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Clinical Sonography & Telecytology
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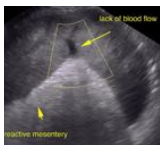

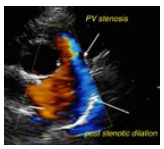

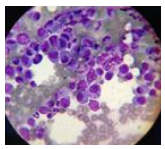
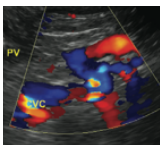

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Jerry Natzke

SPECIES

Canine

BREED

Cattle Dog Mix

SEX

Neutered male

AGE

13 years

WEIGHT

11.3 kg

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Central Island VEH

HOSPITAL NAME

Island Mobile Paws VS

REFERRING VET

Dr. Markland

INVOICE

32241

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PRESENTING CLINICAL SIGNS

History: Jerry presented to the emergency hospital on July 25 with a one day history of anorexia, painful abdomen, and reluctance to jump up. PE confirmed a painful abdomen with no other remarkable findings. Bloodwork was consistent with dehydration and pancreatitis. Jerry has been on a strict low fat diet. Jerry was discharged on Zentonil 200 mg PO SID, Gabapentin 100 mg PO BID, Buprenorphine 0.8 mg/mL (0.3 mL) PO BID. While Jerry did recover from this episode after supportive care, this ultrasound was scheduled to rule out pancreatic tumour or other underlying cause of his recurrent pancreatitis. Abnormal PE/Chem/CBC/UA Results: July 25, 2022: SNAP cPL=abnormal Albumin= 50 (22-39) ALP=307 (23-212) ALT=165 (10-125) TBili=34 (0-15)

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately 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.

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

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 mineral or infarcts observed. Mild bilateral pyelectasia measuring 0.46 cm was noted on the transverse view of the left kidney and 0.35 cm on the transverse of the right kidney. The left kidney measured 4.48 cm. The right kidney measured 4.93 cm.

Adrenal Glands

Left adrenal gland is normal in size (1.53 cm long, 0.4 cm at cranial pole and 0.42 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

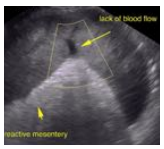
Right adrenal gland is normal in size (2.3 cm long, 0.81 cm at cranial pole and 0.41 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. A non-capsular expanding, hyperechoic nodule was noted in the cranial pole of the right adrenal gland. Visible surrounding vasculature appears normal.

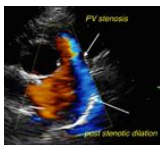
Spleen

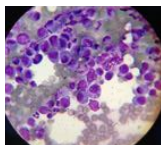
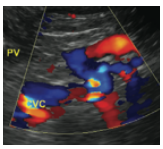
Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. The mid caudal liver has a slightly, irregular, rounded, swollen contour, possibly an early or emerging mass. Parenchyma is diffusely hyperechoic characterized by less





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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 smooth without visible thickening. 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 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 (< 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. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

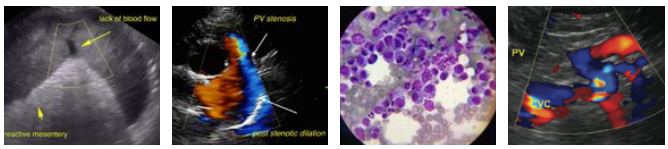
There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

1. **Hyperechoic nodule in the cranial pole of the right adrenal gland –** Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.
2. **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. The caudal mid liver may be the same process resulting in the hepatomegaly elsewhere, however, an emerging, well-differentiated infiltrative neoplasia such as hepatocellular carcinoma or benign liver mass such as adenoma, etc. cannot be ruled out.



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3. **Gallbladder debris -** 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.

Secondary Findings

1. **Age related renal changes with mild bilateral pyelectasia,** which may be an indication of subclinical polyuria, polydipsia, fluid therapy, etc. Chronic infection as with pyelonephritis cannot be ruled out.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- There is no ultrasonographic evidence at this time of ongoing pancreatitis or pancreatic mass, etc.

- The described adrenal gland, liver and gallbladder changes are all suggestive of hyperadrenocorticism. If clinical signs of hyperadrenocorticism, such as polyuria, polydipsia, polyphagia, panting, hair loss, hypertension, etc. are present, testing for hyperadrenocorticism with a LDDS test is warranted. If a LDDS test has been evaluated with a normal result, investigation of possible atypical hyperadrenocorticism with a full ACTH stimulation adrenal panel to the University of Tennessee could be considered.

