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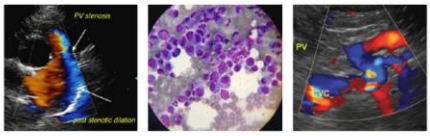
fredgromalak@gmail.com



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Oliver Benesario

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

M

AGE

18 mo

WEIGHT

7.2 lb

INTERPRETED BY

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

IMAGING PERFORMED BY

Kim Liedberg

HOSPITAL NAME

SVS Imaging WI

REFERRING VET

Advanced Animal Hospital Dr. Schnuelle

INVOICE

10663ag

DATE

05/25/2022

PRESENTING CLINICAL SIGNS

History: Hx of 3/4 days of lethargy, hypersalivation, inappetence and diarrhea and elevated ALT of 400. Similar episode on April of 2021 including elevated ALT of 400. Clinician attributed to retained decidual teeth. Extracted teeth and symptoms resolved. Presently he has a mild case of ataxia.

Abnormal PE/Chem/CBC/UA Results: ALT 400 AST 200 GGT 21 hypernatremia 162 FNA of the liver was performed

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with mild to moderate nondependent pinpoint hyperechoic sediment to mineral. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Both kidneys exhibited mildly prominent size given the patient breed and weight. Mild increased corticomedullary echogenicity with potential for pinpoint areas of medullary mineral were observed. A focal small cortical cyst measuring 0.46 cm in diameter was present in the right kidney.

The left kidney measured 5.2 cm in length. The right kidney measured 5.5 cm in length.

The area of the aortic trifurcation was free of pathology.

The prostate exhibited expected size and presentation for an intact young male canine without evidence of pathology.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.44 cm width at the caudal pole and 0.42 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 0.52 cm width at the caudal pole and 0.54 cm width at the cranial pole.

Spleen

The spleen exhibited 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

The liver exhibited subnormal size with a symmetrical capsule contour. The hepatic parenchyma exhibited normal echogenicity with mild coarse echotexture. Subjective reduced hepatoportal vascular volume was noted. A subjective anomalous vessel noted caudal to the pylorus was present appearing to extend dorsally into the possible area of the caudal vena cava measuring 0.93 cm in diameter. Mild turbulent blood flow noted in the cranial abdominal vena cava at the level of the liver.

The gallbladder was non-distended to mildly subnormal in size with thin walls and primarily anechoic luminal content with mild particulate sludge. The cystic and common bile ducts were normal.

Gastrointestinal

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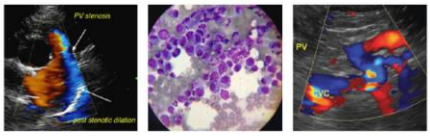

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The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained moderate retained echogenic fluid and chyme with no signs of ileus, obstruction or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material.

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

Pancreas

The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

Free Abdomen

No overt lymphadenopathy or peritoneal free fluid was present.

ULTRASONOGRAPHIC FINDINGS

- Urinary bladder sediment to pinpoint mineral
- Subjective mildly prominent bilateral kidneys with mild increased corticomedullary echogenicity
- Hypomotile stomach
- Subnormal to hypovolemic liver
- Subjective anomalous vessel caudal to the pylorus with concurrent mild turbulent cranial abdominal caudal vena cava flow

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The combined sonographic abnormalities in this study are strongly consistent with a portosystemic shunt with gastro-caval shunt suspected. Another type of portosystemic shunt cannot be definitively excluded. Other potential considerations may include portal vein hypoplasia/microvascular dysplasia or primary hepatic parenchymal disease although these are thought less likely. Further assessment may include fasting and post prandial bile acids to assess hepatic functionality as well as referral for further assessment or additional imaging and surgical options if strongly suspected portosystemic shunt is confirmed.

UA +/- C/S may be considered.

Empirically supportive care pending additional work up as below could be considered.

Royal Canin Hepatic Support diet or Hills L/D, Metronidazole (7.5 mg/kg PO bid) over the next 14 days, Lactulose (Oral: 3.1-3.7 g/5 ml lactulose in a syrup base) long term to target 2-3 soft stools/day, with a high-quality protein supplement of minor amount of yogurt or cheddar cheese. Monitor bile acids, with attention paid to dropping albumin, BUN or cholesterol. SAMe and nutraceuticals as needed. Ursodiol (10-15 mg/kg p.o. q24h) can be considered as hepatoprotectant and to enhance bile flow. Zinc serum level keep between 200—500 ug/dl. If deficient then Tx zinc acetate 1-3 mg/kg/day. Gastrointestinal protectants are recommended if the patient is anorexic.

