SonoPath
Clinical Sonography & Telecytology
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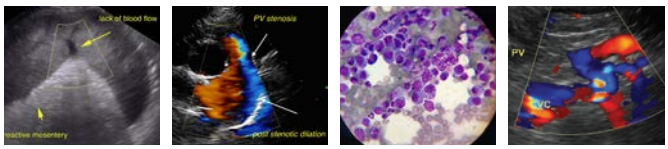

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1-800-838-4268 info@sonopath.com

PATIENT
Harlie Fleming

SPECIES
Canine

BREED
Miniature Pinscher

SEX
Neutered Male

AGE
13 Years

WEIGHT
12.8 Pounds

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

IMAGING PERFORMED BY
Marti Williams

HOSPITAL NAME
Limestone Vet Hospital

REFERRING VET
Dr. Laurita Halbert

INVOICE
44440

DATE
1/24/23

PRESENTING CLINICAL SIGNS

Since January 1, 2023 anorexic (eats a few treats on some days but that's all), vomiting, diarrhea on and off, weight loss. Exam Dehydration Treated Yesterday with SQ fluids and Cerenia (owner declined all else at the time)

Abnormal PE/Chem/CBC/UA Results: Alb 2.9, Glob 3.8, AST 241, ALT 763, SAP 6655, GGT 83, T bili 0.6, Calc 8.4 (corrects to 9.0) Amylase 1673, PPSL 3160m Neuts 14350, Monos 1925, T4 0.7, FT4 pending, USG 1.031, Protein 2+, 2+ Blood, WBC 4-10.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. Much of the urinary bladder wall appears relatively normal in thickness with a normal smooth mucosal surface, but there are two regions that appear thickened and irregular. One of these areas is in the apical portion of the urinary bladder, measuring 0.71 cm x 0.87 cm. A second area is more ventral apical, measuring 0.82 cm x 0.70 cm. The area of the trigone, ureteral papillae and proximal urethra appear within normal limits with no evidence of mass lesions, calculi, etc.

The prostate is normal in size (0.70 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 (4.62 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 (4.24 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 0.47 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.

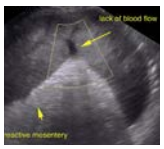
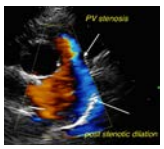
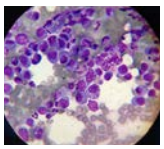
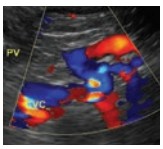
The region of the right adrenal (between right cranial kidney and vena cava) is unremarkable, but the adrenal is not distinctly visualized. No evidence of a mass effect is visualized.

Spleen

The spleen is prominent and slightly hypoechoic. The 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 large and irregular. The parenchyma is severely heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are too numerous to count ill-defined hypo- and hyperechoic nodules throughout the hepatic parenchyma. These appear somewhat expansile and deviate the margins of the liver. Some of the

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margins of the liver are so rounded and irregular that they create a mass effect that is difficult to discern from just an irregular "bulging" area versus a focal mass lesion. On the left side of the liver, there is a suspicious mass lesion measuring 3.8 cm x 3.52 cm. Examples of hypo- and mixed echogenic nodules measure at 2.1, 1.25, and 0.78 cm. Larger mixed echogenic lesions measure 2.58 cm in diameter are also visualized.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. 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 mildly increased. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Duodenum wall measures 0.42 cm. Jejunum wall measures 0.36 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

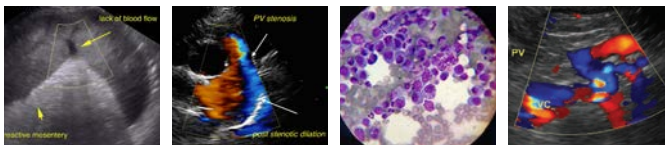
The pancreas is large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with moderate pancreatitis.

Free Abdomen

There is a moderate amount of echogenic free fluid. There are occasional prominent mesenteric lymph nodes, particularly in the cranial abdomen, one such lymph node is visualized measuring 0.57 cm in diameter. The omentum is diffusely hyperechoic.

ULTRASONOGRAPHIC FINDINGS

- Two focal areas of thickening of the urinary bladder wall – These could be consistent with focal cystitis or early mass lesions. Recommend urinalysis and culture.
- Mildly hypoechoic spleen – This could represent normal anatomic variation or infiltrative disease. Consider a fine needle aspirate.
- Prominent, hypoechoic pancreas surrounded by hyperechoic mesentery – The pancreatic changes are most consistent with mild pancreatitis/pancreatic inflammation. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.
- Large, irregular, nodular liver with numerous mass effect – 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 numerous masses and nodules are concerning for a possible underlying neoplastic process,



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although benign lesions are also possible.

