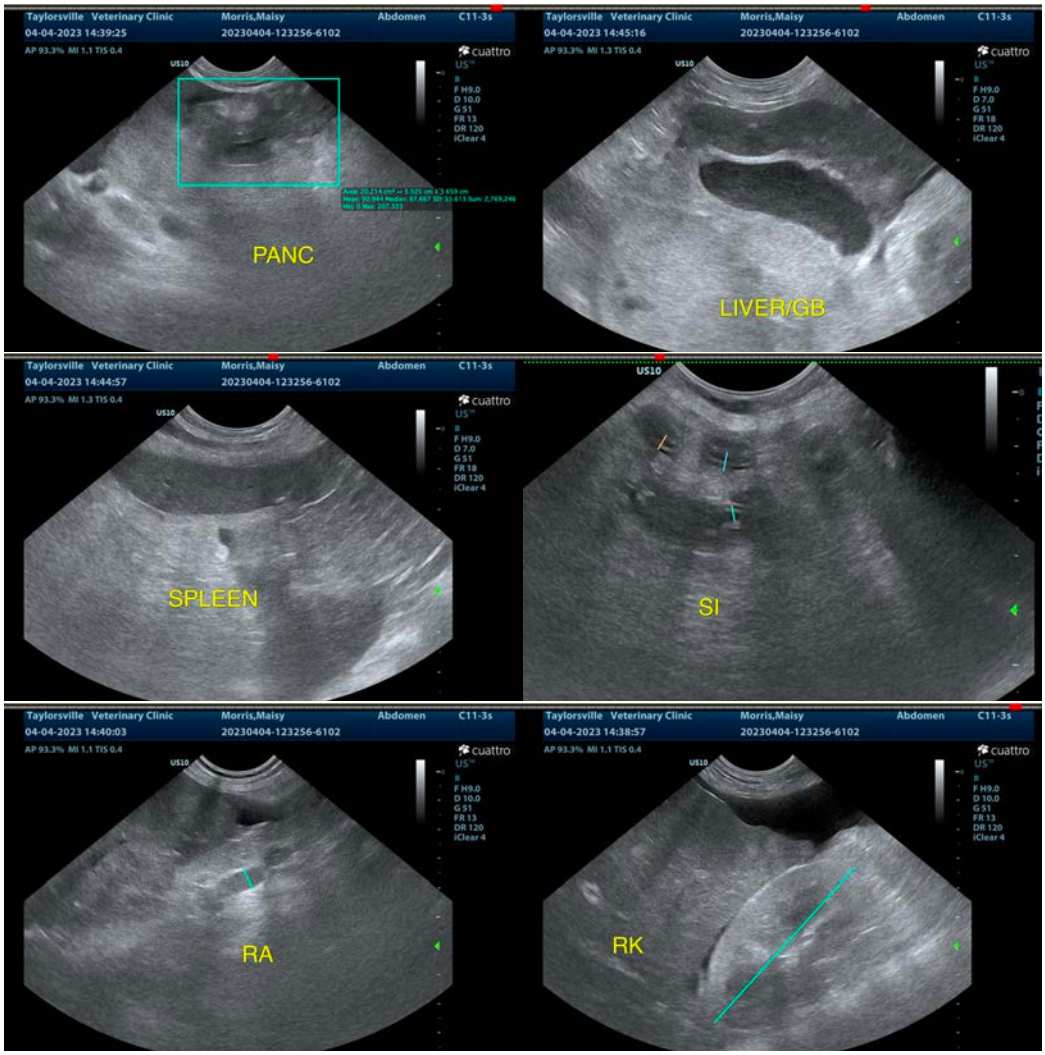
hyperechoic mass effects. Recommend a fine needle aspirate of the liver (provided coagulation parameters are normal). Additionally, consider 3-view thoracic radiographs. If a cytologic diagnosis cannot be obtained, a liver biopsy may need to be considered.

The left adrenal gland is enlarged and most consistent with an adrenal mass lesion. These lesions can be benign or neoplastic and can be secretory or non-active. At this time, I suspect the majority of the symptoms exhibited are secondary to the hepatic changes. At this time, I would recommend a blood pressure evaluation, screening for a possible pheochromocytoma, and if additional steps are taken in the future to evaluate this, then consider a contrast CT scan, looking for any evidence of vascular invasion. If signs of Cushing's are present, consider adrenal function testing (this would only be useful when the patient is not systemically ill). There is risk for vascular invasion in this individual, so continued monitoring of the adrenal with ultrasound could be considered.

