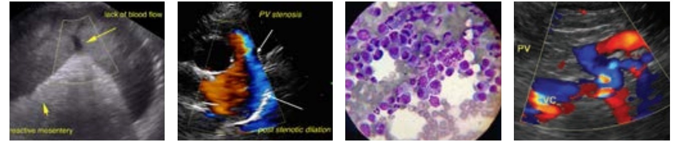
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Maggie Marshall

SPECIES
Canine

BREED
Yorkie X

SEX
Spayed Female

AGE
16 Years

WEIGHT
6.8 Pounds

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Dr. Megan Cassels-Conway

HOSPITAL NAME
Central Broward AH

REFERRING VET
Dr. Janeen Lezcano

INVOICE
41743

DATE
9/28/22

PRESENTING CLINICAL SIGNS

P has hx of HAC (currently off vetoryl), DM (appears controlled). P presented yesterday with acute incident of decreased appetite and vomiting.

Abnormal PE/Chem/CBC/UA Results: CBC: WBC: 23.5H, plt ct: 582H, neut: 20445H, monos: 1175H, Chem: ALT: 817H, ALP: 764H, GGTP: 16H, t bili: 0.5, creat: 59, creat: 1.7, Phos: 7.0, gluc: 330, K: 5.7H, T4: 0.8, UA: SG: 1.021, 2+ prot, quiet sediment, UCS pending, fructosamine: 372H. 6/2022: CBC: plt ct: 493H, neut: 11808H, monos: 864H Chem: creat: 0.8; ALP: 791H, Phos: 2.1L, triglyc: 783H, T4: <0.5L P is on Ursodiol 250mg 1/4 tab qd, Gabapentin, Vetsulin 3 units SQ BID. Cerenia started yesterday, Clavamox, Metronidazole, and Denamarin Adv started today. Also doubled ursodiol. Last AUS interpreted by SonoPath, plz referrence (11/10/2021). Last ACTH stim on 5/2022 acth stim: pre-7.4/post 9.7. Has been off Vetoryl since 5/2019 due to suspicions of adrenal necrosis ACTH stim at the time was pre: 1.7, post: 1.8.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia or infarcts observed. The left kidney measures 3.37 cm. The right kidney measures 2.97 cm. Non-obstructive areas of mineralization/nephroliths are noted in both kidneys. Cortical cysts noted bilaterally.

Adrenal Glands

The right adrenal gland is normal in size (1.23 cm long x 0.53 cm thick), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.83 cm long x 0.49 cm thick), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

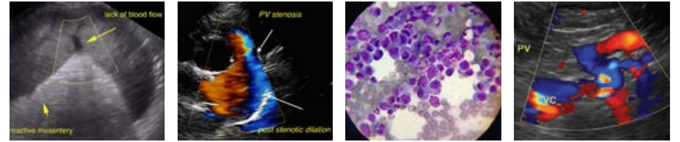
Spleen

The 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). No focal nodules or masses are observed. Splenic vasculature appears normal.

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 is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. A cystolith is noted. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.



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Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) 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 (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). 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 (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The observed pancreas appears appropriately isoechoic to surrounding omental fat. The capsule is mildly irregular in shape. Parenchyma is mildly heterogenous and coarse. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

ULTRASONOGRAPHIC FINDINGS

- **Pancreatic age-related remodeling –** Mild irregularities are consistent with benign age-related change. Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.

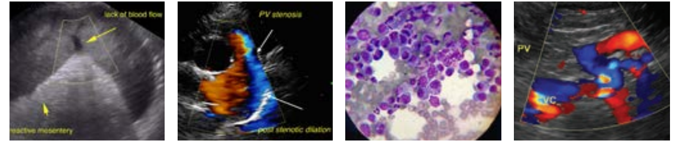
- **Gallbladder debris with a cholecystolith -** Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

- **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.

- Age related kidney changes with non-obstructive nephrolithiasis and cortical cysts bilaterally

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is not a distinctly visible cause ultrasonographically at this time to explain this patient's decreased appetite and nausea, and/or the increased liver enzymes. Given the concurrent endocrinopathies, etc., a metabolic cause is considered most likely. Mild active pancreatitis could be present on top of chronic smoldering pancreatitis, as that can be present with minimal to no ultrasound changes, and/or, while visibly mild and non-obstructive, cholangitis could be playing a role. Additionally, given this patient's historically low cortisols and despite a recent more normal ACTH stim, given the recently high potassium, relative hypocortisolemia could also be contributing.