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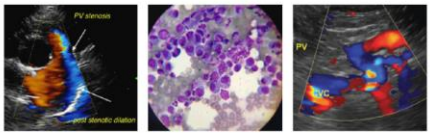

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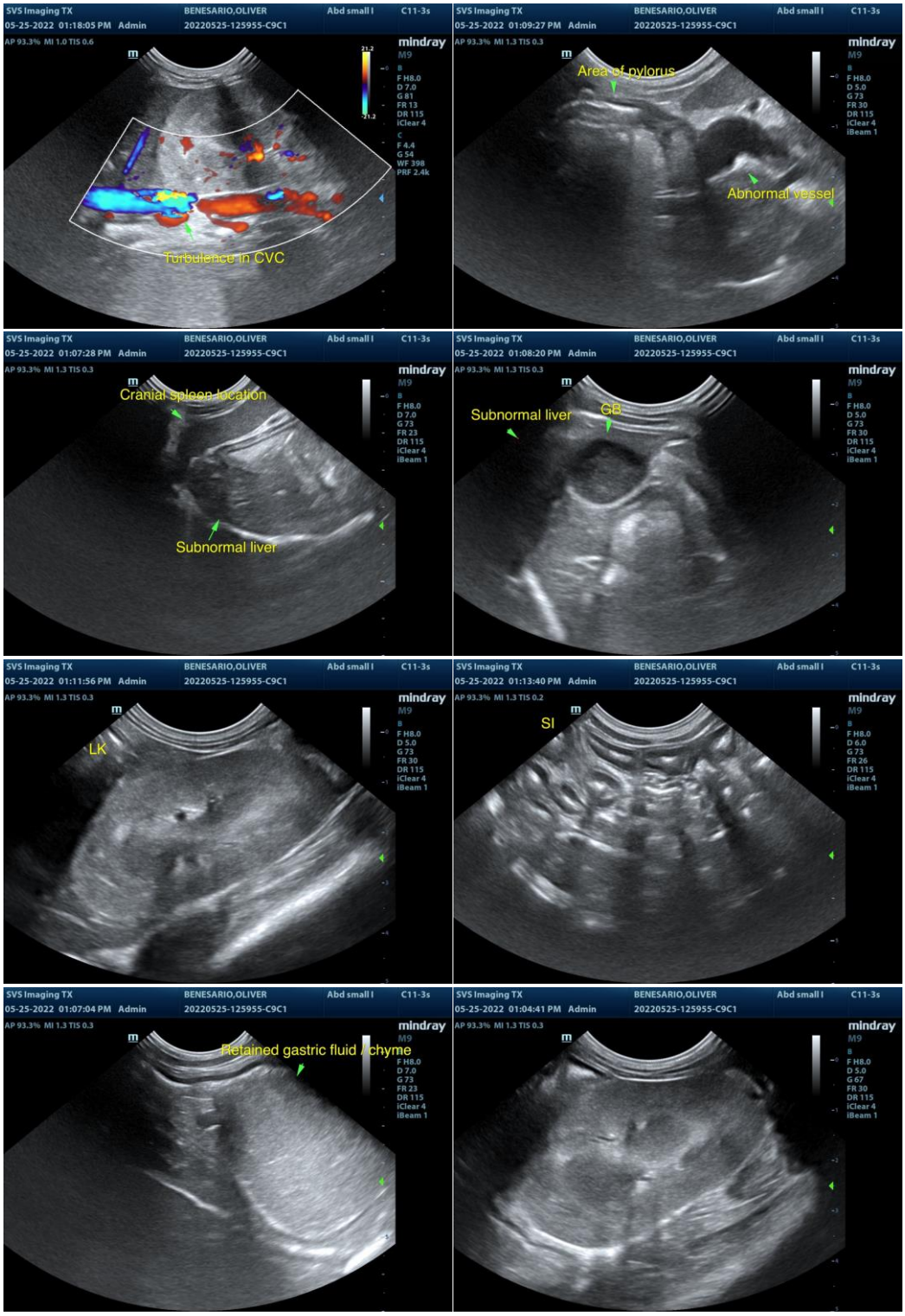

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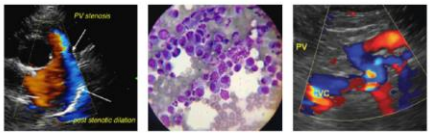

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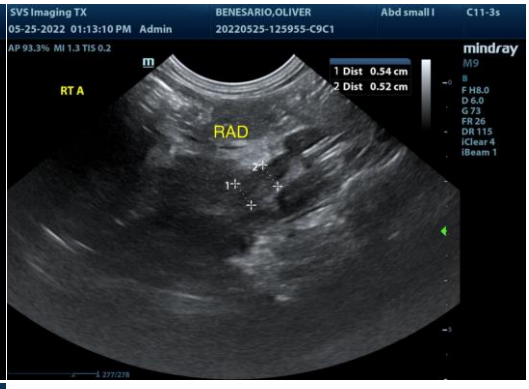

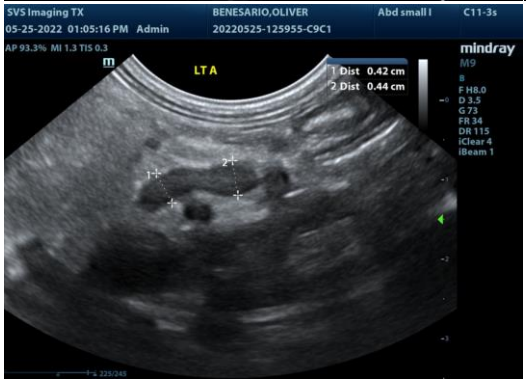

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

info@SonoPath.com