



PATIENT

Marble Shak

PRESENTING CLINICAL SIGNS

History: Elevation of ALT. Current meds: Denamarin
ALT 231 (2/23/23- 134, 1/3/23- 257, 12/1/22- 262) Bile Acids normal

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

BREED

Cavapoo

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

SEX

Male

AGE

17 months

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The left kidney measured 4.24 cm. The right kidney measured 4.19 cm.

WEIGHT

10.8 lbs

Adrenal Glands

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measured 1.62 x 0.32 cm at the caudal pole and 0.42 cm at the cranial pole. The right adrenal gland measured 1.61 x 0.42 cm at the caudal pole and 0.63 cm at the cranial pole.

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Jessica Miller, RDMS

HOSPITAL NAME

Animal General on Hudson

Spleen

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

REFERRING VET

Dr. Ng

Liver

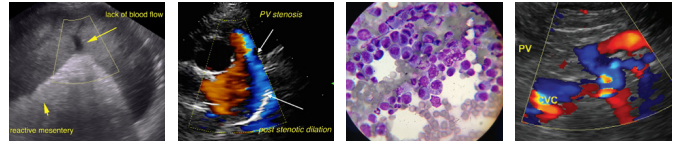
The **liver** images submitted revealed subjectively normal liver size, contour, and structure. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. The portal vein to vena cava ratio was 1:1 with no evidence of intrahepatic or extrahepatic shunting. The portal vein and vena cava measured 0.5 cm each at the portal hilus. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

INVOICE

43822

DATE

4/12/23



PATIENT *Gastrointestinal*

Marble Shak The **gastrointestinal tract** was structurally unremarkable; however, some excessively fluid filled gastric lumen with gas was noted. This is suggestive for irritation. Irritability/low-grade gastritis/gastroenteritis.

SPECIES

Canine

Pancreas

BREED

Cavapoo

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

SEX

Male

ULTRASONOGRAPHIC FINDINGS

Structurally unremarkable liver.

AGE

Minor, upper GI irritability pattern.

17 months

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

WEIGHT

10.8 lbs

Given the ALT elevations reactive hepatopathy is likely. Diet change may be appropriate. Broad spectrum anti-parasitic protocol, fecal test and hydrolyzed diet may be in this patient's best interest. If ALT values remain elevated then FNA is indicated. Leptospirosis titers are warranted to rule out occult underlying disease.

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

The hepatic clinical sonographic presentation is most consistent with Reactive Hepatopathy which is the most common cause of liver enzyme elevation in dogs and cats. The presumption is that gut and other organ antigen stimuli may be causing a low-grade immune response through portal system with which the liver is reacting to causing low-grade enzyme elevations. US-guided FNA could be performed to assess if low grade lymphoplasmacytic inflammation is present that would support this theory. If FNA is performed, please ask the cytologist to emphasize the primary inflammatory cell type. Empirical treatment measures to address this issue can include diet change to hydrolyzed diet, probiotics, deworming, nutraceuticals (SAME, Actigall...), dental exam and cleaning, and potentially antibiotics such as Clavamox. Metronidazole and Tylosin have traditionally been utilized for this purpose but new studies show that both these antibiotics can disrupt the normal intestinal bacterial flora (intestinal dysbiosis) for weeks and up to 4-6 months. Therefore, Metronidazole and Tylosin should be utilized as a last resort if other efforts have not been effective and sonographic organ appearance remains benign.