Consider a liver function test. Differentials for hepatomegaly would include infiltrative disease (seems most likely) and passive congestion (right-sided heart disease, pericardial effusion, thoracic mass effect, etc.). If the fluid sample obtained was not submitted for cytologic evaluation, consider doing so. Also consider symptomatic treatment for pancreatitis.



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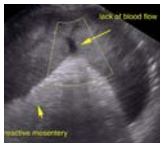
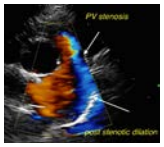
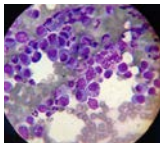
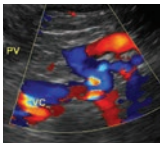

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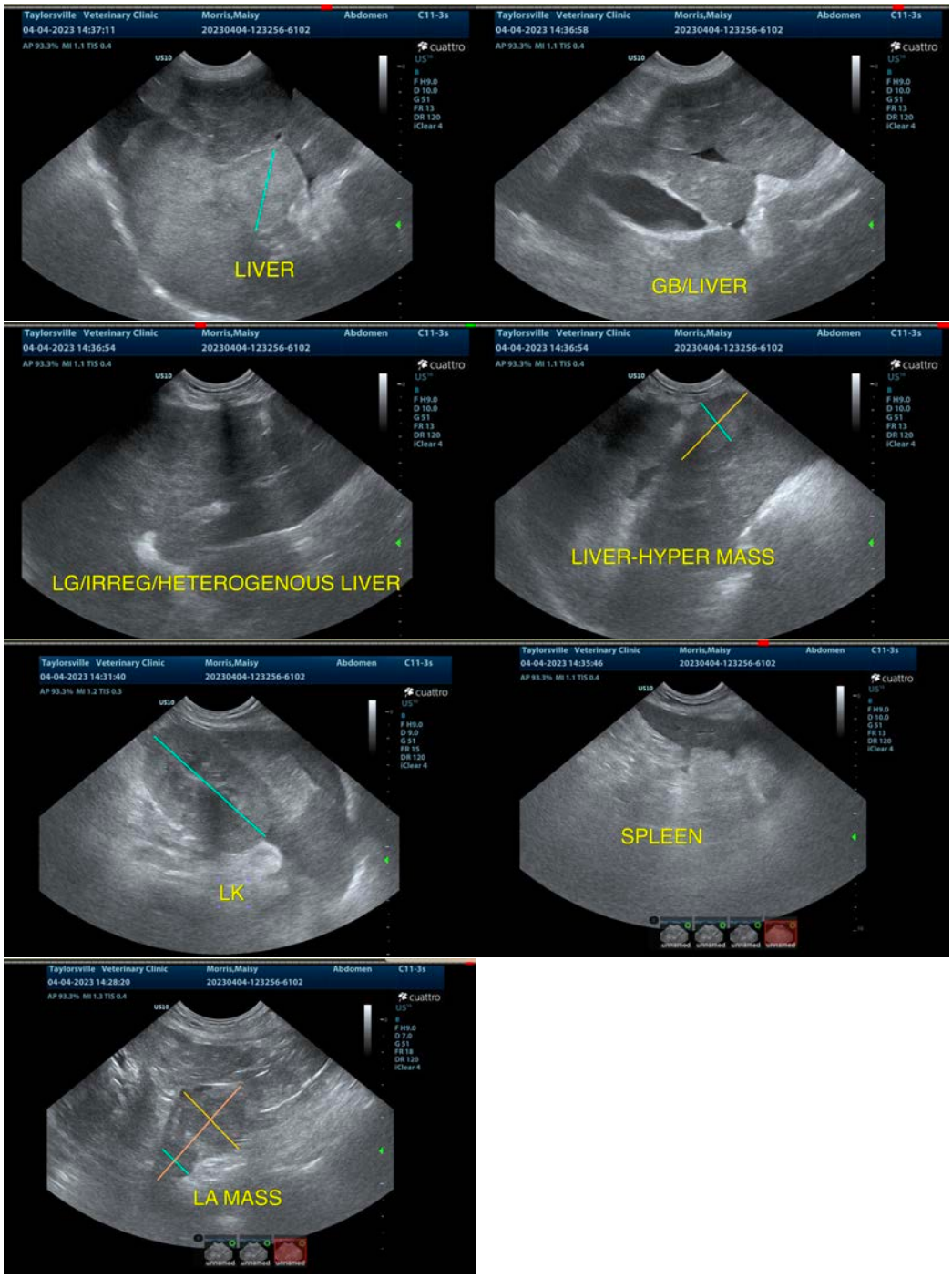

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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