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Clinical Sonography & Telecytology
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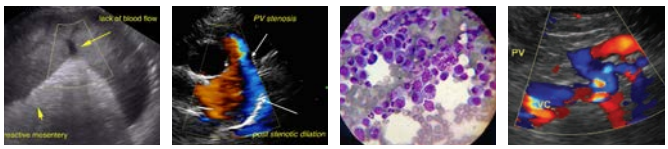

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1-800-838-4268 info@sonopath.com

PATIENT

Clyde Cottone

SPECIES

Canine

BREED

Papillon

SEX

Neutered Male

AGE

14 Years

WEIGHT

16.8 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Emily Kirk

HOSPITAL NAME

Shiloh VH

REFERRING VET

Dr. Lauren Eyrich

INVOICE

45834

DATE

3/9/23

PRESENTING CLINICAL SIGNS

Patient presented on 3/2 for evaluation of multi-day behavior changes and being ADR at home. O reports that P had been hyporexic for multiple days and has lost a significant amount of weight (approx. 3 lbs of unintentional weight loss since July 2022). P has also been having urinary and stool accidents in the house, is drinking less water, and keeping to himself. Vomiting about once a week. Stools are soft. Previous lab work showed potential emerging kidney disease but senior lab panel on 3/2 was fairly stable.

Abnormal PE/Chem/CBC/UA Results: CBC - persistent lymphocytosis (0.8 - historic) Chemistry - SMDA 12, Creatinine 1.4, BUN 55 (previously 14, 1.8, ad 52 respectively in June 2022), TP 5.3 and Albumin 2.4 (historically decreased Albumin at 2.6 on last 3 lab panels), historically increased ALP (253 on last panel), and increased LIpase (551 - historically at 441 on previous panel). UA - 10-15 RBC, 2-5 WBC with no bacteria, 2+ protein, USG 1.014 Normal thyroid Chest x-rays unremarkable

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 (0.94 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 (5.39 cm) with small cortical cysts and pyelectasia at 0.52 cm. Overall echogenicity is slightly hyperechoic with significantly decreased 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 nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.79 cm) with a large caudal cortical cyst measuring 3.31 cm and pyelectasia at 0.30 cm. Overall echogenicity is slightly hyperechoic with significantly decreased 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 nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.74 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 borderline large 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. There is a poorly defined focal “moth eaten”/finely cystic region in the splenic parenchyma measuring approximately 2.84 cm x 2.17 cm.

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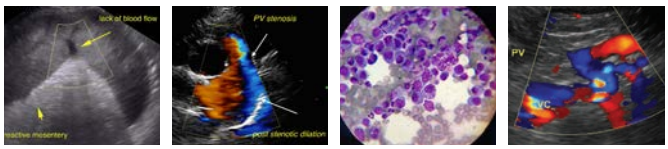

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Liver

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

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 uniform diameter with minimal fluid distension. Wall appears subjectively, mildly increased. Bowel loops follow a typical curvilinear path with distinct wall layering. Duodenum wall measures 0.47 cm. Jejunum wall measures 0.32 cm. There is very mild duodenal speckling visualized. 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 right limb of 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.

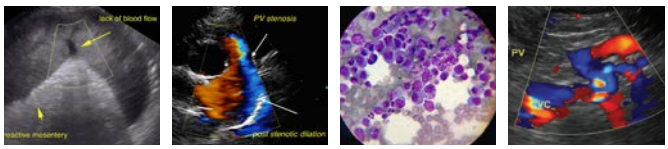
Free Abdomen

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.

ULTRASONOGRAPHIC FINDINGS

- Significantly reduced corticomedullary distinction in both kidneys with bilateral pyelectasia and a large cyst in the caudal pole of the right kidney – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. Pyelectasia of the kidney(s)could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other. The large cystic structure in the right kidney is most consistent with a benign renal cyst.

- Borderline large spleen with a focal poorly defined “moth eaten” area – The significance of this is uncertain, as it does not have any change in echogenicity, etc. This most likely represent a benign lesion, although neoplastic change cannot be ruled out. Fine needle aspirate if possible.



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- Prominent, hypoechoic pancreas – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Large, heterogeneous 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.
- Mildly thickened small intestine with mild mucosal speckling – Bright mucosal speckling has been postulated to represent dilated lacteals or focal accumulations of mucus, cellular debris, etc.. in the mucosal crypts.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There are significant changes visualized associated with both kidneys, most consistent with chronic progressive renal disease. Recommend a urinalysis and culture, looking for possible pyelonephritis, as well as a blood pressure and urine protein to creatinine ratio.

The small intestine appears subjectively thickened, and there is some very mild mucosal speckling associated with the duodenum. It is possible that there is some component of a protein losing enteropathy as well. This is typically diagnosed by excluded significant renal protein loss and confirming normal hepatic function (normal pre- and post-prandial bile acids testing). Additionally, you could consider sending a GI panel to Texas A&M for a qualitative PLI, TLI, cobalamin and folate, looking for additional evidence of underlying GI disease. If this is thought likely, you could consider:

- Consider a novel protein/hydrolyzed protein diet (exclusively at least 4-6 weeks)
- Consider a GI panel to Texas A&M for evaluation of B12 levels, folate, PLI/TLI etc.. to further evaluate for pancreatic/small intestinal disease (as recommended above).
- Recommend chronic pre- and probiotic therapy.
- For a definitive diagnosis, endoscopic GI biopsies would likely be necessary. Primary differentials would be severe IBD, lymphangiectasia, and less likely GI neoplasia.

