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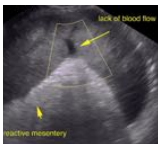
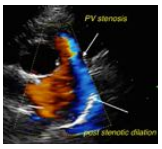
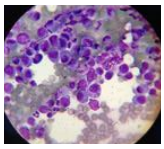
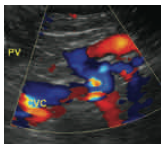

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1-800-838-4268 info@sonopath.com

PATIENT
Hinza Kowalewski

SPECIES
Canine

BREED
Shepherd Mix

SEX
Spayed Female

AGE
11 years

WEIGHT
59.4 lbs

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
Dr. Prescott

HOSPITAL NAME
Roundout Valley VA

REFERRING VET
Dr. Prescott

INVOICE
30205

DATE
5/9/22

PRESENTING CLINICAL SIGNS

Routine Exam revealed elevated LE (ALP 889, ALT 142, Creat1.7, PSL 196); p was treated with Denamarin for 1 month; at recheck ALT 511 and ALP 1063, PSL 288. P is asymptomatic.
Abnormal PE/Chem/CBC/UA Results: 3/22 ALP 889, ALT 142, Creat1.7, PSL 196 4/20 LT 511 and ALP 1063, PSL 288.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is well distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass.

Kidneys

The **left** kidney measures 6.20 cm (within normal limits). The capsule is smooth. The cortex is moderately hyperechoic and a mild to moderate loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. Blood flow is adequate. The surrounding mesentery is very mildly hyperechoic.

The **right** kidney measures 5.29 cm (low normal). Findings are similar to the left kidney.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.66 cm at the cranial pole, 0.55 cm at the caudal pole. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 0.44 cm at the cranial pole, 0.53 cm at the caudal pole and 1.64 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

Mild splenomegaly. The spleen is within normal limits in architecture, echotexture, and echogenicity. The capsule is smooth. Mild perivascular cuffing is observed, which is consistent with myelolipomas. The latter are considered clinically insignificant. Presence of a hyperechoic nodule, measuring 4.4 mm in diameter x 5.0 mm in length. The nodule does not disrupt the integrity of the splenic capsule. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

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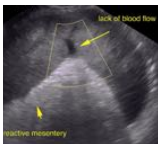
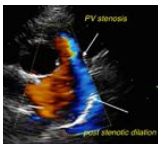
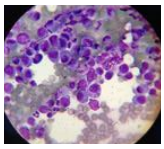
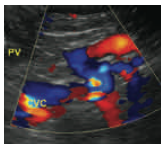

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Liver

Hepatomegaly is suspected. The liver's borders are smooth and sharp. Its echotexture is homogeneous. The liver is mildly, but diffusely hyperechoic, i.e., it is isoechoic to the spleen. No abnormalities are observed with the hepatic vessels visualized.

The gallbladder (GB) is moderately to markedly distended with a moderate amount of free floating and inspissated echogenic material. The GB wall is mildly thickened and hyperechoic. The cystic duct is dilated (8.1 mm). The cystic duct contains severely echogenic, inspissated sludge. Acoustic shadowing is not observed, i.e. there are no obvious signs of cholelithiasis. The common bile duct is dilated measuring up to 5.7 mm. There are no obvious signs of an obstruction. The parenchyma surrounding the GB is mildly hyperechoic.

Gastrointestinal

The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Fogging of the mucosa throughout the small intestines is observed. Abnormally dilated loops of bowel are not observed.

The colonic wall is not thickened and mural detail is considered normal.

Pancreas

No overt abnormalities are observed with the echogenicity or echotexture of the XX limb. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.

Other

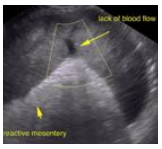
Lymph nodes

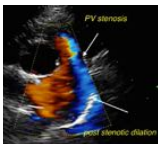
No abnormalities are observed

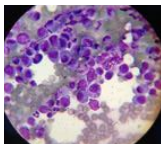
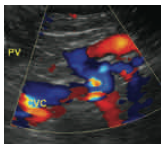
Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- The hepatomegaly and diffuse hyperechogenicity of the liver may be due to hepatitis, which may be primary (immune-mediated) or secondary in origin. Examples of secondary causes include, toxins, including medications and natural supplements, infectious agents, such as, parasites, viruses, or bacteria. Other causes of a diffusely hyperechoic liver and hepatomegaly include, cholestasis and cholangitis/cholangiohepatitis. Finally, a vacuolar hepatopathy secondary to stress or chronic illness may also be contributing to the sonographic abnormalities observed.





