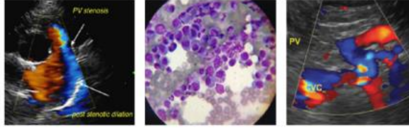
IMAGING PERFORMED BY

SVS Mobile Imaging KC 816 - 401 - 5010

svsimagingkc@gmail.com



SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT

Duke Ostermeyer

SPECIES

Canine

BREED

Shih Tzu MIx

SEX

Neutered male

AGE

2 years

WEIGHT

11 pounds

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

IMAGING PERFORMED BY

Rachel Runnells RVT

HOSPITAL NAME

SVS Imaging KC

REFERRING VET

Dr. Meineka

INVOICE

10288ag

DATE

04/04/2022

PRESENTING CLINICAL SIGNS

History: Lifelong history of intermittent vomiting. Laparotomy 3-24-22 revealed leaking perforation at the lesser curvature at the pyloric antrum. Pylorus palpably thickened but no obstruction found in the stomach. Liver and gallbladder were grossly normal, gallbladder intact but enlarged. Perforation was repaired, supportive care with fluids, antibiotics, analgesia in clinic. Patient recovered well and discharged home 3-28-22 eating and bright and comfortable, defecating normally and easily. Sudden decline 3-31-22 to anorexia, regurgitation/vomiting, lethargy.

Abnormal PE/Chem/CBC/UA Results: 3-23: Hct 18.6 %, RBCs 4.84, WBCs 44K, hyponatremia at 122, hypochloremia 94, and hypokalemia at 2.9. BUN 49, Glucose 290. 4-2: Hct 15.8%, RBCs 4.16, WBCs 33K, new hyperphosphatemia at 7.3, persistent hyponatremia at 139, hypochloremia at 94, and hypokalemia at 2.9. New elevations in ALT too high to read, ALP 1903. GGT 69, Tbili 1.5. BUN 36, creatinine normal. Abdominal rads: gastric dilation and wall thickening or splenomegaly, loss of detail in cranial abdomen. Middle and caudal quadrants no significant findings, no obstructive patterns, empty intestinal tract.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 4.0 cm in length. The right kidney measured 4.6 cm in length.

The area of the aortic trifurcation was free of pathology.

The area of the residual prostate was free of pathology.

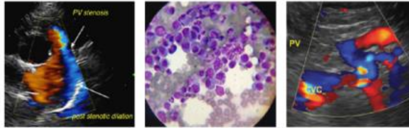
Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.47 cm width at the caudal pole and 0.40 cm width at the cranial pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.33 cm width at the caudal pole and 0.47 cm width at the cranial pole.

Spleen

The spleen exhibited subnormal size with symmetrical capsule contour and a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

Liver



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The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. A focal cystic nodule was noted in the caudal aspect of the mid to right liver adjacent to the gallbladder. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was mild to moderately distended in size containing anechoic content with mild nondependent nonorganized luminal debris. Mild dilation of the cystic duct was present, the common bile duct was not definitively visualized.

Gastrointestinal

The stomach exhibited marked distention with retained anechoic fluid, the fundus and gastric body walls were overtly normal. Moderate concentric thickening in the area of the antrum and pylorus was present with loss of discernible wall layer detail and suspect focal small ulcer in the dorsal aspect of the pylorus adjacent to the gastroduodenal junction. The pylorus wall measure dup to 1.0 cm in wall width.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Mild duodenal corrugation was present with minor retained upper duodenal fluid consistent with concurrent mild upper duodenal ileus. The lumen of the small intestine was empty with no signs of mechanical obstruction or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The left limb, right limb, and base of the pancreas presented hypoechoic to heterogeneous echogenicity compared to adjacent omental fat. Mild asymmetrical capsule margination was present with mild variable parenchymal swelling and mild peripancreatic reactivity / inflammation. No overt evidence of neoplasia.

Free Abdomen

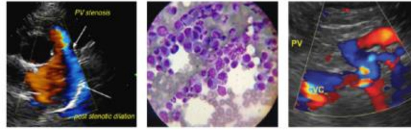
Regional peri pancreatic to peri gastric cranial abdominal hyperechoic mesentery was noted. No peritoneal effusion was present. Intermittent mildly prominent to enlarged gastric and pancreatic duodenal lymph nodes were present. The lymph node was essentially isoechoic to adjacent omentum without evidence of peripheral inflammation and maintaining a normal width: length ratio (<0.5). The lymph node measured 0.55 cm in diameter.

