SonoPath
Clinical Sonography & Telecytology
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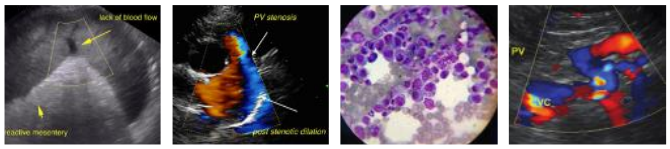


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Benji Lopez

SPECIES
Canine

BREED
Pug-a-poo

SEX
Neutered Male

AGE
15.5 Years

WEIGHT
18.3 Pounds

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Jessica Miller

HOSPITAL NAME
ACC Flanders

REFERRING VET
Dr. Hallihan

INVOICE
16588

DATE
7/12/22

PRESENTING CLINICAL SIGNS

History: Vomiting, anorexia, diarrhea, icteric. Current meds: metronidazole 250 1/2BID (just started yesterday)

Abnormal PE/Chem/CBC/UA Results: ALT 1375, Tbili 9.7, AST 195, GGTP 154, ALKP 7678, BUN 50, Crea 2.3, K+ 3.4, WBC24, Neut 21070, Mono 1715

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended with primarily anechoic contents and occasional echogenic non-shadowing debris. Apical urinary bladder wall is diffusely thick (0.45 cm). Mucosa is hyperechoic and irregular. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface.

Prostate (neutered) is normal in size, echotexture and echogenicity for a neutered male.

Left kidney is normal is size (4.49 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted

Right kidney is normal is size (4.74 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted

Adrenal Glands

Adrenal glands are largely normal in size, shape and contour. Some parenchymal heterogenicity is present without concerning capsular distortion. These changes are likely normal for this age but should be monitored if there is any suspicion of adrenal disease. The left adrenal gland measures 2.2 cm long x 0.79 cm at the cranial pole and 0.81 cm at the caudal pole. The right adrenal gland measures 2.04 cm long x 0.91 cm x 0.62 cm at the caudal pole.

Spleen

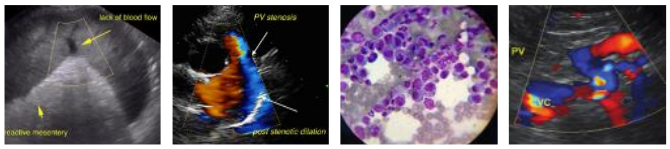
Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). At the head of the spleen, there is a slightly irregular nodular hypoechoic appearance. Blood flow is present but appears decreased.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder appears mildly subjectively overdistended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

Gastrointestinal



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The visible stomach wall is normal in thickness and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The observed pancreas is prominent (enlarged) in size, hypoechoic to surrounding tissue and irregular in shape with a swollen undulating contour. Enhanced hyperechoic ill-defined surrounding fat is noted.

Free Abdomen

In the cranial abdomen, around the pancreas and around the liver and gallbladder, there is markedly enhanced hyperechoic fat diffusely. No free fluid or lymphadenopathy present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Acute pancreatitis
- Heterogenous Liver – These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.
- Mildly overdistended gallbladder. The enhanced tissue in the area od suggestive of inflammation from a focal peritonitis, potentially as the result of pancreatitis or an acute liver insult, such as a toxic insult and/or infectious process, such as leptospirosis versus other.
- The head of the spleen appears hypoechoic and slightly nodular. Differentials include a reactive process, secondary to immune stimulation or infiltrative round cell neoplasia versus given the decreased blood flow, an infarct can't be ruled out.

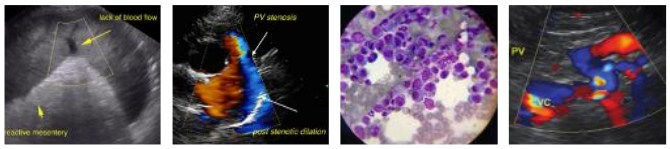
Secondary Findings

- Chronic Cystitis - Urinary bladder wall changes are most consistent with chronic cystitis. Infiltrative neoplasia cannot be ruled out but is considered less likely give the location and diffuse nature of the changes.
- Nonobstructive nephrolithiasis bilaterally
- Age related adrenal changes

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Recommendations for this patient include:

