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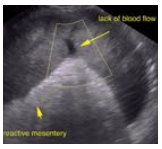
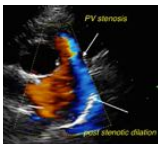
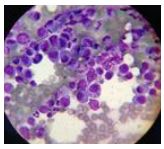
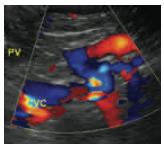

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1-800-838-4268 info@sonopath.com

PATIENT

Jericho Rauchut

SPECIES

Canine

BREED

Lab Mix

SEX

Neutered male

AGE

11 years

WEIGHT

120 lbs

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Amy Priest

HOSPITAL NAME

Long Valley AH

REFERRING VET

Dr. Welch

INVOICE

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PRESENTING CLINICAL SIGNS

History of recent pitting edema in hindlimbs. L >> R limb. Hx recent low albumin and proteinuria. Hx elevated alkphos. Recently borderline hypoglycemic on BW, fasted rechecked as well. O reports increased appetite. Recent diarrhea/blood noted in hospital today. Hx arthritis, recent low thyroid and weight gain (prior to pitting edema, initiated therapy with thyrotabs few months ago). O had stopped thyroid meds on own terms.
Abnormal PE/Chem/CBC/UA Results: CBC : RBC : 9.04 H Hematocrit : 59.5 H Hemoglobin : 21.4 H Reticulocytes : 118 H Reticulocyte Hemoglobin : 24.4 L Lymphocytes : 610 L Eosinophils : 32 L CHEM : Glucose : 61 L Albumin : 2.2 L Albumin:Globulin Ratio : 0.6 L ALP : 844 H Cholesterol : 490 H Creatinine Kinase : 226 H TT4 = 2.5 U/A : USG 1.004 UPC ratio = 5.0 Repeat fasted BG = 69

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** is well distended. The wall is smooth, but mildly thickened (2.5-3.4 mm) and irregular. No abnormalities are present with the trigone or proximal urethra. A moderate amount of free floating sediment is present, however, there is no evidence of cystoliths, polyps or a mass.

Kidneys

Left kidney: 8.53 cm. The capsule is smooth. The cortex is thickened and hyperechoic, i.e., it is mildly hyperechoic to the spleen. A loss of the normal definition of the cortico-medullary junction is present. There is no evidence of nephroliths or pyelectasia. The pelvis is hyperechoic, which is attributed to the accumulation of fat and/or mineralization. Blood flow is difficult to interpret due to panting artifact, however, it is most likely adequate. The surrounding mesentery is moderately hyperechoic.

Right kidney: Accurate measurements of the kidney is not possible, due to gas in the surrounding gastrointestinal tract. No major abnormalities are noted in size or shape. Findings are similar to the left kidney. Blood flow appears to be within normal limits. The surrounding mesentery is very mildly hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.70 cm at the cranial pole, 0.88 cm at the caudal pole. A rounded, caudal pole is noted, without evidence of a well-defined nodule or mass. No abnormalities are noted in echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland is not well visualized.

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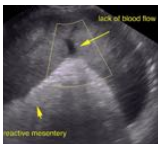

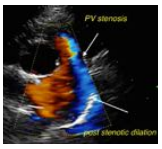

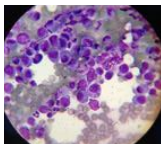
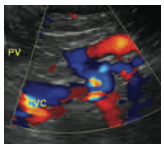

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Spleen

Subjectively, the spleen is enlarged and is diffusely hyperechoic. It is within normal limits in echotexture. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver

There are no obvious signs of hepatomegaly, however, this is better characterized at the time of the ultrasound or radiographically. The liver's borders are smooth and vary between sharp to mildly rounded. It may be mildly hyperechoic, i.e., it is almost isoechoic to the spleen, however, the spleen is hyperechoic than usual. A diffuse, mildly coarse or granular echotexture is observed.

Multiple, hypoechoic nodules are observed scattered throughout the parenchyma. They are similar in size, approximately, 1.2 cm in diameter x 1.3 cm in length. No obvious abnormalities are noted with the hepatic vessels, other than mild to moderate perivascular cuffing which is suggestive of the deposition of fat, mineralization and/or inflammation.

The gallbladder (GB) wall is thickened (2.5 mm), but within normal limits in echogenicity. A small to moderate amount of echogenic material is present within 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.

