



PATIENT

Milo Cruz

SPECIES

Canine

BREED

Maltese Mix

SEX

M

AGE

11 Mo

WEIGHT

13.4 lbs.

PRESENTING CLINICAL SIGNS

Elevated ALT (468) post Denamarin therapy. P initially presented for neuter consult on 5/30/22. No concerns other than coughing which lead to episodes of emesis. No current meds.
Abnormal PE/Chem/CBC/UA Results: 6/1/22 ALT 358, 7/1/22 ALT 468

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. Anechoic urine was present in the lumen with no sediment or calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The prostate exhibited the expected size and presentation for a young intact male canine, measuring 2.6 cm in diameter.

The left and right testicles were sonographically unremarkable.

The area of the aortic trifurcation was free of pathology.

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. No evidence of renomegaly or renal calculi was noted. The left kidney measured 4.6 cm in length. The right kidney measured 4.9 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 2.2 cm length x 0.37 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 1.7 cm length x 0.62 cm width at the caudal 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 was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. Normal hepatic vascular volume was present. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

INTERPRETED BY

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

IMAGING PERFORMED BY

Jessica Miller

HOSPITAL NAME

Vetco Total Care -
Kinnelon

REFERRING VET

Dr. Rodriguez

INVOICE

14285

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Gastrointestinal

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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.

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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.

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Pancreas

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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.

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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

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13.4 lbs.

ULTRASONOGRAPHIC FINDINGS

- Subjective inflammatory hepatopathy pattern - possible portal hypoplasia / microvascular dysplasia

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No overt evidence of intrahepatic or extrahepatic shunting, which is thought unlikely given the normal hepatic volume and lack of commonly seen secondary findings such as renal or cystic calculi.

IMAGING PERFORMED BY

Jessica Miller

Assuming normal clotting status, FNA of the liver for screening cytology could be considered primarily to assess for evidence of inflammatory cells. Fasting and post prandial bile acids are warranted. Core surgical biopsy is likely necessary for further definition as to whether portal hypoplasia / microvascular dysplasia is present pending bile acid testing. Bile acid testing is likely ideal prior to anesthesia. However, no obvious anesthetic contraindications are evident, assuming normal albumin, glucose, cholesterol, and BUN levels which indicate normal hepatic functionality.

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Continued hepatosupportive medications are recommended. A clinical trial of the following could be considered empirically or if evidence of elevated bile acids.

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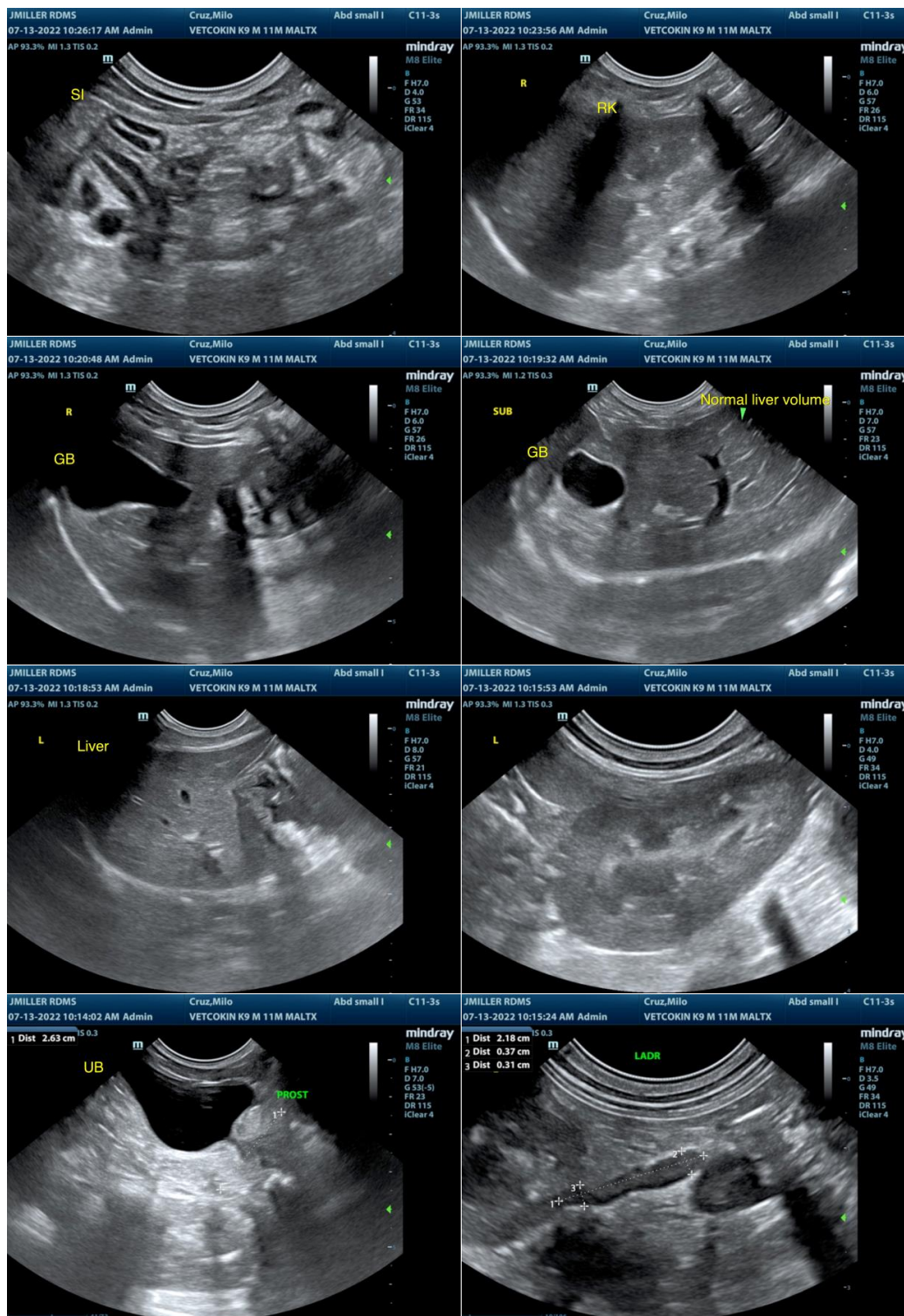
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
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