

**PATIENT**

Riley Leonard

PRESENTING CLINICAL SIGNS

Recheck BW due to abnormal pancreatic enzymes
 Abnormal PE/Chem/CBC/UA Results: abnormal pancreatic enzymes

SPECIES

Canine

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. Ureteral papillae: no abnormalities observed.

BREED

Yorkie

Prostate**SEX**

Neutered Male

The prostate is homogenous and measures 0.58 cm, which is within normal limits for a neutered male.

Kidneys**AGE**

11 Years

The **left** kidney measures 3.59 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. Very mild mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

WEIGHT

8.9 Pounds

The **right** kidney measures 3.53 cm. Findings are similar to the left kidney.

Aortic bifurcation/trifurcation

No abnormalities observed.

INTERPRETED BY

Lisa Carioto, DVM,
 DVSc, Diplomate
 ACVIM

Adrenal Glands

The **left** adrenal gland measures 0.59 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. Corticomedullary definition is within normal limits. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

IMAGING PERFORMED BY

Amy Mayhew, LVT

The **right** adrenal gland measures 0.57 cm at the cranial pole, 0.56 cm at the caudal pole and 0.67 cm at its largest diameter. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

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Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. An ill-defined hyperechoic nodule, measuring 3.7 mm in diameter x 3.59 mm in length, is observed. It is consistent with perivascular cuffing, i.e. myelolipomas, which are clinically insignificant. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

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Liver**INVOICE**

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Mild hepatomegaly is suspected, however, size is better characterized at the time of the ultrasound or with radiographs. The liver's borders are smooth and sharp. Its echotexture is homogeneous and within normal limits in echogenicity. Focal lesions are not observed. Mild to moderate perivascular cuffing is observed, which is suggestive of inflammation, deposition of fat, and/or mineralization. No abnormalities are observed with the hepatic veins. The mesentery surrounding the liver is hyperechoic.

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A moderate amount of free floating, gravity-dependent and inspissated echogenic material is visualized within the gallbladder. The wall is within normal limits in thickness and echogenicity. There is no evidence of edema surrounding the GB. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.

SPECIES

Canine

Gastrointestinal

The gastric wall is within normal limits in thickness and the wall layers are well defined, however, the mucosa is more prominent than usual, and stippling is present. Fluid and gas are present. No obvious abnormalities are observed with its peristalsis.

BREED

Yorkie

Duodenum: Mild stippling of the mucosa is observed. Fluid and a large amount of gas are present in the lumen of the duodenum. A "to and fro" motion is absurd rather than normal peristalsis.

SEX

Neutered Male

Jejunum: Mild to moderate fogging and mild stippling of the mucosa is noted in some loops.

The definition of the wall layers of the small intestines is preserved.

Abnormally dilated loops of bowel are not observed.

AGE

11 Years

The colonic wall is at the high end of normal reference range (0.20 cm) in certain regions, but measures up to 0.40-0.45 cm in others. The mucosa and muscularis are more prominent than normal in some regions, and fogging and stippling of both layers are noted elsewhere. Gas and fluid are present in the descending colon; it is essentially empty.

WEIGHT

8.9 Pounds

Pancreas

The left and right limbs are not enlarged and the contours are smooth and regular. They are not overtly hypoechoic, however, the surrounding mesentery is mildly hyperechoic. Signs of neoplasia are not appreciated.

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ACVIM

Other**Lymph nodes**

Mesenteric LNs: No abnormalities are observed in size and contours are smooth, however, one of the lymph nodes is mildly hypoechoic.

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Abdominal effusion is not visualized.

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ULTRASONOGRAPHIC FINDINGS

- **Pancreas:** Although overt hypoechoogenicity of the pancreatic parenchyma is not observed, the surrounding mesentery is mildly hyperechoic. Therefore, *smoldering pancreatitis* or *pancreatitis in the midst of resolution* is suspected. Signs of neoplasia are not appreciated.
- **Gastrointestinal tract:** *Diffuse inflammation* is suspected. Differential diagnoses include underlying *inflammatory bowel disease*, food intolerance, dysbiosis, etc. The colonic changes are suggestive of inflammation, for example, a recent bout of colitis. There are no obvious signs of neoplasia.
- **Liver and Gallbladder:** Cholangitis/cholangiohepatitis and cholecystitis are suspected, as well as cholestasis. A suppurative component cannot be excluded. Gallbladder sludge is often clinically insignificant, however, gastroesophageal reflux disease (GERD), can occur in some patients. Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid may be required.

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- **Kidneys:** Very mild age-related degenerative changes are noted.
- **Adrenal glands:** The adrenal glands are at the high end of the normal reference range for a dog of Riley's size. Adrenal hyperplasia due to stress or illness is suspected.