Gastrointestinal

A large amount of ingesta and gas are present within the lumen of the stomach. 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 and stippling of the mucosa is present. Abnormally dilated loops of bowel are not observed.

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

Pancreas

The pancreas has a coarse echotexture, and is mildly to moderately heterogeneous. It consists of hypoechoic nodules of variable size and pinpoint to punctate hyperechoic foci scattered throughout the parenchyma. Severe hyperechogenicity of the mesentery and acoustic enhancement are present in the region of the stomach and body of the pancreas.

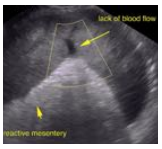
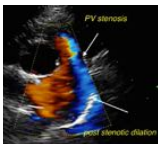
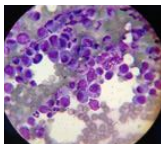
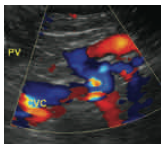
Other

Mesentery

The mesentery in the right cranial to mid quadrant is severely hyperechoic with acoustic enhancement.

Lymph nodes

No abnormalities are observed

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Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- **Spleen**: Splenomegaly, which may be due to extramedullary hematopoiesis, hypersplenism or reactive hyperplasia. However, neoplasia, such as lymphoma, histiocytic sarcoma, or other round cell tumour, cannot be excluded. A fine needle aspirate is required to obtain a definitive diagnosis.

- **Pancreas:** The pancreatic changes are suggestive of nodular hyperplasia and fibrosis, which may occur due to age-related changes, and secondary to previous episodes of pancreatitis, mineralization and amyloid deposition. The severe hyperechogenicity of the mesentery and acoustic enhancement in the region of the stomach and body of the pancreas may occur due to active pancreatitis, as well as neoplasia. An insulinoma must be considered as a differential diagnosis for the sonographic and serum biochemical changes noted.

- **Liver**: A reactive hepatopathy is suspected, which is a non-specific change. The multiple hypoechoic nodules may occur due to nodular hyperplasia, however, neoplasia, such as metastatic lesions, cannot be excluded, despite the absence of "target-like" lesions.

- **Gallbladder**: *Gallbladder sludge* is often clinically insignificant, however, gastroesophageal reflux disease (GERD), can occur in some patients. Obtaining a history regarding signs of GERD (prior to this episode of illness) from the client is suggested. Cholecystitis or a secondary bacterial infection of the sludge, cannot be excluded despite the absence of classical sonographic signs.

- **Kidneys**: Hyperechogenicity of the cortices and surrounding mesentery may occur secondary to pyelonephritis or glomerulonephritis.

- **Urinary bladder**: A subclinical urinary tract infection cannot be excluded given the mild thickening of the bladder wall. Findings should be correlated with clinical signs, a urinalysis and urine culture and sensitivity

- **Adrenal glands**: The left adrenal gland The rounded, caudal pole of the left gland may be due to adrenal hyperplasia secondary to stress. An emerging, benign adenoma, or a lipoma, may also explain its shape. There is no evidence of a well-defined nodule or mass to suggest neoplasia. The right adrenal gland is not well visualized.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Fine needle aspirates of the liver, hypoechoic nodules of the liver, the pancreas and the spleen may be performed, pending a coagulation profile.

Fasting blood glucose and a serum insulin concentration may help exclude an insulinoma. Insulin-like growth factor may also help exclude an insulinoma.

A urinalysis and urine culture and sensitivity are suggested to exclude a urinary tract infection (UTI) and pyelonephritis.

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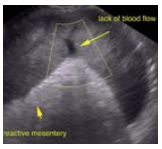
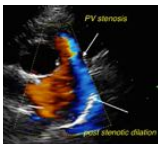
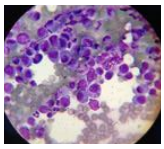
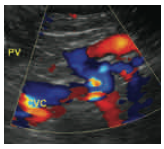

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Arterial blood pressure

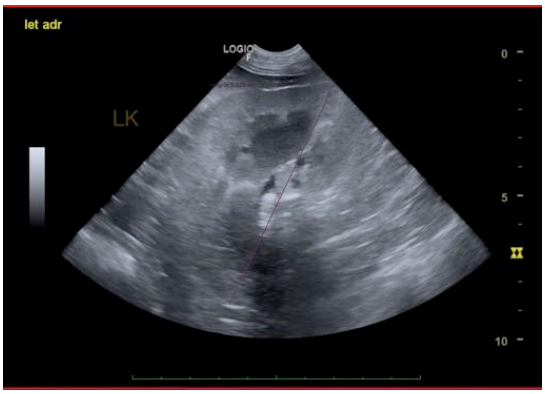
Systemic inflammation may cause proteinuria, however, a false positive may occur if a UTI or pyelonephritis is present.