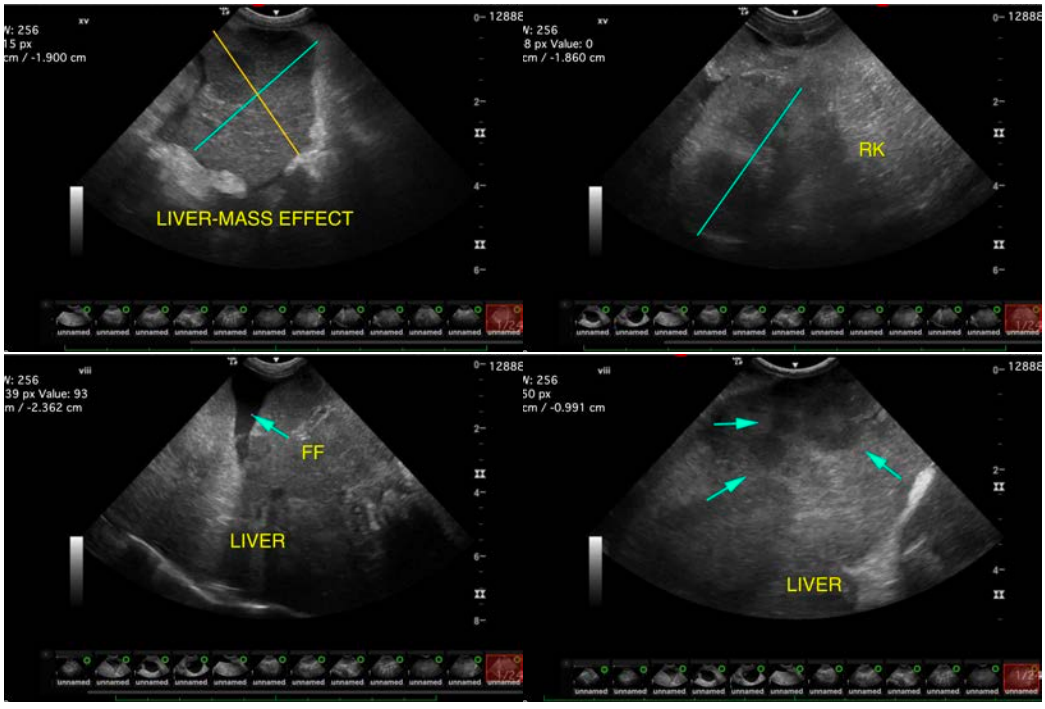
- Moderate gallbladder debris – The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.
- Mildly thickened small intestine – The mild small intestinal wall changes may be a normal variant in this patient or could be consistent with an inflammatory process (e.g., inflammatory bowel disease). This could be secondary to edema from the free abdominal fluid.
- Moderate echogenic free abdominal fluid – recommend fluid analysis and cytology.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is very large and abnormal with a lobulated-like appearance and numerous bulging intraparenchymal nodules and masses. Many of these lesions are likely benign, but there is concern that some of these could represent neoplastic process as well, and given the free abdominal fluid, there is concern that this could be either a neoplastic effusion or secondary to portal hypertension. Recommend a fine needle aspirate of the liver and 3-view thoracic radiographs. A contrast CT scan may be necessary to provide a more global view and to try and determine if surgical options exist. Consider evaluation of the heart for any evidence of right-sided heart enlargement, pericardial effusion, etc.

There are two focal thickened irregular areas in the urinary bladder wall. Recommend a urinalysis and culture and potentially a traumatic catheterization, as these could represent early neoplastic lesions or more focal inflammatory/infectious lesions (cystitis).

The spleen appears somewhat hypoechoic and "plump", and the small bowel appears slightly thickened. Some of these changes could be artifactual secondary to the free fluid and the hyperechoic omentum in the abdomen, although a fine needle aspirate of the spleen could be considered.