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- The appearance of Hinza's gall bladder is not consistent with a mucocoele. However, cholecystitis cannot be excluded. Although the presence of gall bladder sludge is not necessarily clinically significant, some dogs may show clinical signs of gastroesophageal reflux disease as a result of the sludge, therefore, obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor may be required depending on the patient's history. Treatment with ursodeoxycholic acid (Ursodiol) is suggested to prevent further accumulation of debris and help liquify the sludge that is currently present (see below).
- Splenomegaly is often observed in German shepherd and German shepherd mix breed dogs. The cause of splenomegaly in this breed is not known, but is not considered clinically significant.
- The appearance of the hyperechoic splenic nodule is suggestive of a benign process, such as fibrosis, fat deposition and/or mineralization, as well as nodular hyperplasia. The hypoechoic nodule is also suggestive of a benign process, such as nodular or lymphoid hyperplasia or possibly extramedullary hematopoiesis. Neoplasia is considered unlikely.
- Moderate renal changes are present, which are suggestive of age related degeneration.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor may be required depending on the patient's history.

Treatment with ursodeoxycholic acid (Ursodiol) is suggested to prevent further accumulation of debris and help liquify the sludge that is currently present. A total dose of 10-15 mg/kg divided twice daily is suggested. The dose should be gradually uptitrated until the maximum dose is achieved to avoid gastrointestinal side effects. Administer with a meal to decrease risks of GI side effects.

A sonographic re-evaluation of the gallbladder is strongly suggested 2-4 months following the initiation of ursodeoxycholic acid to ensure it is effective.

Hepatitis, cholestasis, cholangitis/cholangiohepatitis and cholecystitis cannot be excluded and secondary ascending bacterial infections may occur. Although indiscriminate use of antibiotics is not normally recommended, one could begin treatment with a broad-spectrum antibiotic and reassess liver enzyme activities, including a GGT, in approximately 4 weeks, while Hinza is *still receiving* the antibiotics. If an improvement is observed, the antibiotic should be continued for an additional two weeks. If an improvement is not observed, a decision to pursue further diagnostics, for example, a FNA of the liver, may be pursued.

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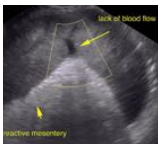
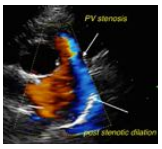
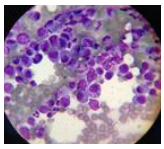
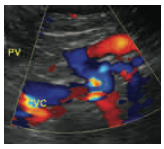

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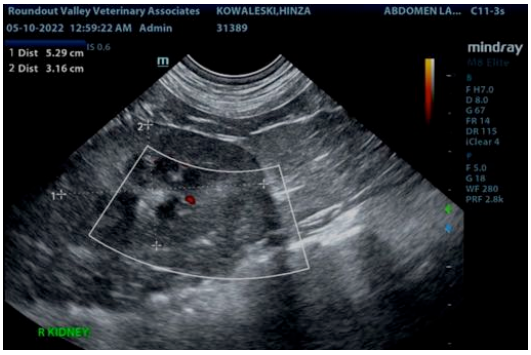