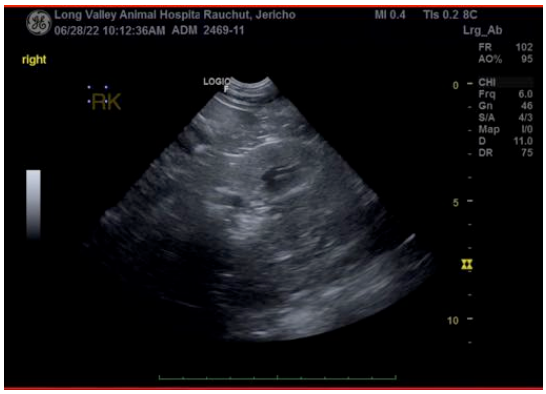
Proteinuria secondary due to glomerulonephritis may also occur. Nephrotic syndrome may be contributing to the pitting edema.

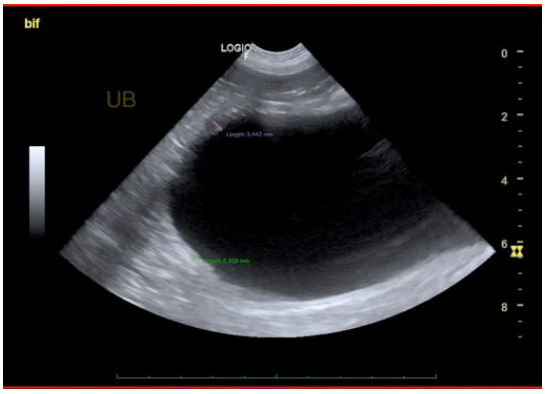
Although a SNAP 4Dx and leptospirosis are suggested to rule out causes of GN, neoplasia of the pancreas, liver and possibly, spleen, are the primary concerns.

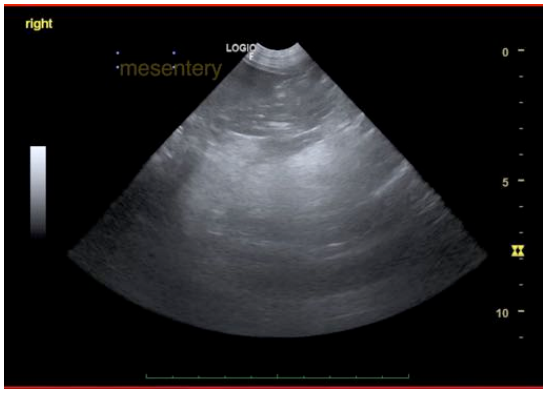
If further diagnostics are not pursued, treatment with low dose steroids (prednisolone or prednisone 0.25 mg/kg/day) may be considered to help improve blood glucose. A good quality diet (not high in simple sugars) is also recommended to maintain blood glucose concentrations.

Evaluation of a blood smear by a pathologist.









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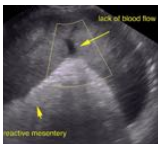
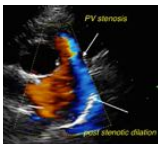
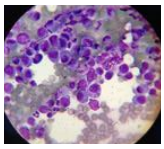
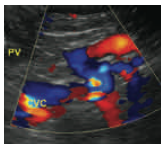

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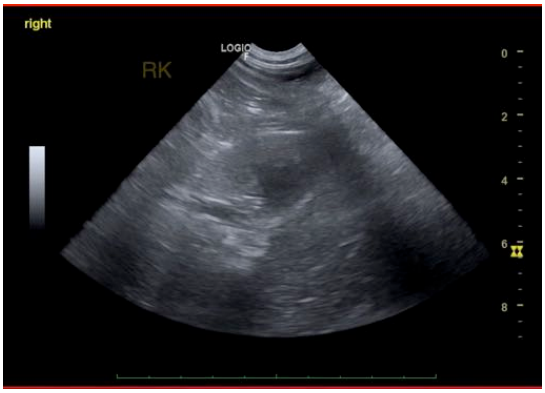