The changes to the liver are subjective and mild. Per recommendations above, consider a liver function test.

There is a somewhat subtle, irregular/"moth eaten" section of spleen. This is isoechoic and could represent an early neoplastic lesion or a benign cystic/hyperplastic lesion. If possible, a fine needle aspirate of this region should be performed. If this is not possible, I would consider continued monitoring with ultrasound and 3-view thoracic radiographs.

My suspicion is that the renal disease is a significant player in this situation. Consider treatment for uremia with nausea medications, etc., but concurrent GI disease is also possible.

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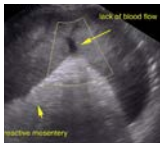
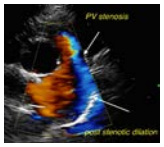
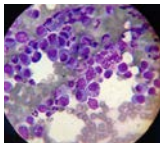
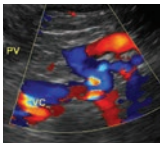

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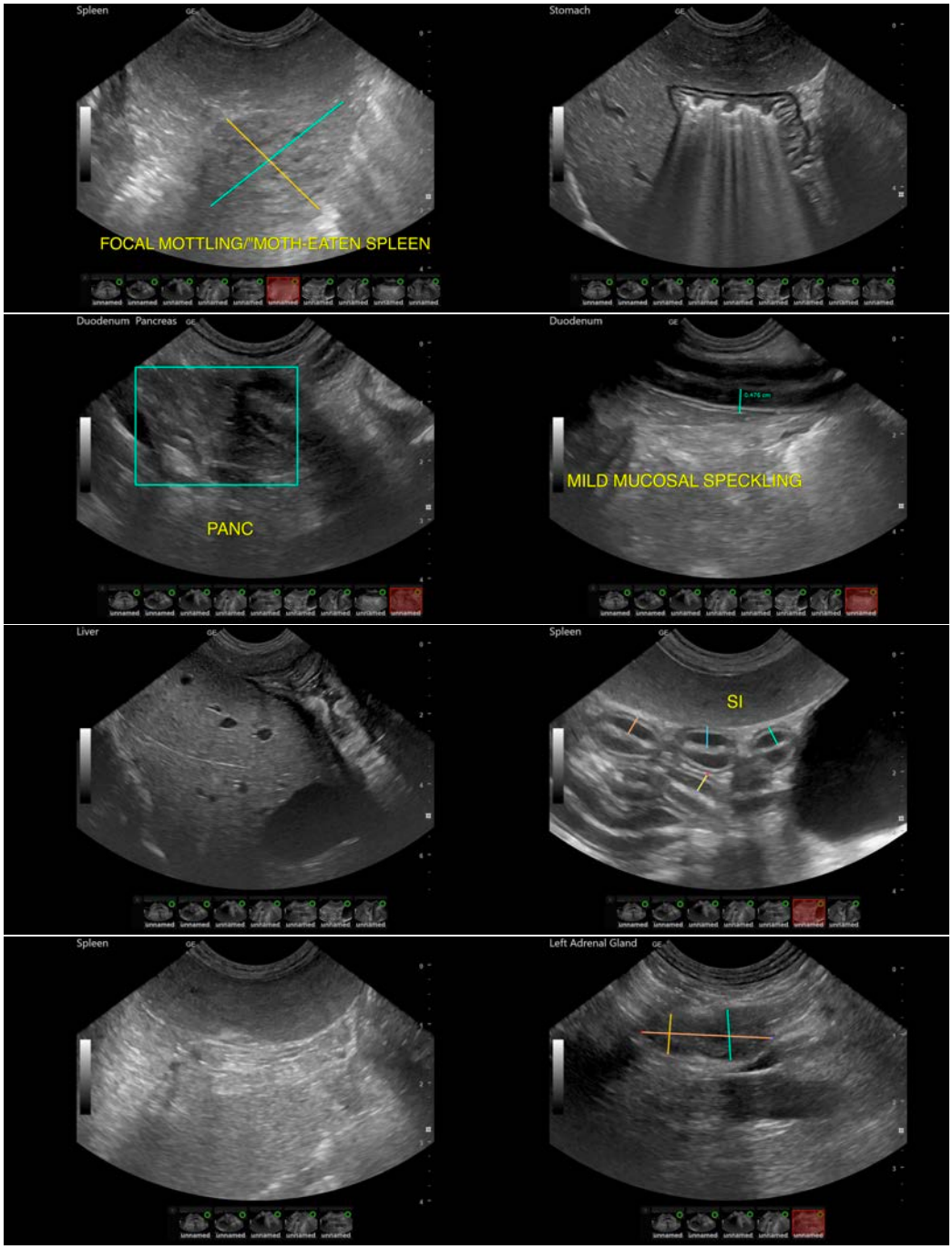

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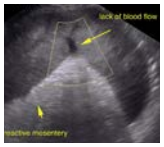
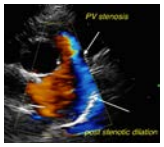
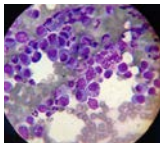
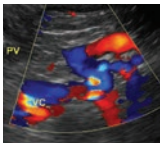

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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