SPECIES

Canine

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The following are suggested/recommended

BREED

Yorkie

Fasting triglycerides - to determine if hypertriglyceridemia is a predisposing factor to development of pancreatitis.

SEX

Neutered Male

Obtaining a history regarding signs of GERD from the client. Treatment with an anti-acid, proton pump inhibitor (0.7-1 mg/kg PO q12h) or ursodeoxycholic acid may be required.

Deworming (fenbendazole), even if he receives monthly heartworm prevention.

AGE

11 Years

Diet trial (veterinary prescription low fat, hypoallergenic, hydrolyzed or novel protein) due to history of pancreatitis, for example, Purina HA. Royal Canin Hypo HP possible, but is higher in fat.

Serum cobalamin, folate to exclude hypcobalaminemia and dysbiosis

WEIGHT

8.9 Pounds

Monitor albumin and globulin concentrations; Yorkshire terrier are predisposed to lymphangiectasia.

+/- fine needle aspirate (FNA) of the liver to exclude inflammation

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+/- culture of bile to exclude secondary bacterial infection.

Differential diagnoses include cholecystitis, cholangitis/cholangiohepatitis, and secondary ascending bacterial infections. Although indiscriminate use of antibiotics is not recommended, one could consider broad-spectrum antibiotic for a minimum of 4 weeks, and possibly up to 6 weeks