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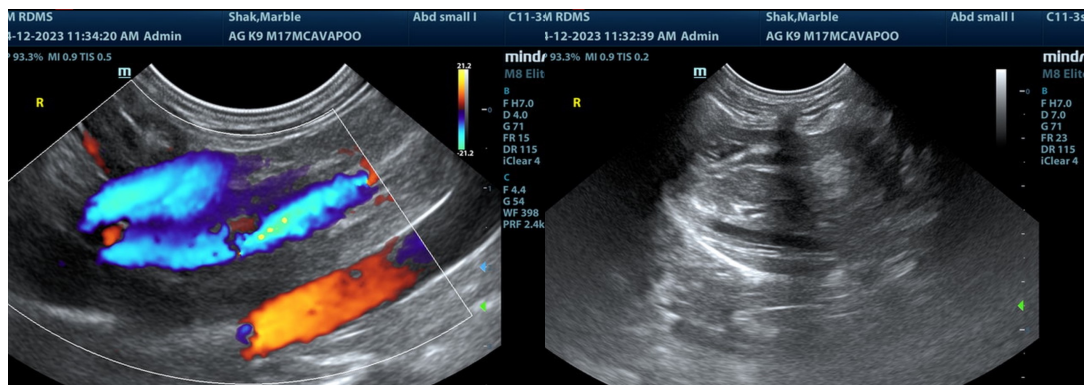
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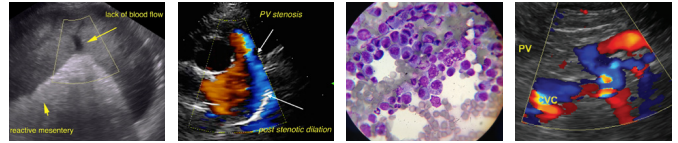
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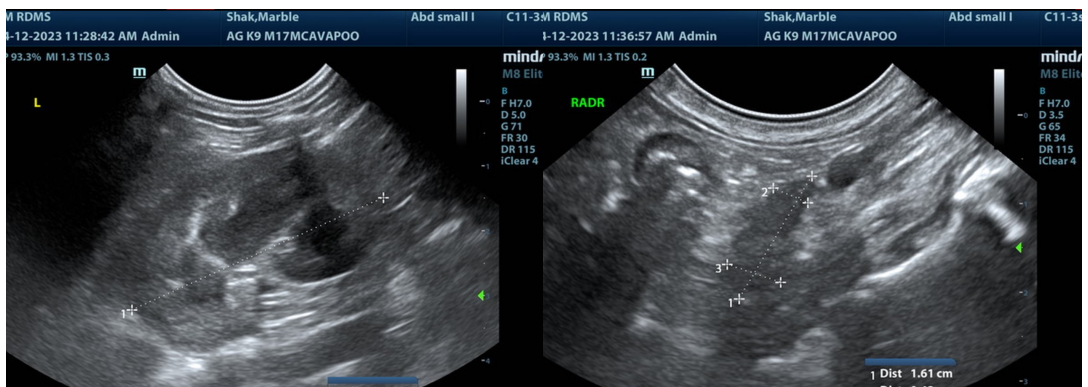
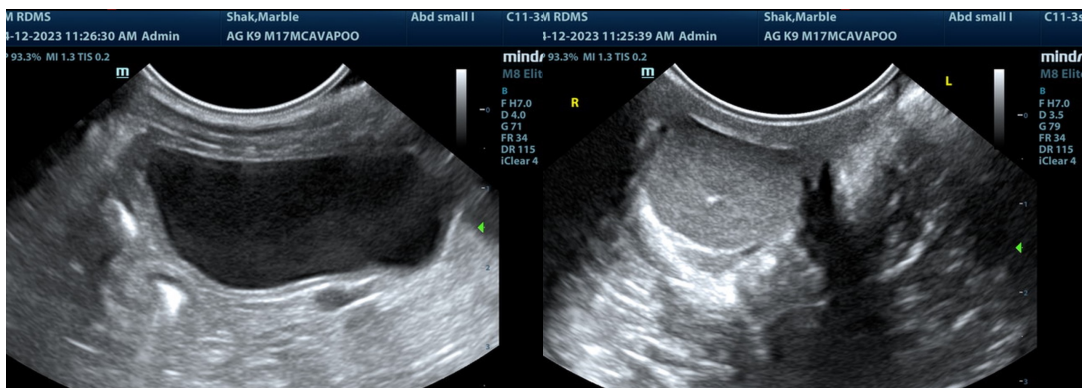
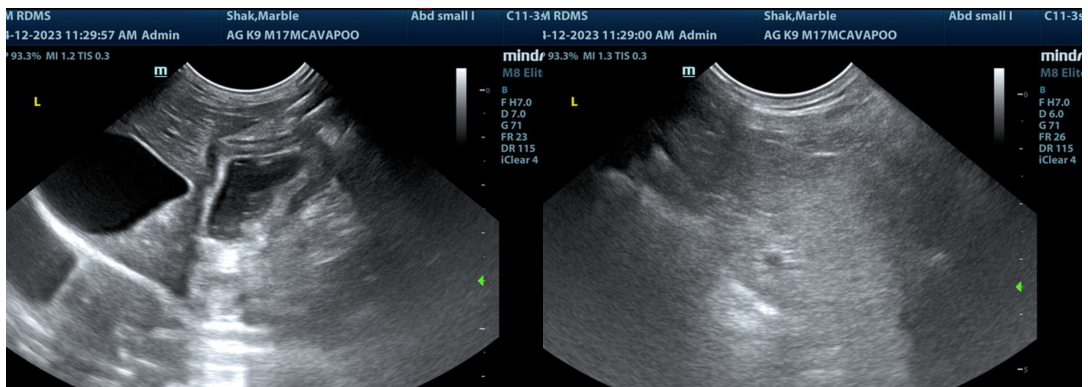
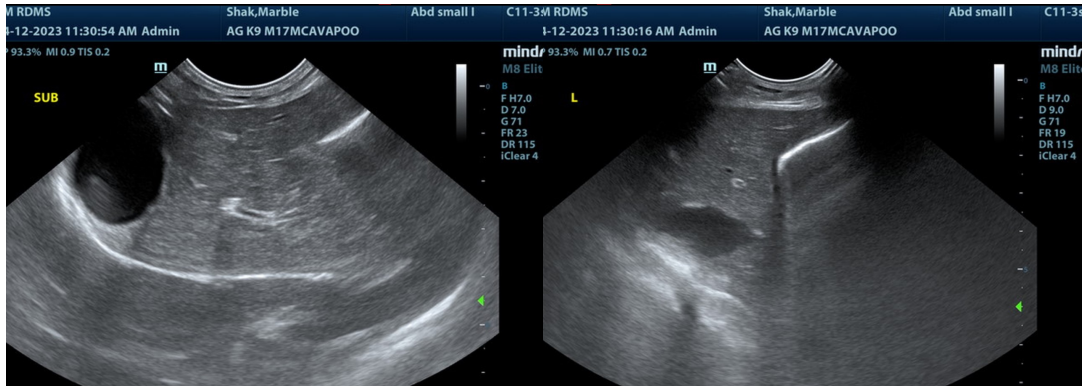
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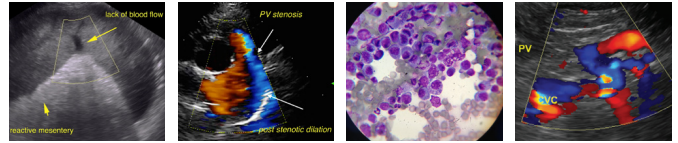
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
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