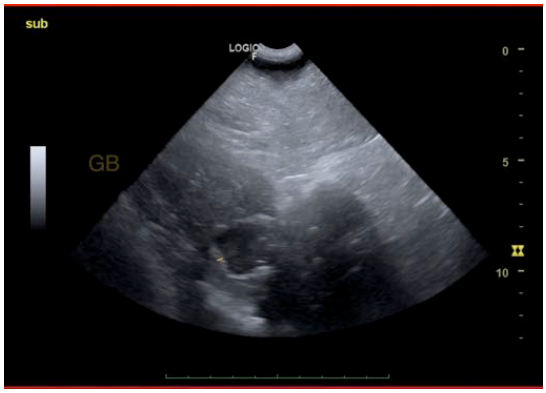

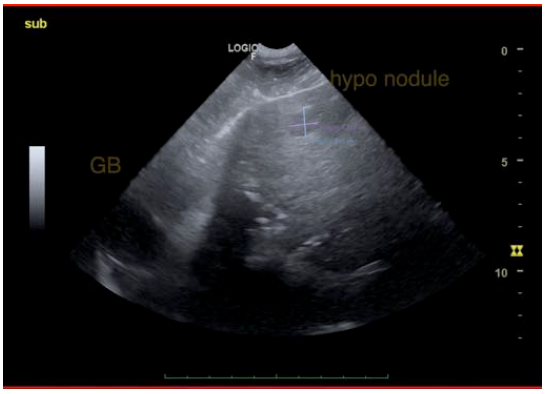

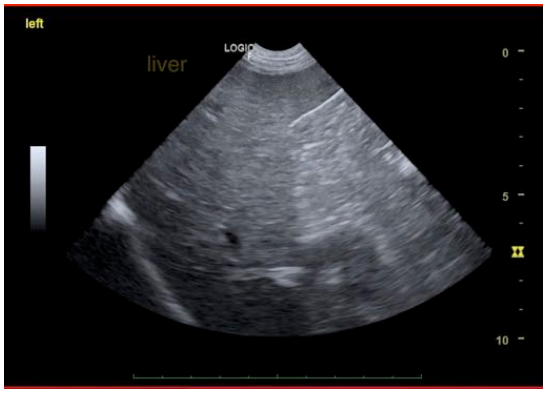

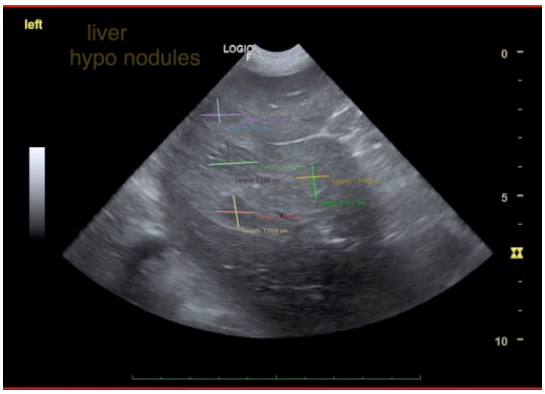

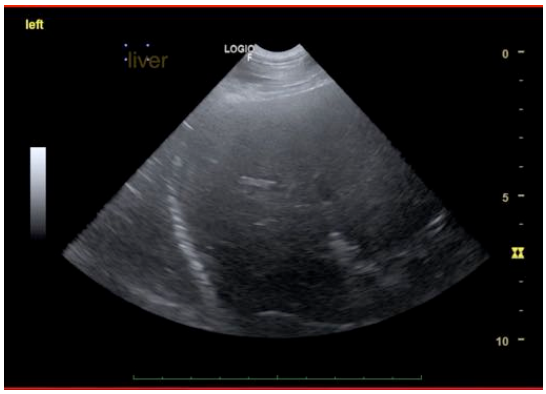

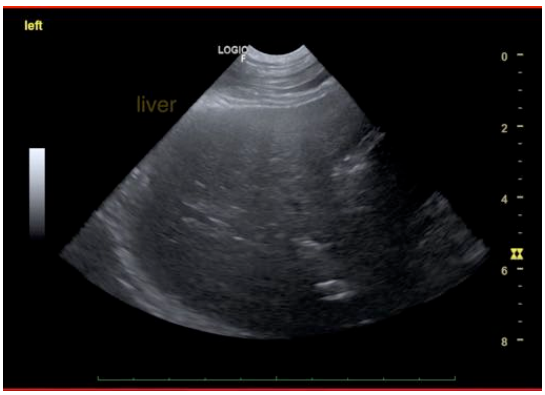

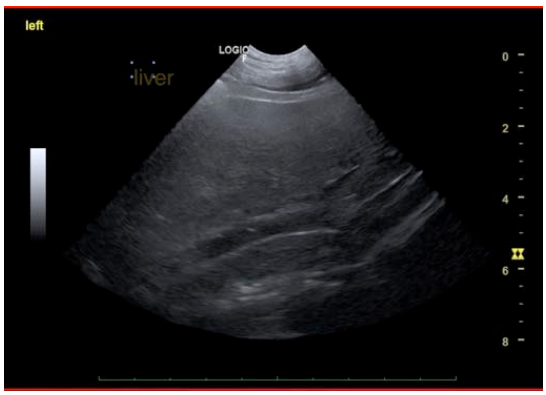

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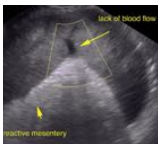
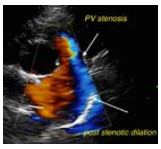
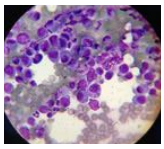