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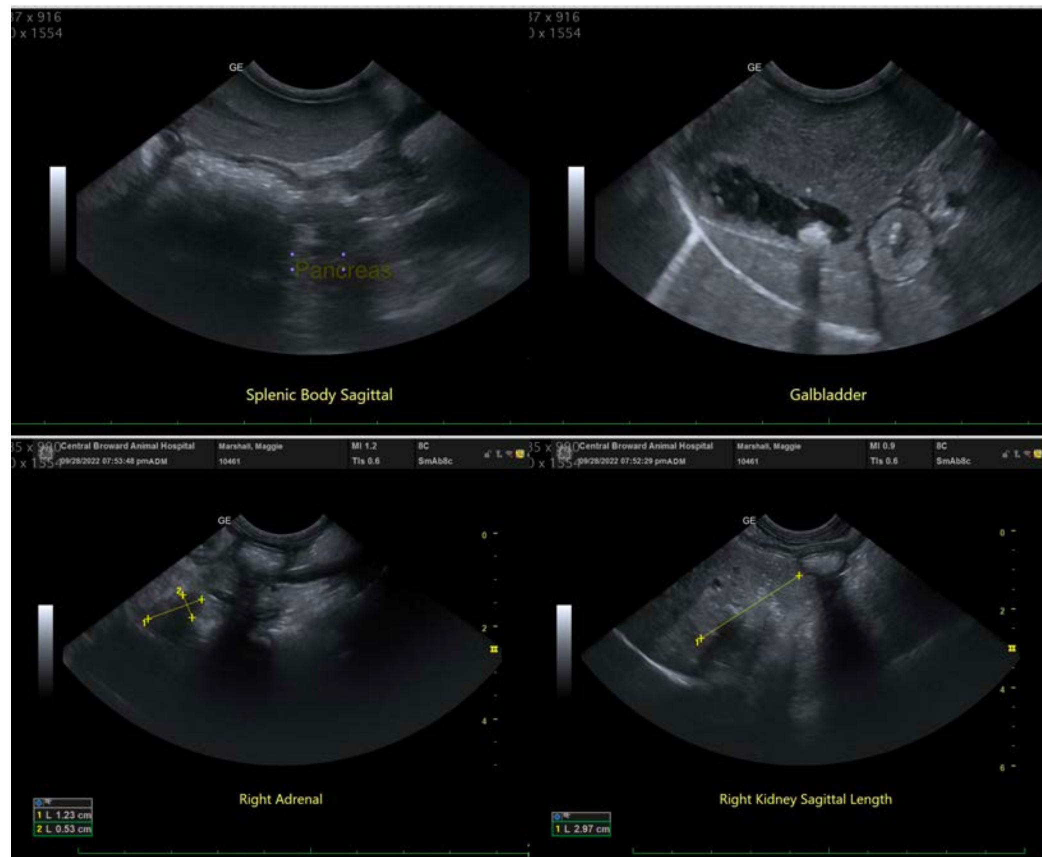
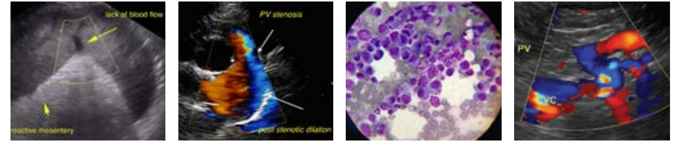
Therefore, further diagnostic recommendations could include urine culture (as is reportedly pending) as well as a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory for further evaluation of GI and pancreatic function.

Although it was done relatively recently, given the acute exacerbation of clinical signs, an ACTH stimulation test could be repeated. Otherwise, empirical supportive/symptomatic medical management of clinical signs, possible mild pancreatitis, cholangitis, etc. is recommended and could include management that is reportedly already in place, antiemetics, gastroprotectants, appetite stimulants, and/or even a food tube if necessary, pain management if indicated, broad-spectrum antibiotics, fluids as needed, etc.

If cranial abdominal pain is present or develops, further intervention may be indicated for the cholecystolith. However, this is likely an incidental, non-clinical finding. This study is not significantly progressive from previous studies.





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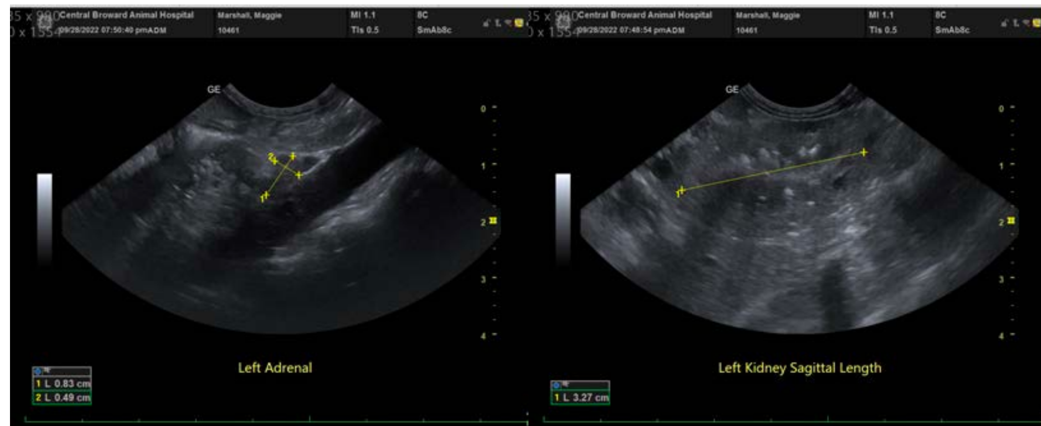

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
Beth.Johnson@sonopath.com