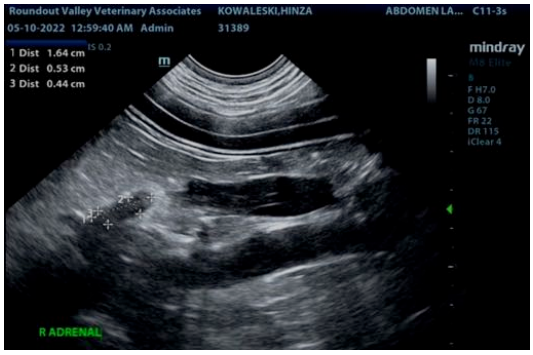

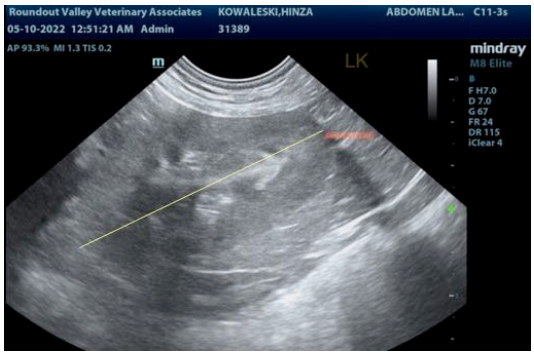

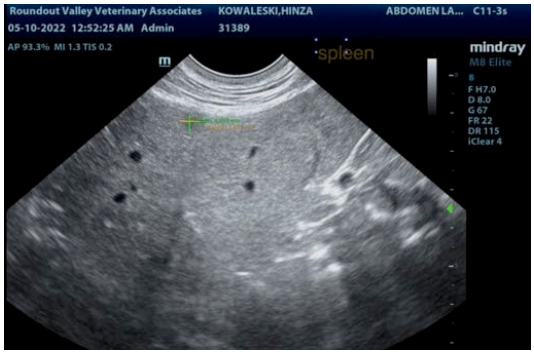

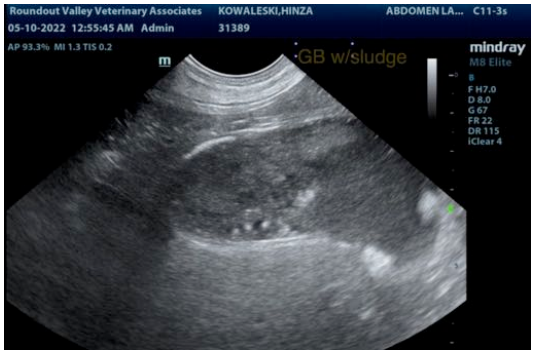

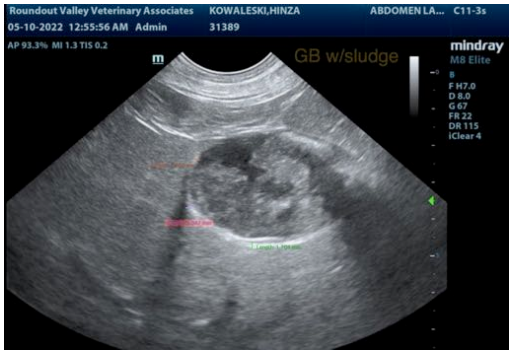

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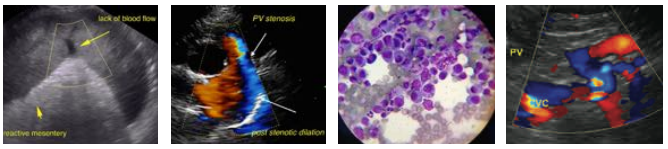

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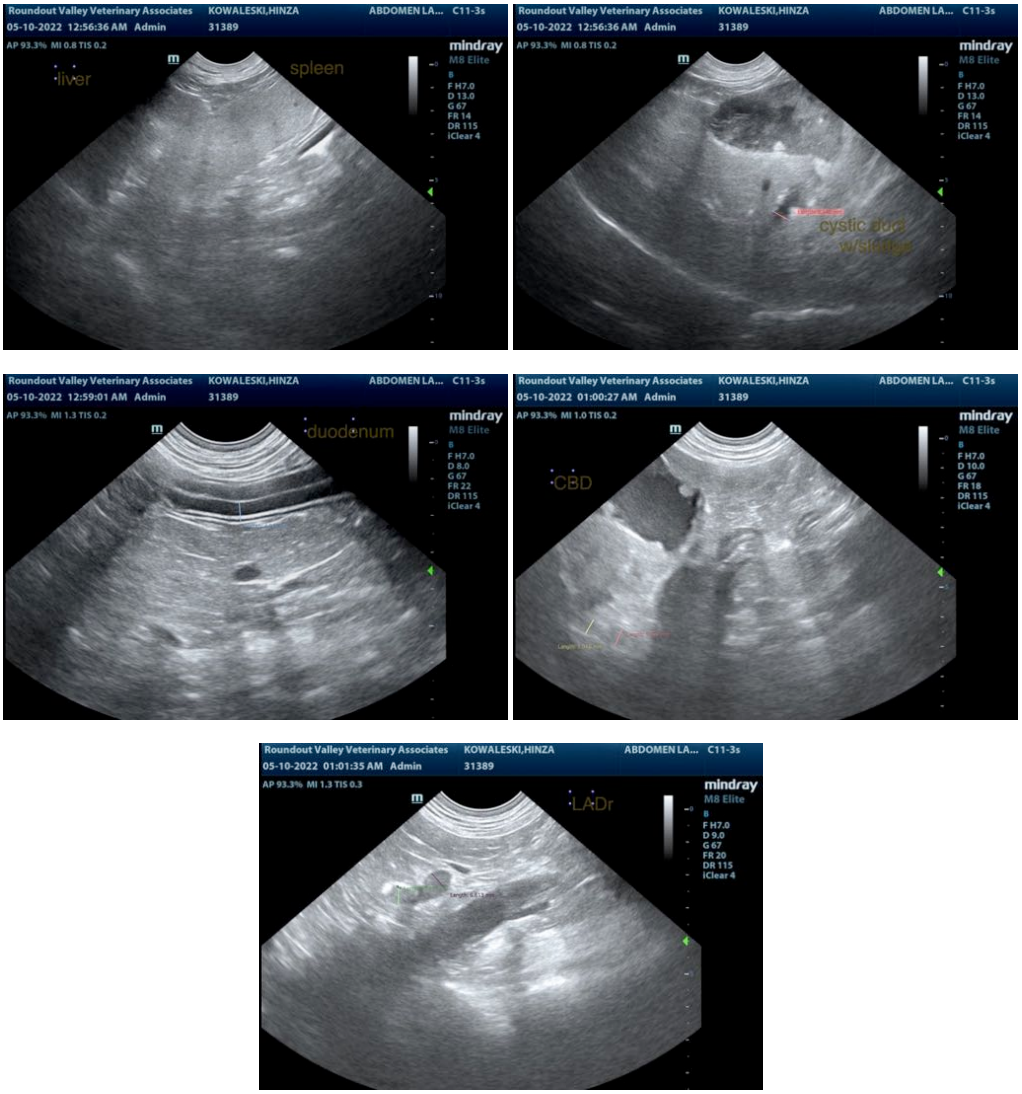

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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