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Clinical Sonography & Telecytology
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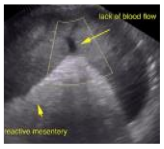

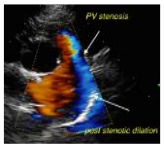

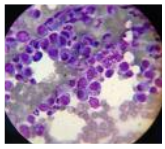
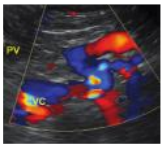

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1-800-838-4268 info@sonopath.com

PATIENT

Houston Boit

SPECIES

Miniature Poodle

BREED

Canine

SEX

M/N

AGE

11 years

WEIGHT

15.3 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Graham Sager-Gellerman, DVM

HOSPITAL NAME

Back Bay VC

REFERRING VET

Graham Sager-Gellerman, DVM

INVOICE

17314

DATE

7/20/23

PRESENTING CLINICAL SIGNS

11 yol MN Miniature Poodle Historical portal vein hypoplasia diagnosed by biopsy (although no PMR in our office showing biopsy results) On Royal Canin Liver diet Had hyperammonemia June 2023, showed neuro signs (mental dullness, disorientation). Successfully resolved w/ lactulose/metronidazole. Goal of study is monitoring hepatic ultrasound and identifying any other abdominal pathology.

Abnormal PE/Chem/CBC/UA Results: 6/12/23: CBC: wnl CHEM: glucose wnl, renal values wnl, ALT 131 U/L (10-125 U/L), GGT 21 (U/L), cholsterol wnl, total bilirubin wnl Ammonia: 214 umol/L (11.7-70.5 umol/L) 6/17/23: Ammonia 148 umol/L 6/27/23: Ammonia 39 umol/L

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild, dependent to non-dependent, particulate sediment was present without evidence of calculus formation. No overt lumen mineral or calculi were noted. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

The area of the residual prostate was free of overt pathology.

No evidence of pathology in the area of the aortic trifurcation.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation or pyelectasia was present. Areas of medullary mineralization were noted primarily in the lateral diverticuli of both kidneys. The left kidney measured 4.3 cm in length. The right kidney measured 4.5 cm in length.

Adrenal Glands

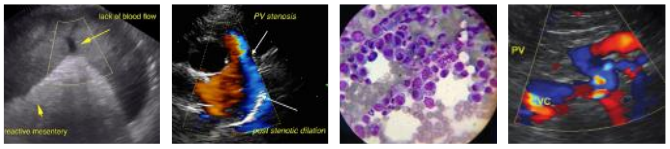
The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.54 cm width at the caudal pole and 0.37 cm width at the cranial pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.49 cm width at the caudal pole and 0.56 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/ Gallbladder

The liver presented mildly enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in



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margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. Normal to adequate hepatic vascular volume was present. The gallbladder was non-distended in size containing anechoic content with mild, echogenic, nonorganized gallbladder sediment. No evidence of gallbladder inflammatory criteria was noted. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty 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 soft fecal matter in the descending colon.

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 were evident.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Mild urinary bladder sediment
- Mild chronic renal changes with nonobstructive medullary mineral
- Mild hepatomegaly exhibiting adequate hepatic vascular volume
- Minor gallbladder sediment (non-mucocele)
- Soft fecal matter descending colon

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No overt sonographic evidence of an intrahepatic or extrahepatic macroscopic shunt.

Fasting and post prandial bile acids are recommended. If significantly elevated post prandial bile acids or recurrent / progressive neurological signs, abdominal CT with contrast for further assessment of the liver may be considered. Some or all of the following protocol may prove beneficial empirically.

