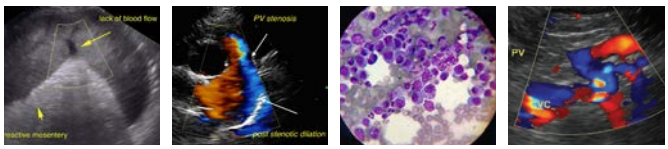
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Toffee So

SPECIES
Canine

BREED
Shih Tzu

SEX
Spayed Female

AGE
4 Years

WEIGHT
7.2 kg

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Dr. Laura de Cordon

HOSPITAL NAME
Mason Dixon Animal Emergency Hospital

REFERRING VET
Dr. Brewer

INVOICE
39752

DATE
7/22/22

PRESENTING CLINICAL SIGNS

Presented for history of vomiting and soft, mucousy stool for 1-2 days O reports pt urine looked darker than normal Lethargic and ataxic
Abnormal PE/Chem/CBC/UA Results: 5-7% dehydrated Mucous membranes icteric Abdomen painful on palpation Elevated ALT, AST, GGT, TBili with macro agglutination noted Thrombocytopenia - macro platelets on blood smear CBC: mild leukocytosis, platelet count 88000

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with exfoliated cells, mucous and/or small blood clots. Both sterile inflammation as well as urinary tract infection can also present with echogenic debris. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Kidneys are normal in size and contour. A relatively uniform hyperechogenicity is observed with mildly decreased corticomedullary distinction. There is no pyelectasia noted and no mineral is observed. No overt masses/nodules are observed. The left kidney measured 4.14 cm. The right kidney measured 3.43 cm.

Adrenal Glands

The area of the adrenal glands is examined without evident pathology.

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

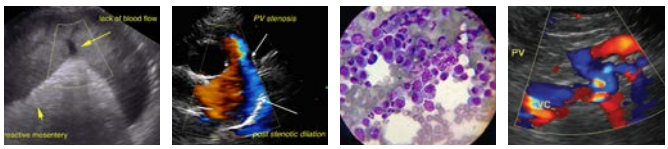
Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. No focal lesions are observed. 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 mildly edematous diffusely. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

Gastrointestinal

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is 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 mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease.



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The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

A very scant amount of anechoic free fluid is noted between the left kidney and the spleen, as well as hyperechoic enhanced fat and mesentery in the cranial abdomen, around the liver and stomach, in the area of the pancreas.

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

- **Nephritis –** This appearance can be consistent with chronic interstitial nephritis or glomerulonephritis. Toxic insult and/or infectious disease (pyelonephritis, Leptospirosis, etc.) cannot be ruled out. This finding should be interpreted in combination with suspicion for renal disease and/or supporting laboratory or urinalysis changes.

- **Hyperechoic hepatomegaly -** This appearance is non-specific and most consistent with a benign steroid (endocrine) or vacuolar hepatopathy or reactive or idiopathic hepatopathy. Inflammatory and/or infiltrative disease (such as round cell neoplasia) are also possible, but considered less likely.

- **Mildly thick, edematous gallbladder wall with gallbladder debris** – This edematous appearance to the gallbladder wall can occasionally be seen with immune mediated diseases such as IMHA. 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.

- **Scant free fluid and enhanced fat and mesentery in the cranial abdomen** – rule outs include mild emerging pancreatitis versus a reaction to an acute hepatopathy or potentially nephritis, gastroenteritis, other.

SECONDARY FINDINGS

- **Urinary bladder debris**

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Recommendations include:

- 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.

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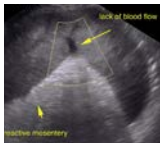
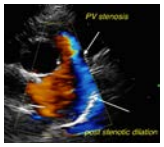
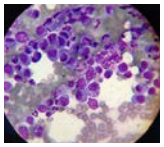
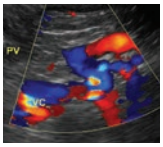

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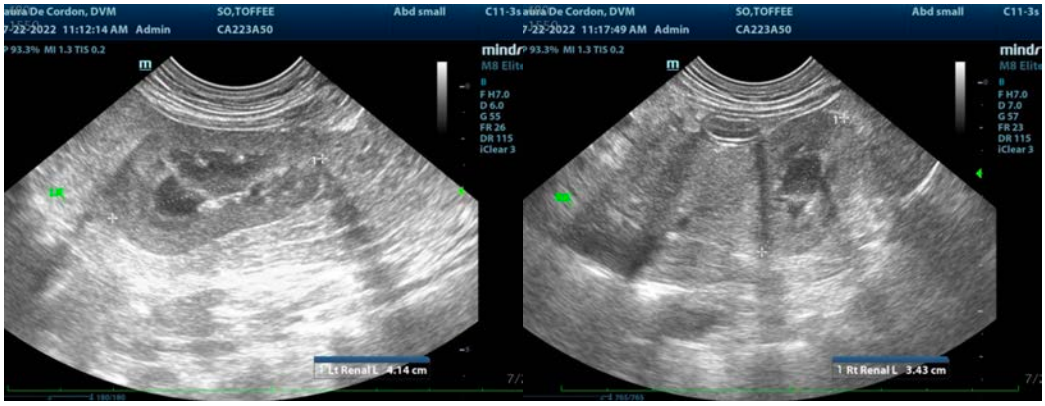
- Given the mild kidney changes and the reported increased liver enzymes, testing for Leptospirosis is warranted if not recently evaluated.
- Given the reported macroagglutination and thrombocytopenia, if this patient is also anemic, the reported increased total bilirubin could be secondary to hemolysis. If not, an intrahepatic cholestasis is possible. Recommendations include monitoring red blood cell count for the development of anemia, if not present currently, while treating an acute hepatopathy +/- mild early pancreatitis, etc. with antiemetics, gastroprotectants, appetite stimulants, or nutritional support as needed, pain management if indicated, broad-spectrum antibiotics, and fluid therapy.
- If anemia develops, combined with the reported thrombocytopenia, comprehensive infectious disease testing is warranted followed potentially by therapy for an immune mediated component to the cytopenias.



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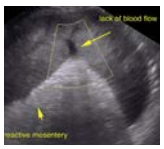
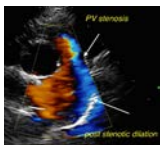
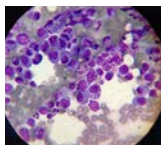
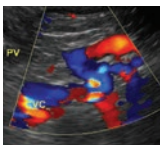

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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