- A quantitative PLI for further evaluation of the pancreas



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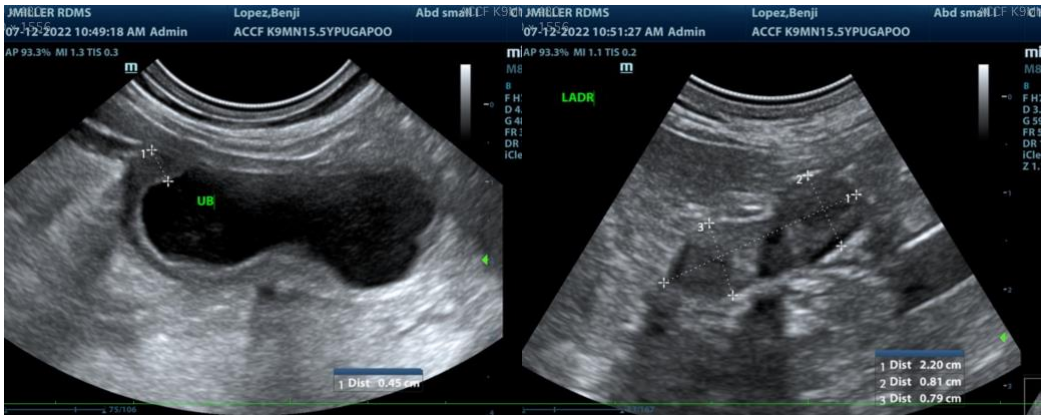
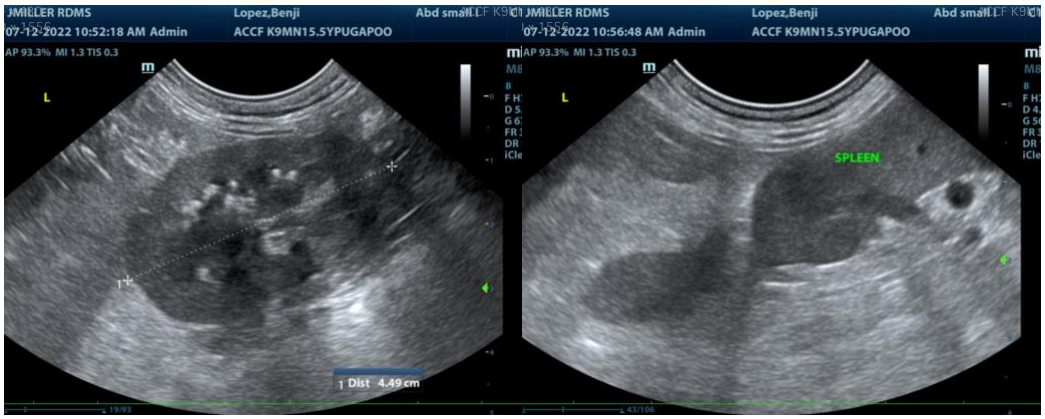
- Testing for Leptospirosis is warranted given the evidence of an acute hepatopathy
- Urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.
- In the meantime, medical management of pancreatitis with anti-emetics, gastroprotectants, appetite stimulants or nutritional support as needed, pain management, broad spectrum antibiotics, and fluid therapy is recommended. If possible, a fresh frozen plasma transfusion and hyperbaric oxygen therapy (HBOT) could be beneficial. Monitoring of the pancreas with power doppler is recommended to identify possible necrosis as well as other potential sequelae such as abscesses, etc.
- Following appropriate fluid resuscitation and supportive care, once clinical signs and laboratory values start to improve, a recheck of the spleen is recommended to assess blood flow of that area. If the nodular appearance remains persistent, a fine needle aspirate of the spleen could be considered. If clinical signs and/or liver enzymes don't improve, a fine needle aspirate of the liver is also warranted, if patients coagulation status is appropriate.





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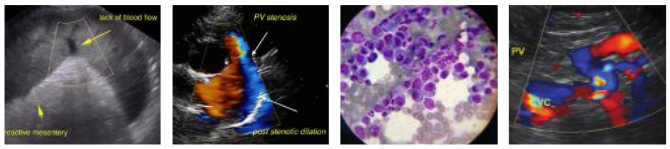

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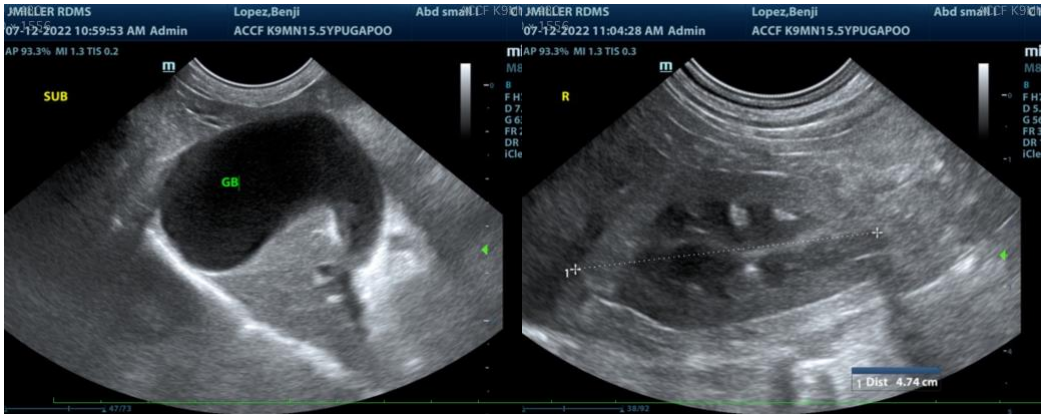

