

**DATE PRESENTING CLINICAL SIGNS**

7/26/22

Presented for routine mass removal in May. Found elevated ALT and ALP on pre-surgical BW. Pet was placed on denamarin but wasn't tolerant (vomited) so owner discontinued. Enzymes were repeated in the beginning of July and they were mildly improved. Pet presented for dental today, and liver enzymes have dramatically increased. Calcium level also mildly elevated. Pet also had a bout of vomiting and anorexia a few days prior. Physical exam is unremarkable other than dental disease. Dental was postponed.

PATIENT

Charlie Rice

SPECIES

Canine

BREED

Maltese X

SEX

Neutered Male

AGE

9/28/08

WEIGHT

15.4 Pounds

INTERPRETED BY

Kathleen Sennello DVM,
MS, Diplomate ACVIM
(Small Animal Internal
Medicine)

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Greenbrier Vet Clinic

REFERRING VET

Dr. Boccanfuso

INVOICE

39811

Current Medications: Cerenia 16mg if needed.
Lab Results: 5/26 - CBC/Chem - ALT 148, ALP 931 rest unremarkable
6/9 ALT 139 ALP 628. 7/2 ALT 129 ALP 709. 7/22 ALT 461 ALP 1837
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, or masses. In the dependent portion of the urinary bladder, there is a small pile of shadowing debris that appears to be comprised of small calculi/sandy debris. These small calculi extend up into the proximal urethra and prostatic urethra. One mineralization measures 0.08 cm.

The prostate is normal in size (0.71 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, or mass effect. Small calculi are visualized within the proximal and prostatic urethra.

The left kidney has a normal shape and size (4.73 cm). Numerous non-obstructive nephroliths are visualized measuring 0.34, 0.50, and 0.43 cm as well as small cortical cysts, the largest of which measures 0.52 cm. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.51 cm) with numerous stones measuring 0.49, 0.29, 0.45, and 0.43 cm. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.57 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.71 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There is a relatively small, isoechoic, rounded mass effect on the cranial aspect of the spleen, measuring 2.22 cm x 1.71 cm. Additionally, there is an ill-defined hypoechoic region/nodule visualized measuring 1.33 cm.

Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gallbladder lumen is significantly distended. Some of the area of the wall appear mildly thickened with adherent debris and a small amount of surrounding inflammation. There is a large amount of organized, striated, echogenic debris within the gallbladder, most consistent with a gallbladder mucocele. There is no evidence of bile duct dilation.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The pancreas is prominent and mottled compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

Other

A brief view of the heart was submitted. No significant pericardial effusion was seen.

PRIMARY FINDINGS

- Echogenic shadowing material within the dependent portion of the urinary bladder and proximal urethra – consistent with small calculi/sandy debris.
- Nephroliths visualized in both kidneys – There is no evidence of an obstruction. Recommend blood pressure evaluation, urinalysis and culture.
- Isoechoic splenic nodule and ill-defined hypoechoic lesion visualized in the spleen –Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. This lesion is relatively isoechoic and could be consistent with a splenic “bleb”, daughter spleen, etc. An underlying neoplasia process cannot be ruled out.

- Heterogeneous liver – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.
- Gallbladder mucocele – There is a small amount of surrounding inflammation visualized.

SECONDARY FINDINGS

- Prominent, mottled spleen – The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

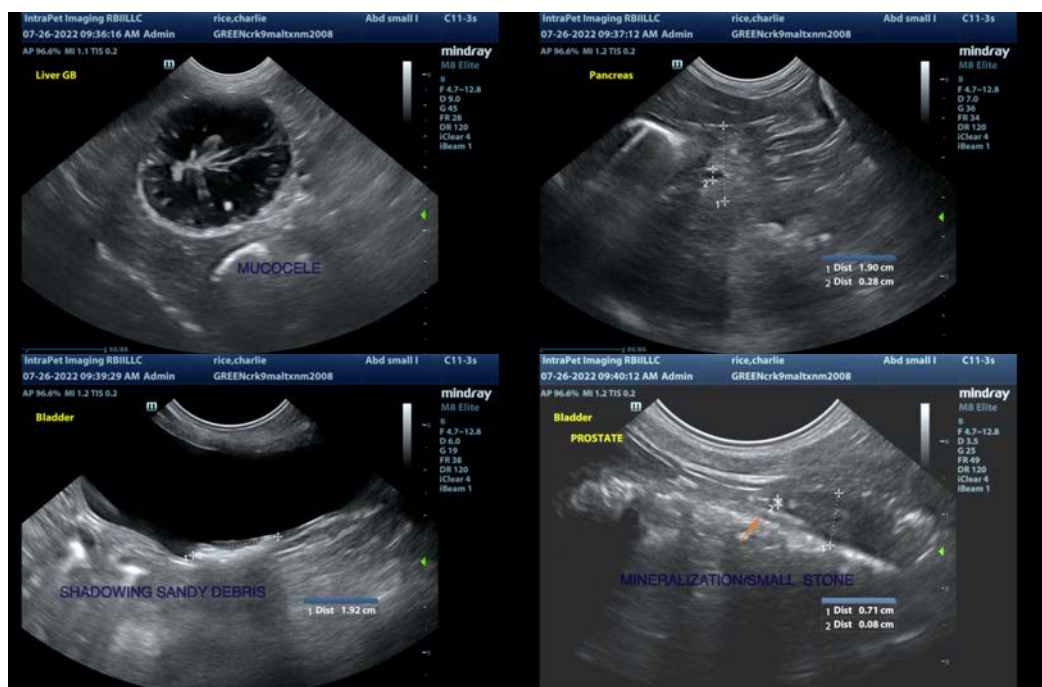
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is significantly heterogeneous, and there is a mature gallbladder mucocele visualized. I suspect the symptoms reported are secondary to the gallbladder mucocele, although a primary/concurrent hepatopathy is also possible. Consider gallbladder removal and liver biopsy. The splenic lesion could be evaluated at the same time for possible splenectomy (?).

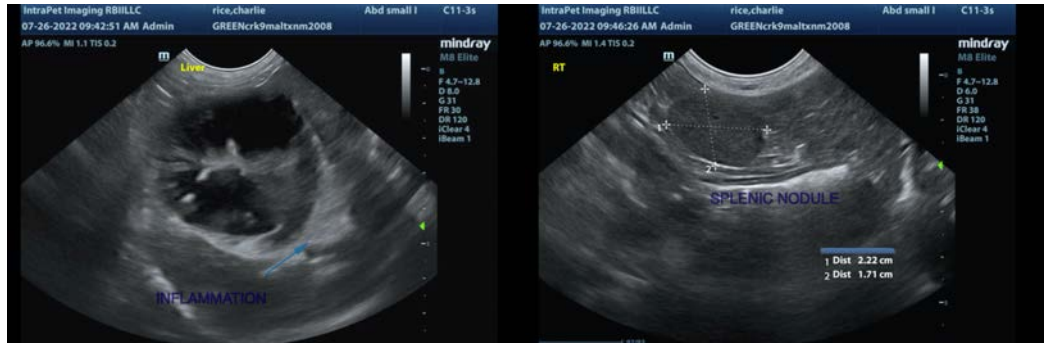
Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

If surgery is not an option, consider medical management with Ursodiol, antibiotics, and close monitoring, as this seems likely to progress to a surgical lesion. Additionally, a fine needle aspirate of the spleen could be considered.

There is a moderate amount of sandy debris/small calculi in the dependent portion of the urinary bladder. Recommend urinalysis and culture, and abdominal radiographs to see if this material can be visualized. It is difficult to determine if this could pass, although there is some risk for obstruction.







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.

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