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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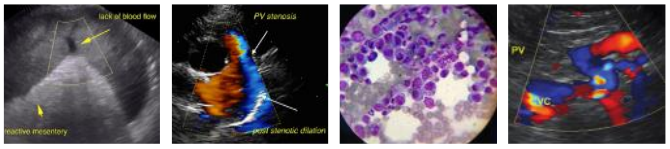

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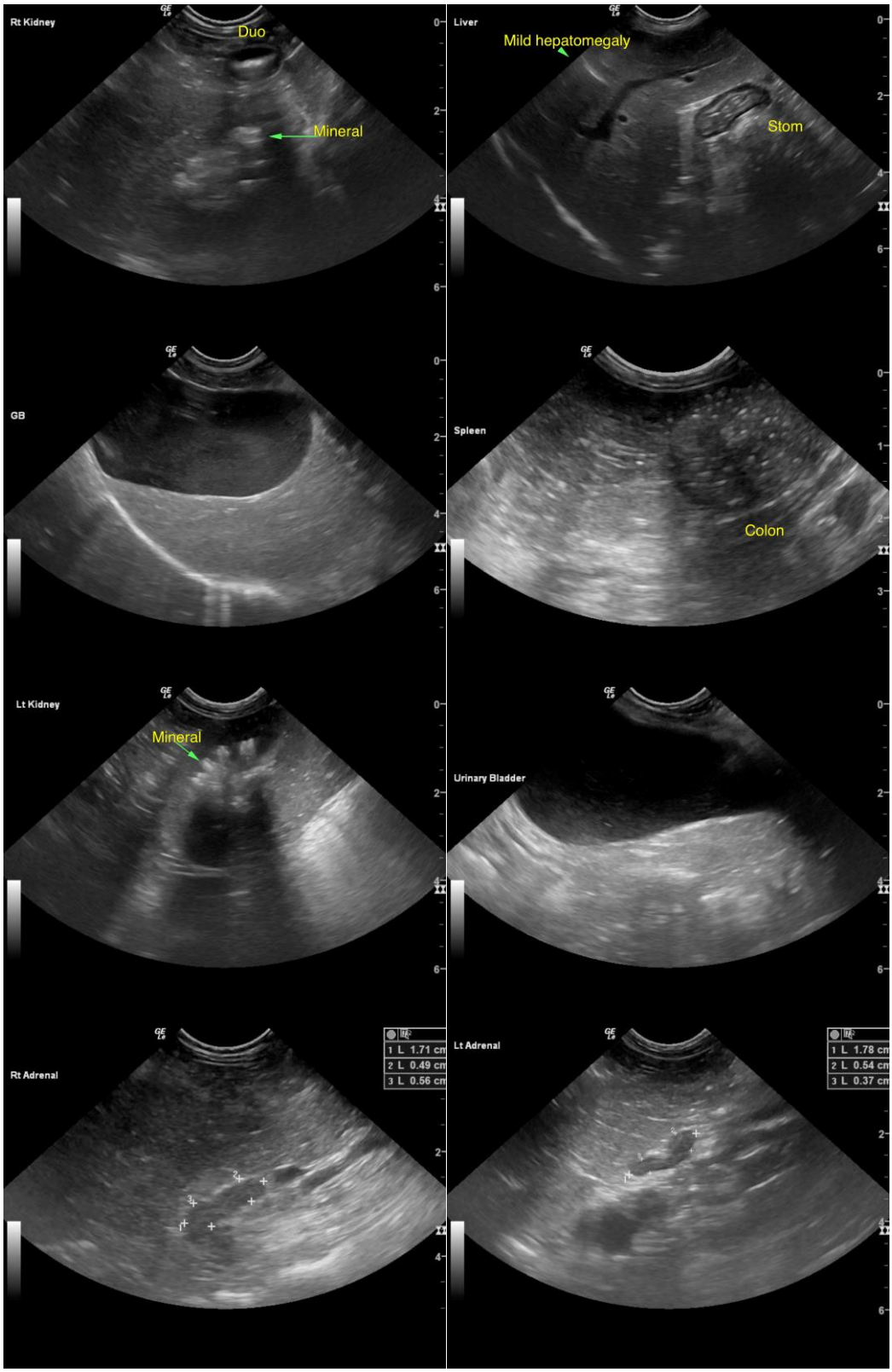

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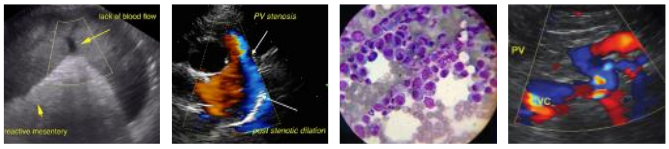

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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