ULTRASONOGRAPHIC FINDINGS

- Hypomotile stomach exhibiting concentric antrum/pylorus mural thickening, loss of discernible pyloric wall detail and suspect focal dorsal pyloric ulcer.
- Duodenitis.
- Regional peri gastric reactive to possibly inflamed mesentery with intermittent gastric and pancreatic duodenal lymphadenopathy.
- Possible mild concurrent pancreatitis.
- Hepatopathy with focal nonspecific cyst like nodule-hepatic inflammation, reactive/vacuolar hepatopathy, cholestasis, small hepatic cyst or less likely hepatic abscess possible.
- Moderately distended gallbladder and CBD containing mild luminal debris.
- Volume contracted spleen.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Complicated case. The concentric pyloric hypertrophy may indicate inflammatory disease or benign hypertrophy while given the lack of discernable wall layering potential for neoplasia cannot be excluded. Correlation with gastric biopsies if obtained is recommended. If not, endoscopic or ideally gold standard full thickness pyloric biopsies via laparotomy are recommended for further assessment. Gross inspection of the gallbladder and cystic biliary duct with potential for manual expression as well



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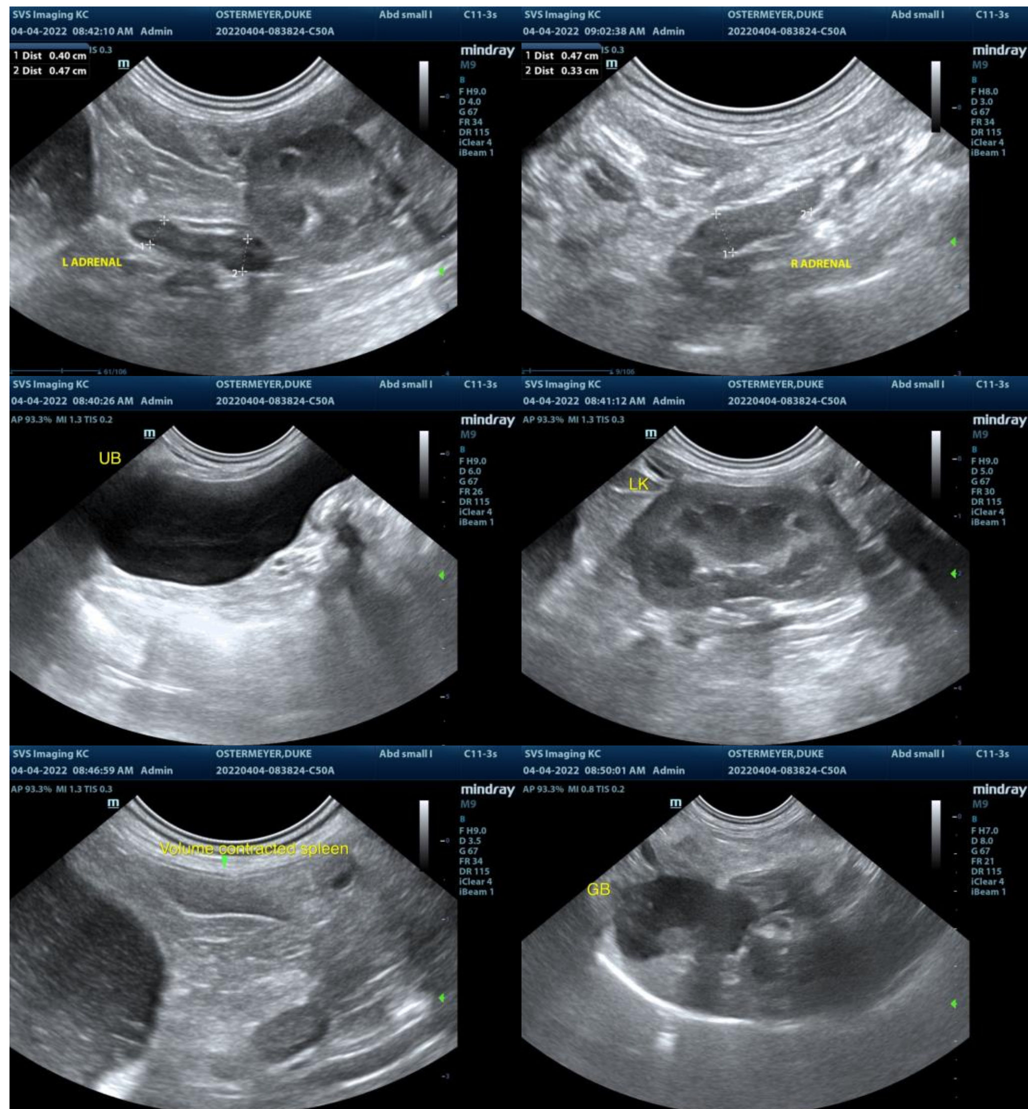
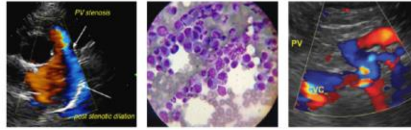
as of the liver with potential for hepatic biopsies assuming normal clotting status is warranted. Surgical options in this case, however, may be limited by current anemia of unknown etiology. Intestinal bleeding may be considered as a potential cause of the anemia given the BUN elevation and if evidence of melena. CBC and pathology review and blood transfusion along with electrolyte correction is likely indicated prior to potential surgical considerations. Empirically, hospitalization with potential passage of a gastric tube along with aggressive therapy for hypomotile gastritis and sonographic reassessment of the stomach would be a more conservative approach.





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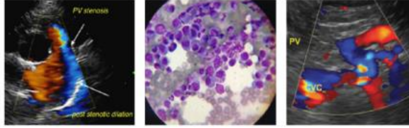
The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I



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can be of any further assistance please contact me.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

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