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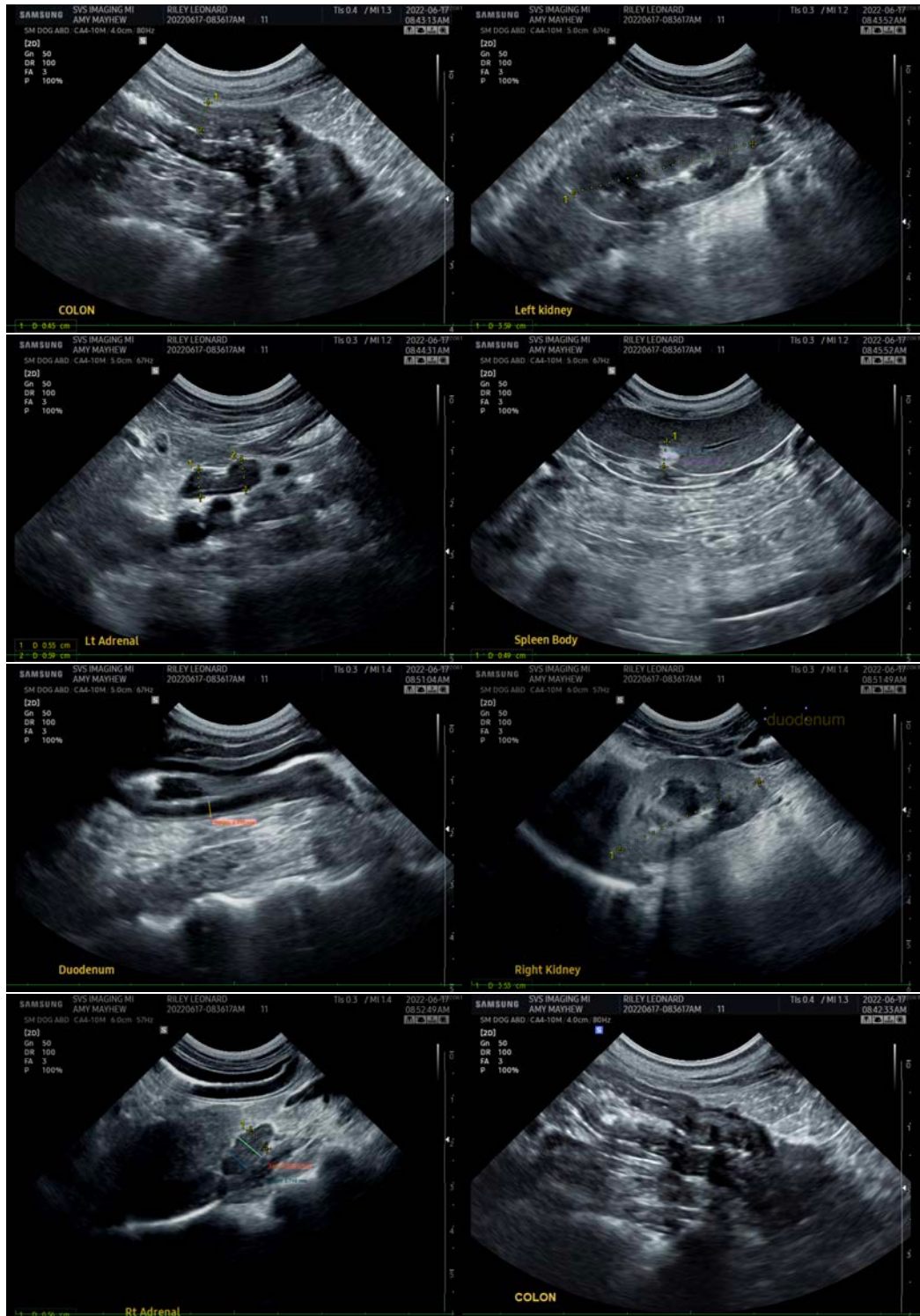
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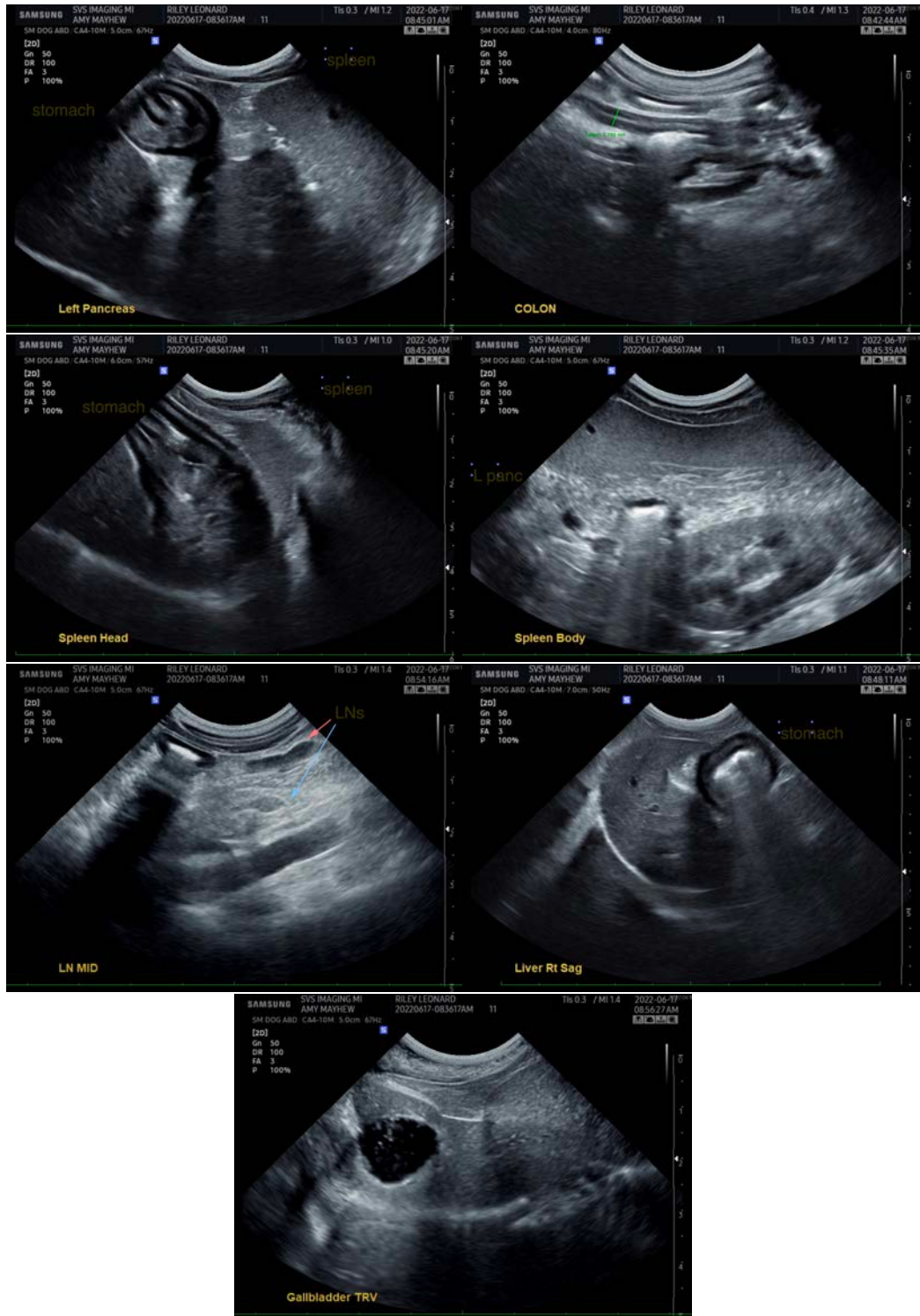
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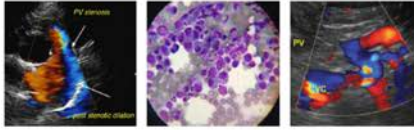


The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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