  If clinicals signs are not present, no further intervention is recommended for the hyperechoic adrenal nodule and monitoring is appropriate with adrenal testing pursued when/if clinical signs develop and/or the adrenal nodule changes in appearance.

  If not recently evaluated, blood pressure is recommended.

  If not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture are also recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

- Given the more rounded than expected appearance to the caudal mid liver, steroid/vacuolar hepatopathy alone a FNA of that region can be considered if the patient's coagulation status is appropriate. However, the lesion trends toward a benign change.

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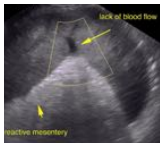
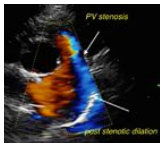
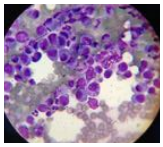
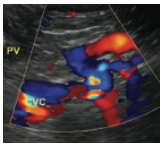

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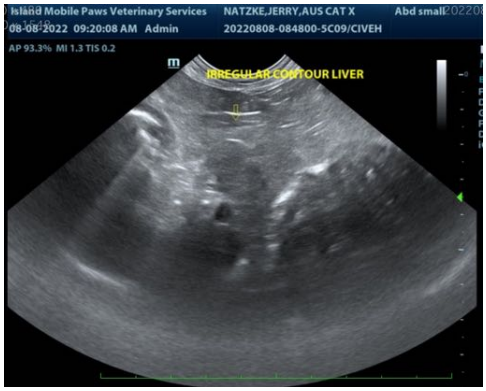

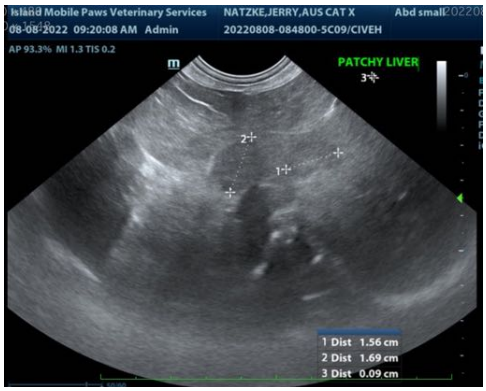

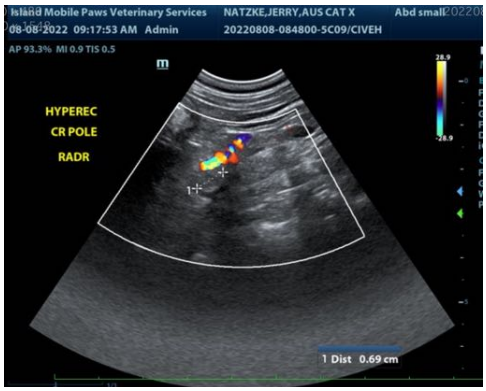

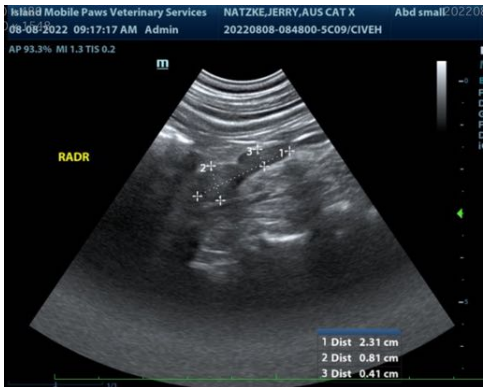

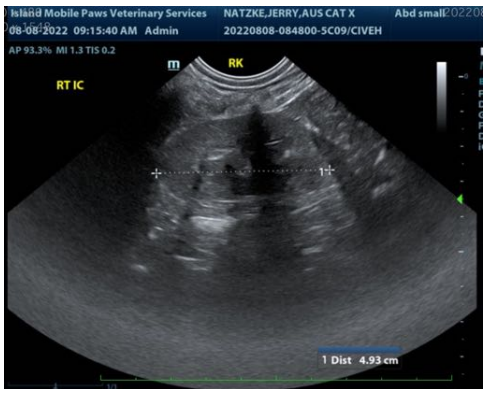

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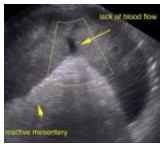
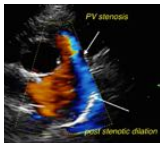
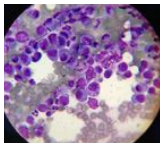
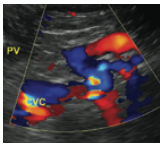

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM DACVIM

Beth.Johnson@SonoPath.com