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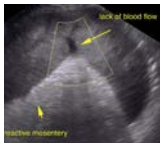
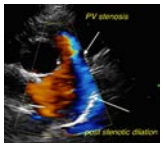
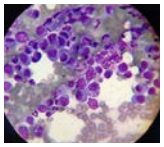
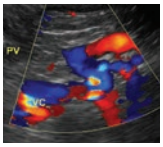

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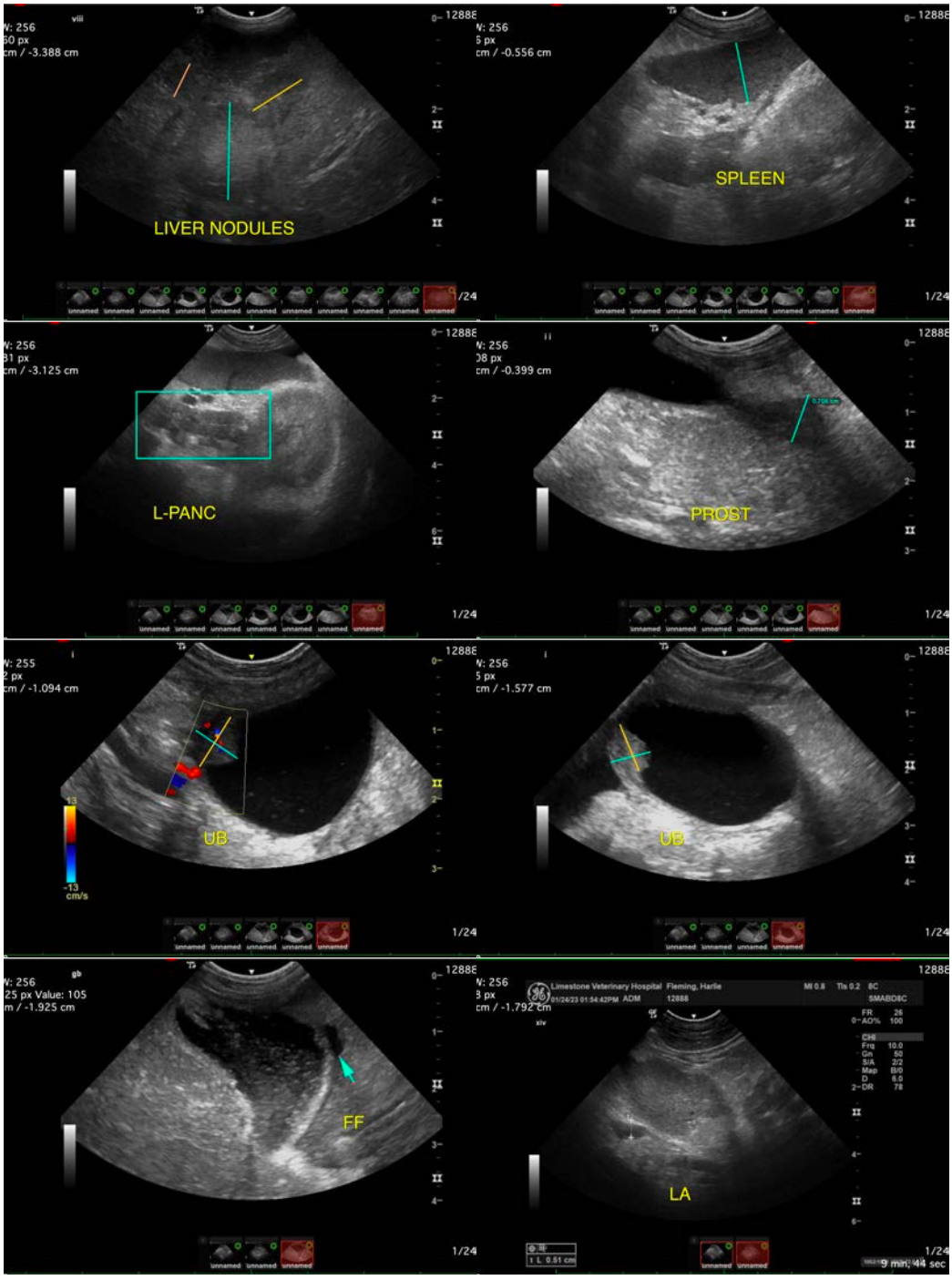

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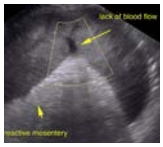
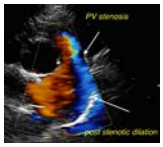
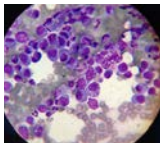
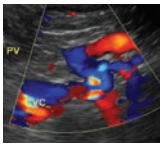

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

kathleen.sennello@sonopath.com