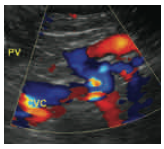

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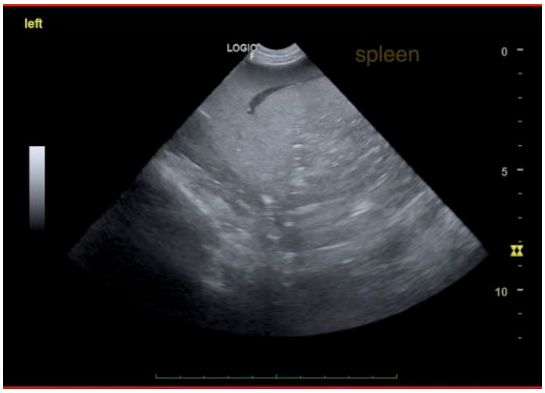

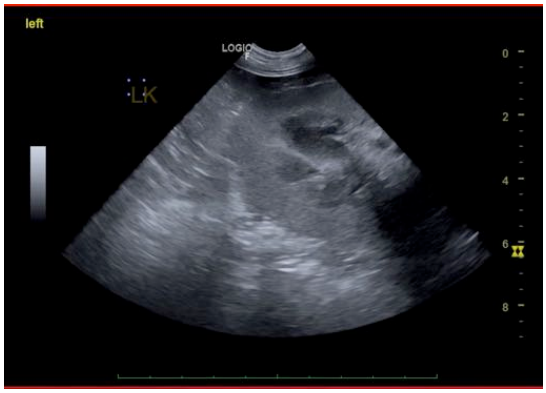

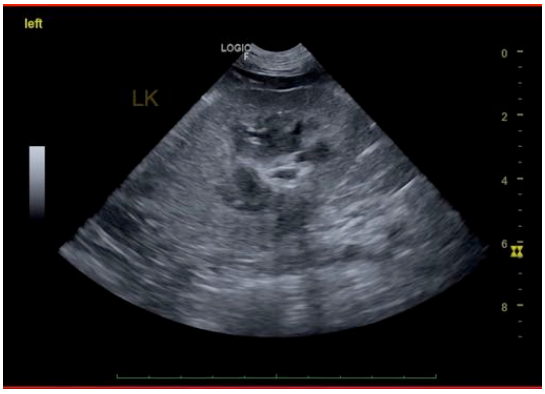

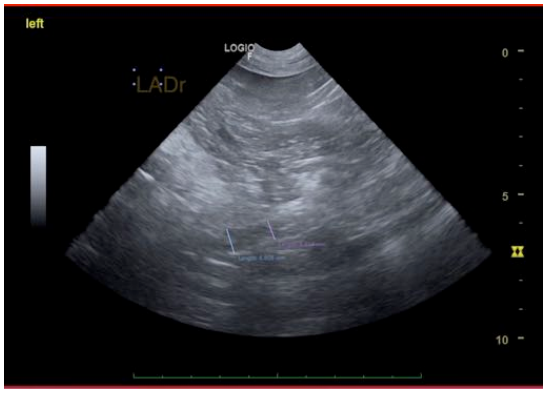

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Amy Priest

HOSPITAL NAME

Long Valley AH

REFERRING VET

Dr. Welch

INVOICE

31328

DATE

6/29/22

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

Lisa.Carioto@sonopath.com