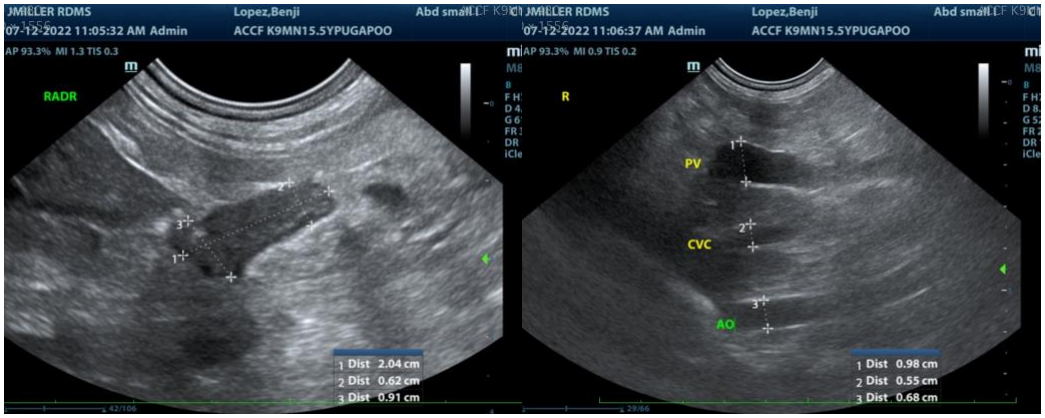

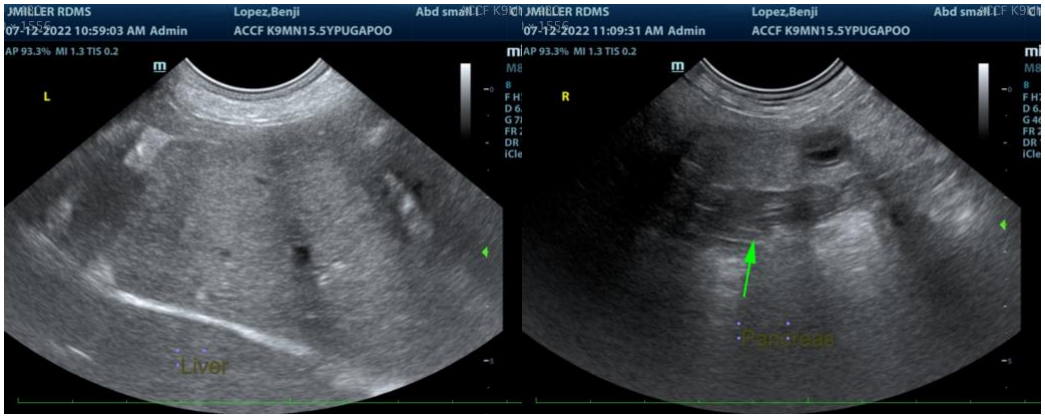

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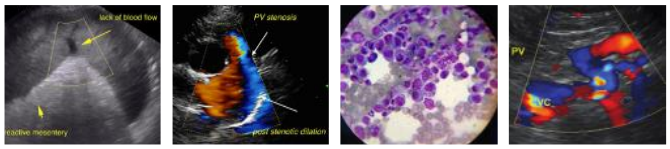

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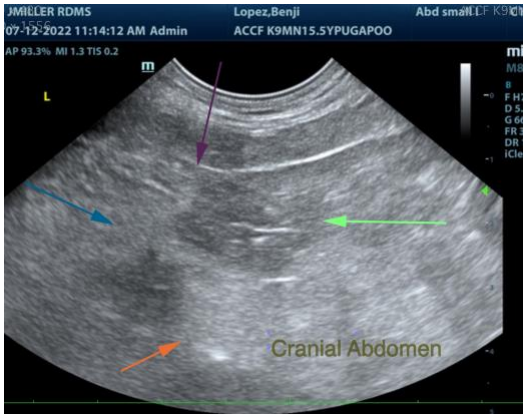

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM DACVIM

Beth.Johnson@SonoPath.com